

COLORADO
PLATEAU

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Advocate

GRAND CANYON TRUST



Contents

- 2 Letter from the Executive Director
- 4 Kanab Creek Uranium Mess
- 6 When Will We Hear Sounds of Silence at Grand Canyon?
- 8 Taming the Leviathan
- 10 Grand Canyon: Place of Emergence for Havasupai People
- 12 Majestic Grand Canyon
- 14 Volunteering Brings Grand Canyon Up Close and Personal
- 16 Kane and Two Mile Ranches: The Connection to Conserving Grand Canyon
- 18 Unique Threats to Saquatuvka
- 20 Busy for Beavers in Utah
- 22 Utah Wildlands Program to Build Local Network



M. QUINN/NPS

Editor's Note: The views expressed by the guest writers in this issue are solely their own and do not necessarily represent the views of the Grand Canyon Trust.

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www.grandcanyontrust.org

This year, as western states like Utah and Arizona consider laws claiming title to the federal lands within their borders, it is worth taking a moment to visualize our country during the period of Manifest Destiny in the nineteenth century. Concerned that control demanded occupation, Congress passed dozens of statutes facilitating settlement of public lands, extraction of resources, and the building of transportation infrastructure to make it all possible. Adapted from common practice in the boom towns, the mining laws of the 1860s and 1870s, in particular, allowed an individual to stake and occupy any number of twenty-acre claims, especially including the water sources, hold them indefinitely, and assume outright ownership of the land if it promised commercial ore.

Thus, when William Hardy wandered among the Havasupais at the Grand Canyon in 1866, he was the region's first lonely prospector, but armed with a preemptive new law allowing him to lay claim to any land that piqued his fancy. Enterprising sourdoughs soon joined him, staking lead and zinc and silver and copper claims, while others, envisioning tourist gold, filed claims to the scenic overlooks, river crossings and trail heads, undeterred by the absence of minerals. They were rushing to cash in on the coming of the transcontinental railroad in 1882, which was itself being built on a massive give-away of federal land. It's how the West was won.

So pervasive was the practice of filing false claims that Ralph Cameron, who had a real copper mine on Horseshoe Mesa, filed bogus claims to the entire South Rim from Hermit Basin to Grandview Point, including the spot where inside information told him the railroad spur would end, at the head of his toll road on the Bright Angel Trail. In this cutthroat world, competitors were first incredulous when James Thurber failed to file a mining claim to the site of his Bright Angel Hotel, and then they swooped in to correct the defect.

Grand Canyon

Keep this great wonder of nature as it is. Do nothing to mar its grandeur, for the ages have been at work upon it. Keep it for your children, your children's children, and all who come after you.

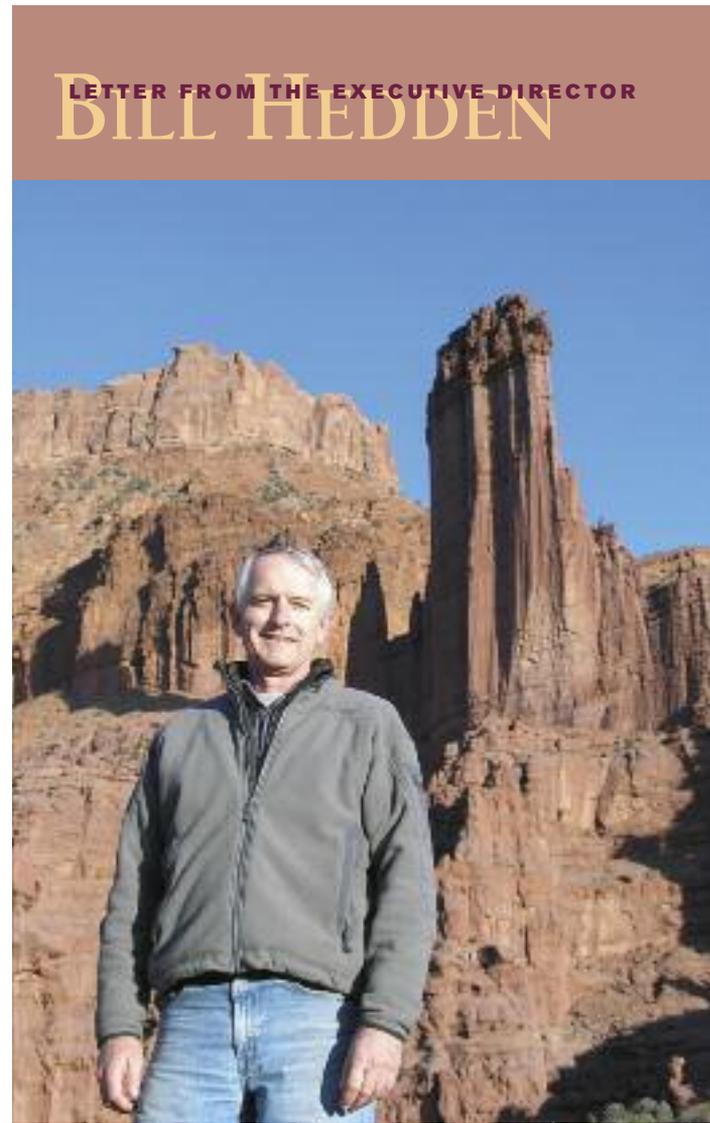
—Theodore Roosevelt

The federal government was mired in canceling, buying out and accommodating claims until at least the 1960s when the East Rim Drive was rebuilt to sort out the unfavorable 1920s alignment necessitated by obstructive mining claims. It all seems like a rascally story out of early Americana, except that the exact same 1872 Mining Law still rules the federal lands today.

In a modern frenzy Ralph Cameron would have appreciated, miners staked thousands of uranium claims around the Grand Canyon when the world price for the metal spiked in 2007. And like previous booms, this one necessitated another laborious government process to push the prospective mines back a few miles from the World Heritage Site, this time through Interior Secretary Salazar's 2012 withdrawal of the last places where a miner could hammer in stakes right on the rim above the gorge itself.

The withdrawal is reasonable in the extreme, leaving the vast majority of northern Arizona's uranium open for business-as-usual and grandfathering any claims that have already proven to contain commercial grade ore; but the mining industry and their congressional friends are indulging in an orgy of outrage and a mudslide of lawsuits and legislation hoping to surround the Canyon in a web of waste pits, dusty truck haul roads, lights, noise, and deep mine holes into toxic formations perilously close to the groundwater that feeds the springs and streams in the canyon. Good people, including some at the Grand Canyon Trust, will have to invest a measurable share of their lives to assure that nightmare does not come true.

This issue of the *Advocate* pulls back from the uranium problem to look more broadly at the Grand Canyon today, where commercial interests and their allies are also aggressively promoting unbridled air tours, two enormous hotel developments in Tusayan and near the confluence of the Little Colorado and Colorado Rivers, long-term operation of Navajo Generating Station without upgrading pollution controls,



LETTER FROM THE EXECUTIVE DIRECTOR BILL HEDDEN

RICK MOORE

and water releases from Glen Canyon Dam that continue to favor hydropower revenues at the expense of native fish, beaches, and archaeological sites downstream. Every generation has its schemers, trying to make a buck from our public land treasures. We are richer as a people when we choose instead to enjoy the endless dividends of joy and wonder provided daily by the unspoiled Grand Canyon. ☼

KANAB CREEK URANIUM MESS

by Roger Clark



Crumbo climbs atop a ten foot pile of debris for a better look. Mounds of crushed rock, a metal building, a steep-sided pit lined with thick plastic, and a sixty-foot, steel-beam hoist are enclosed by an eight-foot tall chain-link fence, rimmed with three sagging strands of barbed wire. The twenty-acre industrial site looks to be about the size of a Walmart parking lot. “Yep,” he says, “the pond has maybe a foot of water.”

Kim Crumbo and I met in Kanab, Utah earlier that morning before departing for three days to inspect uranium mines located in the Kanab Creek watershed. The drainage is the largest tributary to the Colorado River north of Grand Canyon National Park. Kim left his career with the National Park Service and now works for the Grand Canyon Wildlands Council.

It was early February, clear and seasonably cold. The arid clarity of air brought brilliance to Yellowstone Mesa, silhouetting the western horizon as we

turned south on the sixty-one mile dirt road bisecting the Arizona Strip between Utah and Grand Canyon. The road ends at the North Rim’s much-photographed Toroweap Overlook. “Toroweap” is a Paiute word meaning “dry or barren valley.” All lands along our route were once home to Paiute people.

Our first stop was the Kanab North uranium mine where 260,800 tons of ore were removed between 1988 and December 1990. When the price paid for uranium dropped to a point where it was no longer profitable to mine, its owners locked the gate, drove away, and sold the mine to Canadian-based Denison Mines. In 1992, the Bureau of Land Management (BLM) classified the mine as “on standby and maintenance,” meaning that little has happened there in two decades.

As the price of uranium rose in 2006, so too did interest in reopening Kanab North and three other previously established mines within Grand Canyon

LEFT: Kanab North uranium mine.

MICHAEL COLLIER

RIGHT: Carletta Tilousi, Congressman Grijalva, and Uquala family members at Grand Canyon event.

AMANDA VOISARD

watersheds. Thousands of new claims were also filed as the uranium industry began another boom. Grand Canyon Trust worked with Arizona Congressman Raul Grijalva in introducing legislation to stop new uranium claims around the Canyon and supported the recently approved 20-year ban by the Secretary of the Interior. Mining advocates argued against any new restrictions, saying that they were unnecessary and were bad for business.

INDUSTRY OBJECTIONS

Uranium speculator Dr. Karen Wenrich testified before a Grijalva-chaired subcommittee of the U.S. House Committee on Natural Resources on July 21, 2009. “The uranium industry has undergone a significant evolution in the level of environmental understanding and management practices over the past thirty years. The mining impact from 1980-1995 when all mining ceased on the Kanab and Coconino Plateaus is so negligible that visitors today can no longer find where the three former reclaimed mines were located.”

Later she complained about testimony by the chairman of the Kaibab Band of Paiute Indians that companies “left, leaving them with the mess.” Wenrich responded: “Such a statement is irresponsible and has no factual basis, and can only be intended to mislead uninformed citizens to turn against the mining industry. All of the mines that had been depleted were reclaimed as per BLM requirements. The mines that were not reclaimed were placed on standby and requirements for sampling and monitoring these facilities on standby has been performed on a regular basis. This author challenges anyone to show a ‘mess’ on the Kanab Plateau. There was no negative impact to water, land, vegetation, air, or humans.”

Politicians soon chimed in with protests to the proposed ban on new claims. Arizona Congressman Ben Quayle said “the Department of Interior’s own study shows that uranium mining in this part of Arizona poses little to no environmental risk.” Arizona Governor Jan Brewer echoed that agency studies show that “uranium mining—conducted lawfully and with proper oversight—represents a minimal environmental risk.”



USGS FINDINGS

Early in 2010, the U.S. Geological Survey published a peer-reviewed report on the “effects of 1980s uranium mining in the Kanab Creek area of Northern Arizona.” The study was the first systematic sampling of mine sites since they were abandoned two decades ago. As it turns out, there is no truth to Dr. Wenrich’s claim that the BLM has been monitoring these sites.

At the Kanab North mine, the study found: “Mined waste rock, uranium ore, pond sludge, and local wind- and water-dispersed fine particles on the unreclaimed mine site (all of which contained high concentrations of uranium and other trace elements such as arsenic) were exposed to the ambient environment for about twenty years at the partially mined site...Erosion within the site has moved sediment into the lined pond.” Sludge from the bottom of the pond contained 1,800 parts per million of uranium.

The USGS survey was conducted during the heat of August. The lined pond at Kanab North was nearly dry. But it was holding water when we visited this winter. Given high concentrations of contamination that the study found in its sludge, the pond easily exceeds thirty parts per billion, the level considered safe for human consumption.

A flock of birds flies away from the pool as we approach. Cloven hoofs imprint dust near the padlocked entrance gate. A two-foot gap beneath it confirms where animals are accessing water within the fenced-in area. A golden eagle perches on a nearby power pole. No limits have been set for wildlife use of uranium-poisoned water.

The USGS study shows that contamination radiates well beyond the twenty-acre mine site. Soil sampled



The National Park Service warns hikers not to drink from Horn Creek in Grand Canyon when it's running because of uranium levels exceeding U.S. Environmental Protection Agency standards.

from as far away as 420 feet outside of the fence has an average uranium concentration that is more than ten times background concentration. “Wind appears to be the dominant process dispersing material off-site.” Clearly, findings from the Kanab North mining operation are part of the “mess” that is now polluting aboriginal homelands of Paiute people.

As for mines “that were reclaimed as per BLM requirements,” USGS found contamination at every one of them. The Hack Canyon reclamation sites, for example, “...were eroded by floods that exposed covered uranium-enriched mined waste-rock and ore fragments in a terrace adjacent to the stream channel.... Fragments of material from these floods were found in the channel and on the floodplain for as much as a half mile downstream from the reclaimed site.”

MORE MESSSES AHEAD

Denison has been operating the Arizona 1 uranium mine since 2009 and is readying its nearby Pinenut mine to reopen. During our February visit to these sites, we observed herons, ducks, and other birds using the nearly full mine ponds. Like Kanab North, both mines were permitted by the BLM and Arizona Department of Environmental Quality (ADEQ) and fully developed during the 1980s before being put on “standby.”

We recently learned that Pinenut’s mine shaft is flooded with millions of gallons of water, which is inundating exposed uranium ore. ADEQ reports that pumping from Pinenut has filled the pond to its capacity. Millions more gallons must be removed from the mine shaft before mining can recommence. State water permits do not provide for the possible need to find somewhere safe to dispose of excess water because uranium companies insist that mine shafts on the Arizona Strip are “always dry.” Nor does ADEQ require ground-water monitoring for possible contamination.

We will never know all of the adverse effects from previously developed uranium mines. But the ban on new claims will prevent the spread of more poisonous messes. ☹

A quarter century later and we’re still waiting for natural quiet to be restored at the Grand Canyon from air tour noise.

Despite claims by the commercial air tour industry that moving routes and creating no-fly times around dawn and dusk would ruin their business, they have thrived over the years and annually fly approximately 90,000 flights across Grand Canyon National Park.

WHEN WILL WE HEAR THE SOUNDS OF SILENCE AT GRAND CANYON?

by Rob Smith

Not surprisingly, it is difficult to find anywhere, especially in the backcountry, where a visitor seeking respite from mechanical noise can escape the whop-whop or drone of air tours overhead.

Following passage of the 1987 National Park Overflight Act, the National Park Service (NPS) had direction to substantially restore the natural quiet at Grand Canyon by recommending an air tour management plan which moved aircraft away from people on the ground. They made some initial changes, including establishing tour routes and limits on the number of flights, but these have fallen short of creating a quiet experience where most people come to seek it on trails or along the river.

Finally, the NPS is readying the release of their final environmental impact statement with what is expected to have additional no-fly areas and times, plus fewer flights, in special areas like Marble Canyon and between the rim visitor areas. A key management strategy in the NPS preferred alternative is to seasonally shift air tours between two inner-Canyon flight routes to prevent permanent noise sacrifice zones along well-travelled backcountry trails beneath.

Ironically, the champion of the 1987 law, Senator John McCain (R-AZ), has become its greatest gadfly now.

McCain has sought to prevent the new protections for Grand Canyon from coming forward by various last-minute and behind-the-scenes legislative moves to lock



Maverick helicopter flies below rim. DENNIS BROWNRIDGE

into place the status quo. Coincidentally, a generous McCain campaign contributor has been Elling Halvorson, the largest Grand Canyon air tour operator.

The most recent example was a McCain amendment to the Senate Surface Transportation bill, cosponsored by Senators Kyl, Reid and Heller, which would have limited which aircraft noise to consider, a tricky move to eliminate noise from jets, non-tour flights, military and private aircraft noise from counting at all, and potentially undermining the basis for the NPS recommended plan.

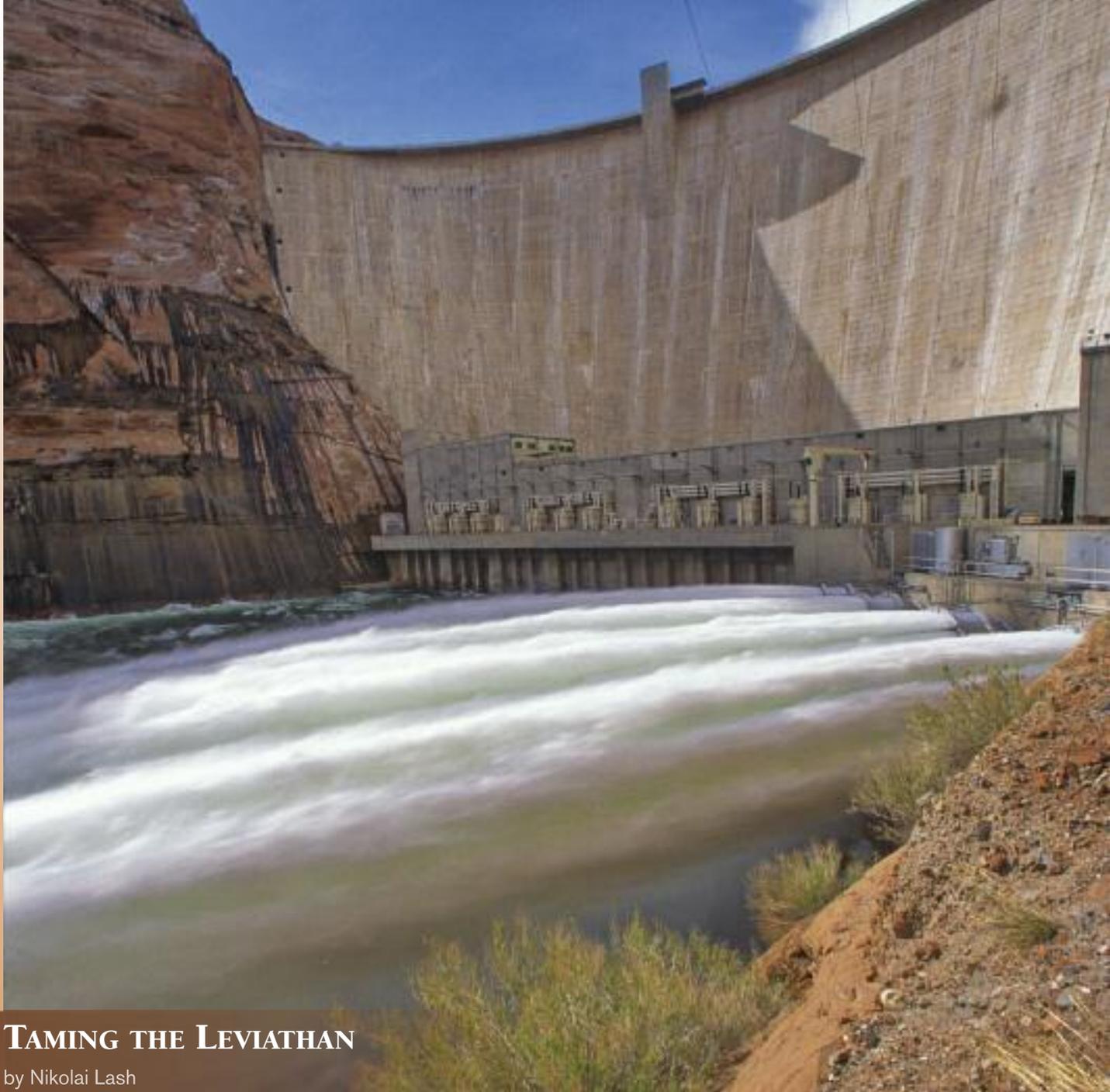
Fortunately those moves were countered by Senator Jeff Bingaman (D-NM) and the NPS process has been allowed to move ahead. But at this writing another attack on the Grand Canyon's quiet has been launched by Rep. Paul Gosar (R-AZ) through HR 4198, which would more explicitly halt the Park Service from making any changes to the current situation at all.

The air tour industry now claims that the new plan would cost them business, but there is little evidence that air tour customers will go elsewhere since existing

numbers of aircraft, and maybe even more, will continue to fly. But we expect continued resistance from that sector as the final rules are developed by the Federal Aviation Administration (FAA), the agency which ultimately controls the airspace. The FAA's role is supposed to be limited to safety, but they have read this charge creatively in the past.

For twenty-five years the Sierra Club and Grand Canyon Trust have sought to restore one of the Grand Canyon's most notable attributes, its commanding silence. Nearly 30,000 people commented during the public review period on draft NPS recommendations last year, and almost all were supportive of restoring natural quiet to the park. It's time to listen to the people, and not the aircraft, at Grand Canyon. 🌲

Rob Smith is senior organizing manager for the Sierra Club in Phoenix, and served on the Grand Canyon Working Group, a stakeholder advisory committee to the NPS and FAA on aircraft noise issues at the Grand Canyon.



TAMING THE LEVIATHAN

by Nikolai Lash

WE PUSH OFF FROM LEES FERRY, POWERING OUR SMALL BOAT UP THE COLORADO RIVER FIFTEEN MILES TO GLEN CANYON DAM. THE SIRENS ARE BECKONING ME TO JOIN THEM UNDER THE GARGANTUAN CEMENT WALL, BUT STEPHEN KING PLOT LINES STIR MY DEFENSES AGAINST THAT SEDUCTION. I AM WILLING TO GET CLOSE, BUT NOT TOO CLOSE.

One cannot help thinking that a mere engineering marvel is keeping a lot of water (5,044,267,123,252 gallons on April 4, 2012) from tidal waving our little floater. It is frightening approaching this latter-day Leviathan. But it must be approached, and tamed. Glen Canyon Dam has been hard on Grand Canyon—its cultural sites, native fish and plants, and beaches.

Taming the Leviathan that is Glen Canyon Dam means changing the way it operates. For the past fifteen years, operations have centered upon fluctuating flows that have eroded beaches and destabilized native fish habitat. Experiments with other approaches have been conducted infrequently. But now the Department of Interior (Interior) has initiated the Long-Term

The continual loss of sediment from Grand Canyon has also resulted in archaeological sites being exposed to erosion and impacts from visitors.

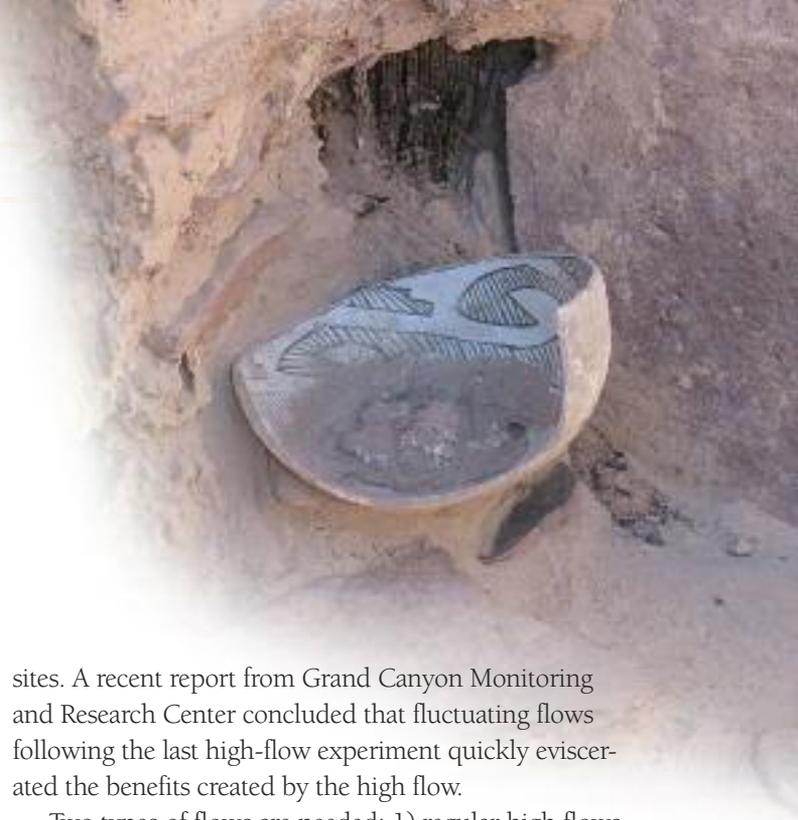
Experimental and Management Plan Environmental Impact Statement (LTEMP EIS), a process that is reexamining Glen Canyon Dam management. This reexamination presents a real opportunity for the public to join the conversation about what should happen at the dam and in Grand Canyon.

Glen Canyon Dam blocked the Colorado River in 1963, initiating a cascade of ecosystem problems. The dam traps about 90 percent of the annual sediment supply for Grand Canyon—the other 10 percent coming from tributaries within the canyon. The loss of sediment supply and the greatly increased rate of erosion from flows designed to maximize hydropower have set in motion the continual loss of sediment from Grand Canyon.

The sediment loss has resulted in fewer and smaller beaches. It has also eliminated significant critical habitat for native fish. Sediment deposits create complex shorelines and underwater features that are used by native fish for spawning and rearing. Four of the eight species of native fish that once plied the waters of Grand Canyon have already been lost. A fifth species, the endangered humpback chub, is vulnerable to being lost from Grand Canyon because virtually all spawning and rearing habitat has disappeared from the main stem.

The continual loss of sediment from Grand Canyon has also resulted in archaeological sites being exposed to erosion and impacts from visitors. Historically, these sites were protected with a regularly renewed layer of sediment derived from the beaches and transported by the wind. Without the influx of new sediment, we constantly lose these irreplaceable treasures of our cultural heritage.

The way in which water is released from Glen Canyon Dam has profound effects on the river corridor, the species living there, and the abundant cultural sites. Simply stated, water can be released as either steady flows or fluctuating flows. Neither flow regime impacts water supplies or water deliveries by the Colorado River. However, over the last fifteen years, science has shown that fluctuating flows damage all the key resources in Grand Canyon—the beaches, the backwater habitats for native fish spawning and rearing, the native shoreline plants and animals, and cultural and archaeological



sites. A recent report from Grand Canyon Monitoring and Research Center concluded that fluctuating flows following the last high-flow experiment quickly eviscerated the benefits created by the high flow.

Two types of flows are needed: 1) regular high flows under sediment-enriched conditions to deposit sediment from tributaries and to scour sediment from the bottom of the river to rebuild beaches and near-shore habitat for native fish and; 2) seasonally-adjusted steady flows, based on the natural rhythms of the pre-dam river, which would preserve beaches, protect native fish habitat, and stabilize centuries-old cultural sites.

TEN PRELIMINARY ALTERNATIVES IN THE LTEMP EIS

Ten preliminary alternative concepts have been developed by the LTEMP EIS team. These draft concepts are intended to cover a broad range of ideas that focus on various resources and could be analyzed in the process. Public comments will also be analyzed and a Draft Environmental Impact Statement released for public review by the end of the year.

It is critical that the LTEMP EIS alternatives consist of new dam operating criteria in concert with other management actions designed to meet the requirements of the Grand Canyon Protection Act. They must also be consistent with other laws, including those regarding water delivery, endangered species, cultural resources, and water quality. The alternative selected as best meeting these criteria should then be tested for the appropriate number of years to achieve the desired results.

Several of the alternative concepts appear capable of greatly benefiting Grand Canyon resources. One strong alternative is the “Naturally Patterned Flow
continued on page 23



GRAND CANYON: Place of Emergence for Havasupai People by Rex Tilousi

Greetings from the Havasupai. Havasupai means “People of the Bluegreen Waters” and we believe that we lived within Mother Earth. The place of emergence where we came to the surface of our Mother Earth is within the Grand Canyon area. We migrated up to the rims of our Canyon home where we lived in peace and harmony with plants and wildlife, the waters, the air, the sun, and the moon. These we regard as our relatives. We lived within the Canyon in the summer and migrated up to the plateau areas in winter. This is how we lived within the aboriginal lands we once roamed, where we once prayed, showing our respect for the mountains and other sites that we regard as very sacred.

There we lived until the coming of the white man. When he came, he divided things. He put fences up, he put borders up, saying; “this is my land, you are not to trespass!” We lived there until the Park Service and the Forest Service came into our lands. When the Park Service took over the Grand Canyon, they pushed the Havasupai people aside and we now live in a side canyon, a place we believe we are a part of.

The two pillars you see as you enter our canyon are our guardians. They watch over the people, the waters, the land, the plants, and the wildlife. This is where we live. We thought the Park Service and the Forest Service were there to protect the areas. And now we come to find that these are the people that are permitting others to come and destroy the lands, the trees, and the waters.

When we were first approached by a mining company that was testing up on the rim of our Canyon home, they said they had discovered what are called “breccia pipes.” The breccia pipes contain uranium ore that had filtered through the waters and the rocks over the years. We were told in 1984 that this testing was taking place and when we came up to the plateau areas to see what happened, we learned the mining company had already set up the equipment to drill the mine shaft into the Mother Earth. The mountain they wanted to mine, the Red Butte, is regarded as a very sacred butte by Havasupai tribal members. It’s where our medicine people, our religious people prayed for strength, for help to carry the people

LEFT: Havasu Falls.
RIGHT: Rex Tilousi drums at
protest Round Dance at GCNP.
AMANDA VOISARD

*Now we find that on both
sides of our Canyon home,
the North and the South
rims, have been inundated
with thousands of uranium
mining claims.*



forward into the future. Now we find that on both sides of our Canyon home, the North and the South rims, have been inundated with thousands of uranium mining claims.

In 1975, when the Grand Canyon Enlargement Act was passed, we were told that we can come up to the rims and gather where my people had gathered and lived in the past. Now when we come up to our sacred area we find fences. Signs are put up, reading “No trespassing!” When we hear and see this, we are hurt. For we, the Havasupai people, are the guardians of the Grand Canyon. When the mining company heard about our protest, they approached us and offered us money. We told them: “No, we don’t want your money. Money is not worth the future, the destruction, the contamination of our home, the waters, the air, the earth, plants, and wildlife. When these things are contaminated, money will never cover the destruction which is going to happen if we let these mining companies desecrate the areas we regard as very sacred.”

We realized we needed help and support since only 500 of our people lived within the Canyon. If we were the only ones fighting against a very powerful nation, the USA, we would never be heard. Therefore, we asked for support from outsiders as we sought relief in the court system. We based our argument on the Religious Freedom Act, but the courts did not see it our way and, in the end, the mining company was given permission to go ahead and sink the shaft into the abdomen of our Mother Earth.

I find it hard to bring people together, even environmental groups that are concerned for plants, animals, and for the waters, because they don’t necessarily look at things as we, the indigenous people do. We see ourselves as a part of the environment and as the children of our Mother Earth. I tell the groups that I speak to, “if the fishes can come together, if the four-leggeds can come together, if our feathered relatives come together, why couldn’t the two-legged people join and work together?” I feel it’s time that all people adopt a different perspective as they look at the surrounding environment, and see the earth, the air, the waters, and the universe the way we, the indigenous people do, and understand that we must protect these things.

I’m also concerned about the future of our grandchildren to walk in beauty the way the Great Spirit meant for us to walk. Will they be able to drink clean water, breathe clean air, swim in clean waters, the turquoise waters of Havasu Creek? If we let uranium mining occur, the water we rely on will be contaminated. If we allow this one destructive mine, then thousands more will follow. We must not let our sacred butte be disturbed this way. We must work together, indigenous people and others, to deliver the message. I ask for your support to protect our Mother Earth and her children; the plants, the wildlife, the air, and the waters. ☸

Rex Tilousi is a Havasupai Tribe elder and activist against the Canyon Uranium Mine. Excerpted and edited from a speech before The World Uranium Hearing in Salzburg, Germany, 1992.

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VOLUNTEERING BRINGS GRAND CANYON UP CLOSE AND PERSONAL

by Kate Watters

“Experience is the mother of science,”

was the quote I pulled from my fortune cookie. I was with a group of volunteers in the bottom of the Grand Canyon at the Roaring Springs bunkhouse. We were traversing the Bright Angel watershed to document the source springs for some of the Canyon’s most important waters. These volunteers worked alongside hydrologists and botanists who are experts in understanding precious, complex natural areas near water. This fortune seemed to be the appropriate mantra for our mission.

The journey to springs’ sources is neither straightforward nor easy. Each night we pore over topographical maps plotting our route. The long, grueling days start early; trudging and thrashing up side canyons, bloodying our legs and arms and blistering our feet in the process, only to arrive at a specific point on a map that we then systematically describe. But it is difficult to convey the actual beauty and diversity of these complex places with only a form, hand drawn map, and a series of photos. The flow measurements and the plants we document are only the beginning of the story.

Springs and tributaries are precious sources of water and harbors for biodiversity in an arid landscape. They provide the base flow for the Colorado River and drinking water to wildlife and visitors. Climate change and development present potential impacts to water sources and plants that depend on them, but biologists do not know to what extent. Grand Canyon National Park (GCNP) has one hydrologist for 1.2 million acres of rugged country. The Grand Canyon has the most diverse flora of any national park in the U.S., but there is no official park botanist. This is all too often the story—declining federal budgets force natural resource managers to do the same amount of work or more with less staff.

The Trust’s volunteer program creates hands-on learning opportunities for the public to contribute to



revered places like the Grand Canyon. We initiated the Spring Steward and Budding Botanist partnerships to train long-term volunteers willing to commit to ongoing survey and monitoring efforts across the Colorado Plateau. Spring Stewards collect baseline information on the location and condition of springs and Budding Botanists collect, document, process, and mount plant specimens for regional flora projects.

Since its inception, twenty-five volunteers inventoried over sixty springs and collected plants in Kanab Creek wilderness, on the South Rim along the Tonto Plateau, throughout Bright Angel Creek watershed and on the North Rim. We even helped discover a population of a new species of blazing star near Roaring Springs! This is the kind of up-close-and-personal relationship that volunteerism cultivates with even a landscape as immense and unknowable as the Grand Canyon.

Trust volunteers have also been involved with bison research on the North Rim. Historically contained to the House Rock Valley, in 2000 the herd began venturing onto the Kaibab Plateau where greener grass awaited. The introduced herd, estimated at 300 and growing, now frequents GCNP and there is concern that they may be impacting seeps, springs, and riparian areas. Trust volunteers helped construct bison enclosures as part of a research effort by a Northern Arizona University graduate student to determine if bison are altering the natural vegetation and hydrology of these water sources on the North Rim. Budding Botanists helped researchers identify plants in vegetation transects and the Trust initiated a cross-jurisdictional baseline assessment of springs, ponds and tanks across the

LEFT: A new species of blazing star discovered near Roaring Springs.
BELOW: Park Service hydrologists explain spring survey protocols.

Kaibab Plateau for bison impacts and surveyed over fifty sites with volunteers. This information will help the multiple agencies involved to determine future options for managing the bison herd of the Grand Canyon region.

Dan Shein, a retired resource manager for Arizona State Parks, has volunteered for the entire spectrum of both Park and Trust projects. He offers invaluable lessons learned from volunteer experience on projects all over the Southwest and through his service on public lands advisory groups. Gisela Kluwin, a retired physical therapist, moved to Flagstaff from California and began volunteering on tamarisk removal projects. She

took Budding Botanist training and has since provided botanical expertise on countless projects for Grand Canyon NP and other agencies and is now initiating her own floristic research in Diamond Creek.

What inspires these individuals to venture deep into the Grand Canyon and volunteer a week of their lives laboring from dawn to dusk in the Canyon heat? For these volunteers and many others, this work is a continuing love affair with the Grand Canyon that fulfills their desire for more intimate knowledge of these places. While searching for springs or rare plants this practice of deep observation and participation displays an abiding passion for knowing a place better. 🌵



KANE AND TWO MILE RANCHES: The Connection to Conserving Grand Canyon

by Matt Williamson

As I sit to write my first *Advocate* article as the new Kane and Two Mile Ranch program manager, I question my ability to capture the program's importance and my excitement to have the opportunity to lead it. Often we focus so closely on the strategies critical to our success we forget why success is critical. Devoting much of an issue to the Grand Canyon, one of the most magical and inspirational places in the world, provides an opportunity to "zoom out" and regain some perspective on why the Kane and Two Mile Ranch program is important. Perspective that comes only when one considers the entirety of the 850,000 acres along the North Rim of the Grand Canyon that are the Kane and Two Mile ranches.

Of what avail are forty freedoms without a blank spot on the map? – Aldo Leopold

Nestled among such iconic places as the Grand Canyon, Grand Staircase-Escalante National Monument, and Zion National Park; the ranches may be little more than a pass-through along the road to destinations beyond. They are, however, much more than simply a "blank spot on a map." Witness the delicate dance of a sunset as it plays back and forth on the ochres, crimsons, and bronzes of the Vermilion Cliffs of the

Paria Plateau. Watch as the light breaks through the clouds to spotlight the walls of Marble Canyon, each moment illuminating a different corner of the stone wake carved by the Colorado River. Ascend to the top of the Kaibab Plateau and wander among the stately pillars of old-growth ponderosa pine, one of the last strongholds of its kind. Pause at a spring emerging from a canyon wall and contemplate the water's journey from this secret oasis into the grandest of canyons. Continue onto the west side of the Kaibab Plateau and the Kanab Creek Wilderness and catch a rare glimpse



of a mountain lion or the mule deer herd that inspired much of Aldo Leopold's land ethic. Experience these things and you will be little surprised that the cultural landscape of the ranches, marked by tools and structures left by the First Peoples and many who came after, is as diverse as the land itself.

An ecosystem is a tapestry of species and relationships. Chop away a section, isolate that section and there arises the problem of unraveling. – David Quammen

Beautiful on their own, the ranches also provide the context and the connection for conserving the Grand Canyon. Our ability to appreciate the splendor of the Canyon lies in our ability to experience its expansiveness; uninterrupted by mines, condominiums, and the incessant buzz of air tours or other gimmicks.





OPPOSITE PAGE LEFT: Livestock on Kaibab Plateau. TOM BEAN
OPPOSITE PAGE RIGHT: Meadow on Kane Ranch.
LEFT: Kane Ranch HQ situated in House Rock Valley. The ranch has approximately 100 miles of contiguous border with GCNP. MICHAEL COLLIER
BELOW: North Rim park exit with Kane Ranch meadow in background. RICK MOORE



But the Canyon's connection to the surrounding landscape transcends these impacts. Wildlife populations cannot sustain themselves solely by remaining in the Park and the ranches provide a vital linkage to ensuring those species' persistence on the land. The fate of the forests in the Canyon is similarly linked to the fate of the ranches as wildfire rarely stops at administrative boundaries. As the effects of climate change become more evident, the ranches become more critical; ensuring refuge to species seeking to escape the warmer, drier Canyon. If we are to conserve those things we care about most within the Park, we must recognize the importance of the surrounding landscape of which the Kane and Two Mile are an integral part.

It is not enough to understand the natural world; the point is to defend and preserve it. – Edward Abbey

True enough. Land-use changes, non-native species, and the looming specter of a warmer, drier climate require delving deeper to understand the interrelationships that sustain the southern Colorado Plateau.

Strategic thinking and preservation alone cannot ensure the future existence of these places. Conservation takes action. By reducing the impacts of livestock across the ranches, we are beginning a process that we believe will make this landscape more resilient to whatever challenges the future may hold. Through our commitment to conservation science and help from a vibrant volunteer community we have found a way to not only restore various portions of the ranches, but also to develop enduring personal connections to this landscape while growing the ranks of those willing to defend it.

The ranches are more than the home of California Condors, the backdrop for a sunset, or the Grand Canyon's neighbor. They are a thread in the fraying twine that links the Canyon to the landscape that must sustain it. They can be, if we are successful, the safety net that ensures the splendor of the Canyon persists in the face of future challenges. This is where inspiration and mysticism meet conservation and science. This is why the Kane and Two Mile ranches matter. This is why what we do matters. 🌲

UNIQUE THREATS TO SAQUATUVKA

by Ben Nuvamsa

Saquatuvka, is what we, Hopi Senom, call the Grand Canyon.

The Grand Canyon, with its magnificence and grandeur, is valued by many who visit each year because of its visual beauty. But *Saquatuvka* has a very deep and religious meaning to our people because of its cultural and historic significance. Our ancestors, the *Hisat Senom* (people of long ago) inhabited and occupied *Saquatuvka* and the Colorado Plateau long before any other ethnic group. Anthropologists referred to us as the *Anasazi*, *Moqui*, or *Sinaqua*. Our historical presence is evidenced by archaeological sites and petroglyphs that are scattered throughout the massive canyon. One of the most historic sites in the canyon is our sacred and holy place we call *Sipapuni* ... the place of our emergence. There are other sites that also play an important part of our culture and our *Navoti* (our oral history and prophecy).

The ecology of the Grand Canyon depends on the waters that flow through it from the Colorado, the Green, and the Little Colorado rivers, and all the system's tributaries. A natural flow of the river is vital for the survival of all living things within its ecological system, but this natural flow has been significantly altered to meet the water demands of surrounding states, cities, and industry, upsetting Mother Nature's balance.

Now, there is yet another potential threat to *Saquatuvka*; Senate Bill 2109, the *Navajo and Hopi Little Colorado River Water Rights Settlement Act of 2012*, introduced by Arizona Senator Jon Kyl (R) on February 14, 2012. It is intended to forever settle Hopi and Navajo water rights to the Little Colorado River (LCR); but in actuality, SB 2109 extinguishes the federal protected water rights of Hopi and Navajo. It ensures that non-Indian corporate interests will continue to mine our coal, pump our precious Navajo Aquifer and divert the Colorado River to produce cheap electricity and deliver wet water to benefit southern Arizona, southern California, and southern Nevada, under the guise of an Indian water rights settlement. Significantly, the bill requires the use of the Colorado River for Navajo Generating Station (NGS) electricity production.

If SB 2109 becomes law, it will extend the life of the Navajo Generating Station to 2044. And, it will provide for continued mining of Black Mesa coal by the Peabody Western Coal Company as a pre-condition for receiving minimal domestic water pipelines for Hopi and Navajo. It will also allow NGS to receive 34,100 acre-feet per year to the Upper Basin under the Upper Colorado River Basin Compact. This means the NGS will receive a protected federal water right of over 11.1 billion gallons of the Colorado River water each year even though it does not have a legitimate claim under existing federal and state water laws.

Hopi Senom and the *Diné* do not believe these provisions and conditions have a place in this legislation, and it is clear they are designed to give non-Indian interests significant benefits and advantages under the guise of an Indian water rights settlement act.

Under the bill, Hopi receives no surface water from the LCR but instead will receive a nominal amount of ground water through a water delivery system without guaranteed federal funding for the construction of the pipeline or for the operation and maintenance of the system. Hopi will receive surface waters from washes that traverse the Hopi reservation, which are dry most of the year.

So How Does SB 2109 Affect Hopi and Saquatuvka?

Sipapuni is not only the place of our emergence into the fourth world, the world in which we live today; it is the place to which we return when we leave for the spirit world. *Sipapuni* is also a significant part of the river system and any diversion or withdrawal of the waters upstream may impact the mineral springs, or the very breath of life of *Sipapuni*. But Hopi cannot sue the United States or any upstream water user because of the provisions in SB 2109 to hold the parties harmless.

The sacred springs on our homelands and ancestral lands, that play a critical part in our ceremonies, have disappeared or are drying up because of continued over-pumping of the Navajo aquifer for Black Mesa mining operations. Hopi has historically opposed the aquifer pumping for mining operations and was successful in stopping Peabody Coal Company from using it to slurry coal to the now defunct Mohave Generating

The sacred springs on our homelands and ancestral lands, that play a critical part in our ceremonies, have disappeared or are drying up because of continued over-pumping of the Navajo aquifer for Black Mesa mining operations.

Ben Nuvamsa speaks.
KIVA INSTITUTE



Station, but withdrawal from the ancient Ice Age aquifer continues today.

The Kyl bill will require Hopi to drop all claims against Peabody and NGS for any harm from aquifer pumping and coal mining and sign new coal and water contracts, while agreeing that this settlement ends forever any claims to LCR water Hopi may make in the future. Hopi must then rely on Congress to appropriate money for the water projects, which may be difficult given the current budget deficit concerns.

This means Hopi would lose its tribal aboriginal water rights, Spanish law water rights under the 1848

Treaty of Guadalupe Hidalgo, and its federal reserved water rights under the Winters Doctrine. But Water is Life. Water is Sacred. Water is central to our ceremonies and our way of life. We must protect it and preserve it for our future generations. We, *Hopi Senom*, have a sacred covenant with our Caretaker, *Maasaw*, to protect our natural resources, our culture and our future generations. Every Hopi is entrusted with this responsibility. 🌱

Ovi' Pai'lolmani.

Ben Nuvamsa is a former Hopi tribal chairman and President/CEO of the Kiva Institute.

BUSY FOR BEAVERS IN UTAH

by Mary O'Brien

A lot of folks want beavers back in their historic habitat and thriving.

Beaver create ponds, wetlands, meadows, and complexity in streams; and expand streamside woody riparian vegetation. They capture sediment, create a season-long release of water through their leaky dams, reduce flood gouging, and restore near-stream aquifers. Frogs, ducks, muskrat, otters, water voles, and other small mammals, shorebirds, cavity-nesters (in drowned trees) and secondary cavity-nesters (using cavity-nester holes) wait in the wings as beavers create habitat for them. Plus beaver are truly entertaining for humans of every age to watch.

But getting beaver back into the three national forests of southern Utah is about as complex as the ecosystems beaver create. Some folks need to be convinced that beaver aren't just big, lumbering pests. Others, who know beavers are just fine in some places, need to be convinced that great, non-lethal solutions exist when beavers seem to be in conflict with their own structures and plans. Then there's the complication that Utah Division of Wildlife Resources (UDWR) manages reintroductions of beaver, but the Forest Service manages the forest habitat into which beaver would be reintroduced. There's the question of finding out which creeks have sufficient cottonwood,

aspen, or willow to allow a reintroduced beaver family to survive. And then who is going to spend several nights in a row laying out a set of traps to capture an entire beaver family? And where can the beaver be quarantined if they're being moved into a stream that doesn't have whirling disease?

Enter Grand Canyon Trust's Wildlife Associate, Jeremy Christensen. It's his full-time job to be busy **for** beavers so they get to be, well, busy **as** beavers on the three national forests. Prior to coming to the Trust, Jeremy worked in both advocacy and stream restoration: for three years he was with Southern Utah Wilderness Alliance advocating for wilderness and, for three subsequent seasons, with UDWR restoring streams.

Utah's *Beaver Management Plan 2010-2020* approves 120 creeks and waterbodies statewide as reintroduction sites for beaver, if the sites can be assessed and arrangements worked out with the agencies involved. Eighty-seven of these 120 creeks are on the three Colorado Plateau national forests that are the focus of the Trust's Utah Forests Program: the Dixie, Fishlake, and Manti-La Sal NFs.

Jeremy's first and biggest task is to assess beaver habitat on as many as possible of the eighty-seven potential reintroduction sites. Alone and with the help of Trust volunteers, Jeremy assessed twenty-eight such





Beaver recently live trapped by Jeremy Christensen.

JEREMY CHRISTENSEN

streams; nineteen quantitatively and nine more qualitatively. He found that beaver reintroduction would likely succeed in fourteen of them, but beaver are already active in eight, precluding reintroduction. He found another six currently lacking sufficient willow or aspen to support beaver; due to overgrazing by ungulates (elk, cattle), recent fire, or water diversions. The UDWR welcomes Jeremy's reports, as the agency's budget and big game priorities afford them little time to undertake detailed assessments. As well, UDWR has certified Jeremy for livetrapping, the first such non-UDWR employee certification in the state.

Jeremy also assessed beaver habitat in nine other creeks, which illustrates the scope of the Trust's work to not only reintroduce beaver, but also to ensure their retention in suitable habitat from which they have too often been removed. A few examples of this work:

TWO MILE CREEK

Due to extensive water diversions on La Sal Mountain (Manti-La Sal NF) in eastern Utah, little of historic beaver habitat can now be occupied. Two Mile Creek, however, has a set of inactive beaver dams in habitat that could support beaver, and the Trust is working with the Moab-Monticello Ranger District to ensure that beaver would be supported in this site.

SWEETWATER CREEK, BOULDER MOUNTAIN GUEST RANCH

Again, due to water diversions, upper Sweetwater Creek on Boulder Mountain (Dixie NF) is dry much of the year, precluding beaver habitation. However, on the lowest of a set of private inholdings on Sweetwater Creek, at the Boulder Mountain Guest Ranch, beaver

are using cattails for dams and food in a portion of the creek that was long ago deeply incised. The Trust is working with the Guest Ranch landowners to fashion a conservation plan that will insure the continued use by beaver of Sweetwater Creek, which subsequently flows through Grand Staircase-Escalante National Monument, into the Escalante River.

COTTONWOOD WASH

A Wayne County commissioner is requesting beaver reintroduction on his private property, which highlights a need that was overlooked in the *Utah Beaver Management Plan*: the process by which beaver that are problematic in one site can be approved for reintroduction on private land at the landowner's request. The Trust will be working with UDWR to get such a procedure spelled out in a revision of the *Plan*.

NORTH CREEK

Over Memorial Day weekend 2011, several beaver dams on North Creek in the Escalante River watershed (Dixie NF) trapped thousands of cubic feet of sediment that otherwise would have flowed down toward Wide Hollow Reservoir. The beavers' dams had earlier created a pond, drowning pinyon-juniper in what was then a dry wash. In the wake of sediment being trapped across the floodplain, thousands of whiplash willow trees have sprouted. The Trust has established photo points and vegetation transects in this riparian area, and is working with the Escalante Ranger District to ensure that these willows will not be excessively browsed. This will help anchor North Creek, trap future sediment flows, and provide for the extraordinary biodiversity offered by healthy riparian areas.

Please join us on September 20-21 for Utah's first-ever family celebration of beaver, *Leave it to Beavers*, at Escalante Petrified Forest State Park. This event will feature informational booths, beaver plein air art and photo contest winners, demonstrations, games, hikes, and a life-sized beaver lodge built by Escalante Elementary School Science Club students.

Beaver are looking over our shoulders—with approval. 🌿



Mill Creek in the Horse Mountain-Mans Peak Inventoried Roadless Area; Manti-LaSal NF.

© TIM PETERSON

UTAH WILDLANDS PROGRAM TO BUILD LOCAL NETWORK

by Tim Peterson

For the last thirty years, Utah's public land battles have been fought largely in Congress and in the courts, leaving the average citizen out of the debate as politicians, lobbyists and ideologues sermonize in the media. In the current political climate where an anti-federal Utah state legislature feeds the appetite of an anti-wilderness Utah congressional delegation, the old ways of crafting public lands protection legislation are no longer working. Land use packages like the 2009 Washington County bill, where stakeholders wrote legislation together, are no longer possible. They needed the firm guidance of an elected official like Senator Bob Bennett, and no member of the current Utah delegation is willing to provide that guidance, fearing the same blowback that ousted Bennett. In light of this challenging environment, we are seeking new ways to advance our goals, and since the leadership we need on conservation isn't coming from elected officials, we now need to lead from the ground up.

There is no question that the political climate in Utah is a difficult one in which to advance conservation. Since Utah is the reddest state in the nation, victories there mean more, and they are harder won. However, polling, research, and our own contacts tell us that the largely anti-environment oratory coming from rural opinion leaders is out of step with the views of the majority of citizens. We believe that building local networks that can advocate for conservation and counter anti-environment rhetoric while holding public officials accountable is essential to tipping the scales toward public lands protection in southern Utah.

We do know that, though they might not self-identify as "environmentalists," many rural Utahns do support conservation and some kind of public lands protection. Our task is to gather and network our known allies, and through them engage and empower other opinion leaders. By supporting those efforts already in place, and by cultivating new support among youth, local opinion makers, business owners, recreationists, hunters, anglers, and outfitters, we will change the political metrics in southern Utah. We intend to build a lasting movement, not just parachute in and stir the pot. Rather than creating a shallow and temporary interest group and repeating our community's past mistakes by telling locals what to do, we are asking them to identify where we can help fill their needs, creating a deep and lasting movement for change. A serious effort to build a new ground-up movement for conservation necessitates a high-quality, long-lived organizational effort, and the Trust is committed to that end. The effort will originate around the communities of Moab and Bluff in southeast Utah, Kanab, Escalante, and Boulder in south central Utah, and St. George and Springdale in southwest Utah. Our goal is to create a new movement from the fertile middle in order to break the harmful polarization that has forestalled progress on lands issues for so many years in rural Utah.

If you are interested in getting involved, or if you know someone who is, please contact Tim Peterson at tpeterson@grandcanyontrust.org. 🌲

continued from page 9

Regime.” It would provide flows that mimic naturally patterned flows based on historic monthly averages, including regular high flows and seasonally-adjusted steady flows. Sediment augmentation and a temperature control device would also be used to achieve more natural sediment supplies and water temperatures.

Another valuable alternative concept being put forth is the “Structured Adaptive Management with Condition Decision-Tree” alternative. This esoteric-sounding alternative would implement a framework that uses a condition-dependent “decision tree” to maximize benefits to a wide range of resources. It would aim to provide a high degree of flexibility in response to annual conditions rather than a static prescription for all years. Everything would be on the table for this one, including high flows, steady flows, sediment augmentation, and temperature control device.

This is a landmark moment for Grand Canyon. The LTEMP EIS provides a public opportunity for Interior and the responsible agencies to accomplish something big—to meet in full the requirements of the Grand Canyon Protection Act. Interior has done a great job so far assembling public comments and developing preliminary alternative concepts. For more information on the reexamination of Glen Canyon Dam, see Interior’s LTEMP EIS website at: <http://ltempis.anl.gov>. Please consider joining this important effort. Many are needed to tame a Leviathan! 🌲

STAFF NOTES

Matt Williamson, formerly our Arizona Forest Program Associate, has replaced Christine Albano as the Kane & Two Mile Ranches Manager.

Stephanie Smith has joined the Trust as our new GIS Manager.

Dave Erley is now the Utah Forest Program Associate.

Marcus Selig has now taken on the role of Arizona Forests Manager. He was formerly our Arizona Forest Conservation Program Associate.

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The beautiful cover art is the work of Sam Jones, who has painted landscapes of the Southwest for over twenty-five years.

Originally from Salt Lake City, Jones grew up in a household of artists and was turned on to painting at an early age. Now a resident of Flagstaff, he is probably best known for his watercolors of the Grand Canyon where he has worked as a boatman since 1984. For Jones, the portability of watercolors for painting outside on location is indispensable. Whether he is pulling his painting supplies out of an ammo can on a raft trip or out of a backpack on a hike, he loves how easily he can set up with his watercolors and begin to paint. Jones has shown his work at David Erickson Fine Art Gallery and F. Weixler Gallery in Salt Lake City. He had a one man show at Coconino Community College in Flagstaff in 2009. Currently his work is displayed at West of the Moon Gallery (westofthemoongallery.com) in Flagstaff, Arizona.

RAEHEL M RUNNING



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The **Mission** of the Grand Canyon Trust is to protect and restore the Colorado Plateau—its spectacular landscapes, flowing rivers, clean air, diversity of plants and animals, and areas of beauty and solitude.