COLORADO PLATEAU Advocate

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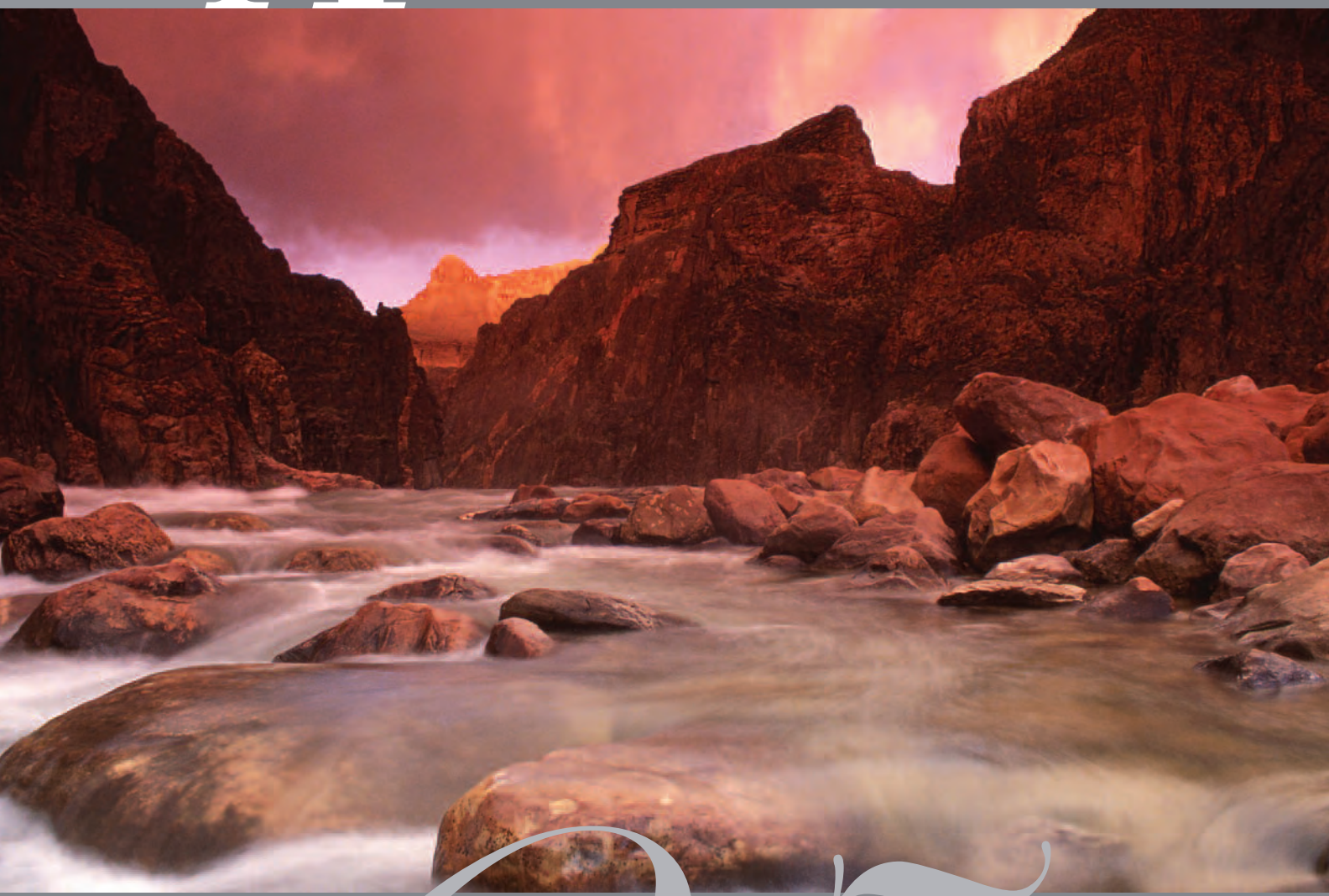

25 Years

GRAND CANYON TRUST

Solutions for Life on the Colorado Plateau

Contents

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

Grand Canyon Trust

The Beginning by Bruce Babbitt

In 1985, when I met with Jim Trees and Harriet Burgess in the lobby of a San Francisco hotel to sign the articles of incorporation for the Trust, I wasn't certain exactly what we intended to accomplish. I had become acquainted with Jim and Harriet on river trips, and I shared their enthusiasm for the Grand Canyon. We talked about persuading river runners and boat companies to levy a fee on river runners for Canyon protection. There was some discussion about the Greater Yellowstone Coalition as a model. I was still a Governor, preoccupied with lots of problems back in Arizona, and I left the meeting in a hurry, without much further thought about our future.

Enter Ed Norton; our first President, and a vigorous leader with two big ideas. First, the Grand Canyon and the Colorado River must be viewed as an ecosystem. To protect the Canyon meant to protect the river and its entire watershed stretching throughout the Colorado Plateau.

Second, we could prove our mettle by tackling air pollution; specifically the haze spreading over Canyon country from the stacks of the Navajo Generating Station at Page. When the Salt River Project capitulated to Ed's onslaught, and agreed to a schedule for installing scrubbers, I knew that we were on the way to becoming a permanent force on the Plateau.

Then I drifted away and on to other things. But the Canyon and the River and the Trust kept calling me back. In 1998 I returned briefly to initiate the releases from Glen Canyon to rebuild riparian habitat downstream. And then in 1999, several years after the success of the Grand Staircase-Escalante National Monument proclamation, we returned to consider more protected areas on the Colorado Plateau.

Our next project was on the Shivwits Plateau, which adjoins Grand Canyon National Park on the north and west. We outlined a 500,000 acre monument proposal and scheduled public meetings. Imagine my surprise and chagrin when advocates, led by the Trust, came forward in the press and at hearings to complain that my proposal was too timid. The monument should protect at least a million acres.

So I went back to the maps, looked at the actual contours of the watershed draining into the Canyon

Mount Hayden at Point Imperial, Grand Canyon National Park. Tom Bean

tributaries and acknowledged that we could do more. We came back with a revised proposal for a million acres, which ultimately became the Grand Canyon-Parashant National Monument. The Trust had come a long way from that initial hotel meeting.

Looking back on the last twenty-five years, I share your pride in our accomplishments. A great mosaic of open space protection, including national forests, national parks, wilderness areas, and monuments is taking shape. Environmental considerations are beginning to factor in the way the River is being managed. Air quality has improved. Native Americans are now engaged. These are impressive achievements, more than enough to offset memories of President Clinton and myself hanging in effigy from lamp posts along the streets of Escalante.

Of course there is much more to do. As I surf through the Trust website on a spring evening in Washington, I can discern clear visions of future directions. The Kane Ranch is a good example. It has become a crucible for working out new patterns of management that align grazing management with the goals of wildlife management and forest and range restoration, all in the context of a changing climate and guided by excellent scientific research. I believe the future of rural communities throughout the West will be positively influenced by the work of the Trust at Kane Ranch.

We need to think long and hard about the balance between urban development and open space. The Plateau is blessed with an abundance of great open landscapes, and our communities and farms are nicely spaced and proportioned within this matrix of open space. Urban form and sustainability go together, and it should be possible to innovate ways of living on the land that will inspire and set an example for the rest of the nation and the world.

In the end, the management of water may well be the measure of our success. The waters of the Colorado River are fully appropriated, indeed over appropriated. Large water projects are artifacts of the past. We must now come to grips with the connections between surface water and ground water, and the need to preserve diversity in hot spots dependent upon desert water. The next twenty-five years will be even more challenging than the past quarter century.

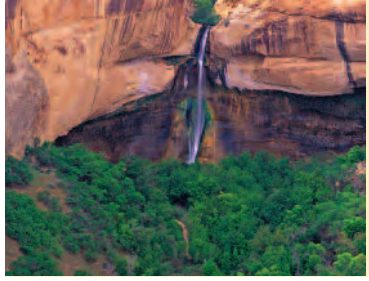
Protecting and Restoring the Canyon Country

The Trust's Distinctive and Productive Conservation Work

by Charles Wilkinson

Conceived in the idealism of late-night talk and dreams around a campfire deep in the Grand Canyon, the Grand Canyon Trust came into official being a year later, in 1985. Preserving the quiet in the Grand Canyon and the long, languid vistas from the rims were early objectives but the mission soon expanded. Board member Stewart Udall urged that this new conservation group focus on the whole Colorado Plateau, and that vision took hold.

The Grand Canyon Trust quickly became a powerhouse and has remained so for a quarter of a century. Able to attract talented staff and board members, the Trust has crafted a nimble, multi-faceted brand of conservation. When needed, we will litigate and issue forceful pronouncements. More often, though, other means have been the best paths to good results for the land. The Trust is strong on science-based conservation. It works well with the Plateau's diverse communities and has the credibility to forge consensus results through collaboration. The organization cooperates closely with other groups in the conservation community. It employs market mechanisms to purchase land and interests in land. The Trust prides itself on good, ongoing relationships with congressional delegations, federal agencies, tribal governments, and states. In many cases, the Grand Canyon Trust has put together policy proposals and collaborative agreements ready for implementation by those governments. The hallmark, then, of these twenty-five years—and this will remain so for the next twenty-five—is a uniquely



Facing page: Bryce Canyon.
Tom Till
Left: Calf Creek Falls, Utah.
Tom Till

versatile and creative program to tailor solutions that best accomplish good conservation results for this dry, rocky, scratchy, but miraculous and sacred, landscape.

The past successes of the Grand Canyon Trust, and those in the works, are far too numerous to catalogue here, but let me give the outlines of the progress to date and suggest what may lie ahead.

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The Trust, just a handful of staffers then, took giant strides in the very early years. They worked tirelessly with Senator John McCain to pass the National Parks Overflights Protection Act of 1987 that requires the "substantial restoration of natural quiet" in the Grand Canyon; the current regulations, which prohibit flights below the rim and establish flight-free zones and curfews at dawn and sunset, are expected to be tightened further with the help of today's Trust employees. A 1988 lawsuit forced a review of the federal marketing criteria for power generated by Glen Canyon Dam, which holds back the Colorado River just above the park. This scrutiny led to the landmark Grand Canyon Protection Act in 1992.

By the 1980s, as a result of the post-World War II Big Buildup of the Colorado Plateau, ten coal-fired power plants created heavy air pollution at the Grand Canyon on at least 100 days per year. On some days, a sickening, smudgy pall hung over the canyon, making it impossible to see from one rim to the other. This led to an historic effort of litigation and negotiation that spans nearly the whole life of the Trust and continues today.

The Navajo Generating Station, just above Grand Canyon used to be the largest contributor to the smog in the canyon and at the insistence of several environmental organizations, EPA proposed a 70 percent reduction of sulfur dioxide emissions. But the Trust, which was leading the negotiations, knew that more could be done. A year later, after intense negotiations with EPA and the plant owners, a settlement reduced sulfur dioxide emissions by more than 90 percent—a drop from 70,000 tons per year to 5,000.

Over the next two decades, Trust suits and negotiations, joined by the Sierra Club and the National Parks Conservation Association, achieved major emission reductions at the Mohave Generating Station, the Springerville Generating Station, and the San Juan Generating Station. Rather than comply with the court-ordered cleanup, Southern California Edison chose to shut down Mohave in 2005 and the plant will soon be demolished. The Trust will continue its campaign to clean up power plants but the air quality program is now broader. As just one example, we helped convince the Arizona Corporation Commission to require that utilities generate a fixed and increasing percentage of their power from renewable sources.

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While the Colorado Plateau is home to one of the largest concentrations of national parks and monuments in the world, and a significant part of the Trust's work has involved the parks, the majority of land on the Colorado Plateau is "multiple-use" land administered by the Bureau of Land Management and the Forest Service. Uranium mining and milling has had a boom-and-bust trajectory since the 1950s. Near Moab and just above the Colorado River, 16 million tons of uranium mine waste from the Atlas mill were stored in a dump within the flood plain of the river. The health impacts were manifest and a coalition led by Trust staff members achieved federal funding to transport the waste, over a 20-year period, to a safe disposal cell 30 miles away. Today, however, there is a new demand for uranium and miners are trying to establish mining claims on the Plateau. One rush took place in the Kaibab National Forest near the South Rim of the Grand Canyon. At the behest of the Trust and other groups, Interior Secretary Ken Salazar has put all mining claims on temporary hold and hopefully a permanent withdrawal will follow.

The Trust has also made timber management of the Plateau's national forests a priority, and the circumstances called for a different kind of approach. As is common in so many forests across the West, well-intentioned fire suppression over the course of generations has led to a fuel buildup—just sparks away from killing fires—in the vast ponderosa pine forests across the Mogollon Rim region. The Trust has taken a leadership role in collaborating with local communities and businesses to shape Forest Service policy. The result has been a new approach, much

Grand Canyon Trust headquarters, Flagstaff.
Rick Moore

noticed in other western regions, that will apply principles of restoration forestry and give incentives to local timber companies to conduct logging of small diameter trees. The result is a program that will greatly reduce the risk of catastrophic loss, gradually bring back the health of these compelling forests, and boost local employment.

More acres on the Colorado Plateau are dedicated to grazing of domestic stock than to any other commercial use and this, too, is a policy area that requires yet another kind of strategy. Most of the Plateau's terrain is fragile, and over-grazing has severely damaged the public's soils, vegetation, and watercourses. Some progressive land managers and ranchers holding BLM, Forest Service, and Park Service grazing permits are well aware of the problem and have revised their grazing practices. In a now classic movement well known across the West some have gone further. Starting in 1996, the Trust purchased grazing permits from willing-seller ranchers, and restoration-minded land managers agreed to amend their land use plans to remove the pastures from grazing. In all, these voluntary, market-based transactions have removed cattle from hundreds of thousands of acres and hundreds of stream miles in the glory country of Arches, Canyonlands, Grand Staircase-Escalante, Capitol Reef, and other areas of naturally high biodiversity.

The single grandest transaction of all was made on the remote North Rim against the backdrop of the Vermilion Cliffs. The Trust purchased the grazing rights to the Kane and Two-Mile ranches, 850,000 acres in all, including the Vermilion Cliffs National Monument and part of the Kaibab National Forest. But there was a wrinkle: the Trust owned the grazing permits and federal law requires that permit owners must actually keep livestock on the land.

So the Trust set up its own ranching corporation to run cattle on a very conservative basis so that it could continue to graze the sweeping landscape with the lightest touch possible. Then, to understand current land health and how best to bring back the land, the Trust set up a rigorous scientific program of restoration ecology. Using the Trust's staff and scientists from academia, and benefitting from the time and energy of field technicians and legions of volunteers (250 or more every year), the research program established hundreds of data points to track land health. The rich body of on-the-ground information—far more extensive than that of the federal agencies—is then analyzed and provided upon request to the BLM, Forest Service, and Park Service for use in their planning and management regimes. It is a model private-public partnership.

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Over one-quarter of the Colorado Plateau is Indian country. The tribes are separate sovereigns who govern their reservations and are understandably cautious about initiatives from the outside. Relationships between tribes and conservation groups have sometimes been collaborative but more often distant or openly contentious.

The Trust has made it a priority to develop good working partnerships in Indian country. The Board of Trustees has included many tribal officials and other Native leaders, and the organization has established an ambitious Native American Program. In the past, outside development interests have typically sought to carry out their projects, usually involving resource extraction, without involving the tribes. The Trust's program is devoted to working with the tribes and local reservation communities on priorities established by them.

Two broad areas of cooperation have emerged—community-based development and renewable energy projects that would develop "green jobs." Projects

The Trust is strong on science-based conservation. It works well with the Plateau's diverse communities and has the credibility to forge consensus results through collaboration.

where the Trust has given advice and technical support to local communities include Navajo traditional food and farming practices at the North Leupp Family Farm; a marketplace for small Hopi businesses at the village of Sipaulovi on Second Mesa; and a retail development for locally-owned businesses at the Shonto Chapter of the Navajo Reservation.

As for renewable energy, there is a great deal of interest among the Plateau tribes, who have many opportunities for wind and solar development. One need is simply good advice and the Trust has sponsored conferences and many meetings with interested communities on the business, environmental, and legal aspects of sustainable power development. Specific projects are moving ahead. The Trust has provided extensive business advice to the Shonto Chapter on a rural electrification project for Shonto and perhaps western Navajo as well; now the Trust is assisting in the final stages of starting up Shonto Renewable Energy Company, which will provide renewable energy systems for chapter residents and possibly develop utility-scale wind power. Similar work has been done for Navajo wind projects at the Grey Mountain and Big Boquillas Ranches.

When the lawsuit brought by the Trust and its conservation partners led to the shut-down of Mohave Generating Station and the Black Mesa Mine, the Hopi and Navajo tribes had to make major adjustments. While Indian people hated the pollution, the operations made significant royalty and tax payments to the two tribes. Trust staff and board members met with tribal officials and were willing to make some accommodations to respond to the tribes' needs, but could not abandon the court order requiring a clean-up. Finally, in 2005, rather than comply with the court order, the Mohave plant ceased operations.

Because of the environmental benefits from closing down the dirty plant, Southern California Edison received pollution credits—a very substantial revenue windfall resulting from the sale of the credits. The Trust put forth an innovative solution that would let the tribes receive the revenues from the credits and apply the proceeds to renewable energy projects. The Trust and the Sierra Club, collaborating with a Native grassroots organization known as the Just Transition Coalition, have the proposal pending before the California Public Utility Commission.

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What of the future? Part of the answer is more of the same. Several of our projects, although they have already born fruit, will continue for many years. The Grand Canyon Trust has already proved its staying power and is in it for the long haul.

And there is another, more recent, campaign. Climate change has burst on to the scene and will be a central part of the Trust's work for the foreseeable future. Sadly, the Colorado Plateau is and will be hit hard by the phenomenon: projected temperature increases are well above the national and global averages, and the natural and human landscapes will pay dearly. The Trust has a great deal to offer, from its proven litigation capability, to its research on conservation and renewable resources, to its policy expertise and influence, to the data being gathered at the Kane and Two-Mile Ranches that is documenting the march of this human-caused scourge.

The costs of cleaning up coal-fired power plants such as the Mohave Generating Station were escalating even before the United States Supreme Court declared carbon dioxide a pollutant under the Clean Air Act, which makes the economic challenges of coal-fired energy even greater. Now there is talk that some utilities may be considering a phase-out of coal plants, choosing instead to invest in renewable energy. Could part of their calculus be the knowledge that the Grand Canyon Trust will promptly and effectively enforce the law?

On climate change as elsewhere, this organization will be fair and reasonable, and we will search for solutions with anyone willing to work in good faith, but we will not relent. We have been the trustee for the Colorado Plateau for a full quarter century and we are just beginning.

A Distinguished Professor at the University of Colorado School of Law, Charles has been a Trustee since 1998 and served as board chair for four years. His many books include *Fire on the Plateau: Conflict and Endurance in the American Southwest.*

A Tribute to the Grand Canyon Trust

by Richard Hayslip, Associate General Manager, Salt River Project

I once told someone that of the groups that occasionally bring suit against the organization I work for, the Grand Canyon Trust is my favorite.

I am honored to be provided a forum in the *Advocate* to explain the enigma of respect and admiration that endures despite differences that sometimes result in legal action and to share some thoughts about the Trust.

The Colorado Plateau has been an important part of the geography of my forty-plus year career in the utility industry. My early years, while employed by Southern California Edison, included a stint at the Mohave Generating Station in southern Nevada and involvement in the proposed, but never built, Kaiparowits Project in Kane County, Utah. Since coming to Salt River Project, I have been deeply involved in permitting and compliance activity at the Navajo Generating Station near Page, Arizona. As entries on a resumé, these experiences would hardly reveal common ground with the Trust or any environmental organization for that matter. This is particularly so when accompanied by the affirmation that I have no regrets about any of this work. Nonetheless, those experiences left me with a deep appreciation for this region and for the people and groups who work so hard to protect it.

One of my earliest exposures to the breadth of commitment to the region occurred along Fort Valley Road in Flagstaff not far from today's home of the Grand Canyon Trust. In the very early 1970s, Dr. Edward Danson, then Director of the Museum of Northern Arizona, organized and hosted meetings of a group called the Colorado Plateau Environmental Advisory Council (CPEAC). Although short-lived, CPEAC served to bring into focus the range and diversity of interests in this region. Expectations that such a council could fully resolve such divergent interests were perhaps naïve, but I nonetheless regret that this forum for dialogue was prematurely abandoned.

If the Grand Canyon Trust had existed in the early 1970s, I believe it would have been a constructive contributor to the regional dialogue then, just as it is today. The hardest part of dialogue is that it constitutes an exchange—a give and take—of ideas and opinions. While not always agreeing with me, or the industry I represent, I have always found the Trust willing to listen. It is through the exchange of ideas that great solutions can often be found to the most vexing of challenges.

Twenty years ago SRP was engaged in a very heated debate with environmental groups over visibility impairment in the Grand Canyon. At some point in the process, we had come to the realization that additional emission controls were going to be required at our Navajo Generating Station. We also realized that the cost of those controls would be significantly influenced by the specific form of the compliance obligation we would need to meet. It was a complicated mix of control efficiencies, averaging times and spare scrubber modules.

This was uncharted ground for the Environmental Protection Agency and their role quickly became one of facilitator to negotiations among the parties. The environmental community and the Park Service were advocating 90% removal and we were confident we

SRP wind farm located 30 miles southwest of Holbrook, AZ.

could achieve no more than 70%, given the relatively short averaging times that were being discussed. To commit to 90% would have necessitated costly spare modules in the event there was a failure in an operating module.

As the oral history of the controversy goes, Mr. Ed Norton, then President of the Trust, was asked "if we could give you 90% for the same cost as 70% would you take it?" His positive response provided a way forward that led to a settlement. The key to the resolution was a willingness to extend the averaging time in the standard to "a rolling 365 days." The need for the spare modules was eliminated and the costs were dramatically reduced. We were also given an implementation schedule that allowed for the orderly design and construction of the systems. The good news is that the systems have operated reliably and have achieved removal efficiencies even better that expected.

It may not have been everyone's ideal solution, but it was a landmark settlement. President George H. W. Bush came to the Grand Canyon to pay tribute to the deal and to the people who made it happen. We remain convinced that while others participated, the Grand Canyon Trust was the catalyst that made things work. Without compromising for a minute the ideals they stand for, the Trust was willing to listen and to entertain a solution that worked for everyone. For that I am grateful and for taking on the mission they have, we all should be grateful to the Grand Canyon Trust.

Arizona Forest Restoration Retrospective 1996–2010

by Ethan Aumack

Within the Fall 1996 edition of the *Colorado Plateau Advocate*, an article titled "Forest Health: The Patient is Critical" argued the need for forest restoration across the southern Colorado Plateau. Highlighting the Horseshoe and Hochderffer fires of the previous summer, which totaled 25,000 acres in size, the article's authors described the need for ambitious thinning and burning efforts to "reverse the trend of degradation of forest health." The authors wisely concluded that "…the road ahead will not be easy. Given the extreme mistrust that exists on all sides of the forest management debate, the political nature of that debate, and the potential costs of a massive restoration effort, there is little chance that the restoration work needed on plateau forests can be done on the scale necessary without innovative new approaches."

We are moving strongly and in unison towards the implementation of a restoration effort of inspiring scale and quality.

In the *Advocate* issues to follow, a series of articles chronicled efforts by the Trust and key partners to accelerate collaborative, science-based restoration in the Greater Grand Canyon region through the Grand Canyon Forests Partnership, which later became the Greater Flagstaff Forests Partnership (GFFP). Such efforts were both ambitious and appropriately scaled for their time—aiming to "design, implement, and finance restoration of 5000–10,000 acre landscapes annually." Partners spent thousands of hours meeting in the woods, in meeting rooms, and around flip charts and computers, designing a series of fuels reduction and restoration projects that ultimately encircled Flagstaff.

Over the course of GFFP's first several years of existence, the excitement surrounding efforts to re-direct forest management in the region towards a community-driven restoration paradigm was palpable. Advocates, scientists, restoration practitioners, small-scale wood products entrepreneurs, and civic leaders worked very hard to implement innovative restoration strategies intended to be ecologically appropriate, socially acceptable, and economically viable. Through this work, however, several hard realities became apparent. First, restoration projects generated wood and biomass residue that was very low value, challenging efforts to develop viable wood products industries and thereby compromising efforts to make treatments pay for themselves. Second, despite a relatively broad inclusion of partners in project planning, a significant portion of the environmental community objected to GFFP's work. For the time, it was too much, too fast. Third, the U.S. Forest Service continually struggled to work in a deeply collaborative fashion with external partners.

Over time, economic and social challenges created a dynamic whereby on-the-ground implementation of restoration efforts proceeded at a much slower pace than originally expected (due to high per-acre treatment costs), and planning proceeded at pace, but was often held up by appeals. In the face of slower than expected progress and political controversy, collaborative energy began to wane, and continued to wane for some time to come.

Facing page: Ponderosa pine forest before restoration treatment. Left: Same forest after treatment.
Tom Bean

Local-scale, community-based forest restoration, as initiated through GFFP's work around Flagstaff, was the right work at the right time in the right place. Despite its challenges, the effort created positive space and momentum for doing things differently. It created a perfect venue for learning, and primed the proverbial pump for a second generation of collaborative landscape-scale restoration work now playing out in northern Arizona.

Current efforts to restore fire-adapted forests across northern Arizona have, to a large degree, risen from the ashes of the Rodeo-Chediski fire of 2002. That fire —the largest on record in northern Arizona—burned nearly 500,000 acres, dramatically overshadowing the Horseshore and Hocherffer fires of 1996, and re-setting our collective consciousness related to large wildfires.

Following the Rodeo-Chediski fire, and after the predictable post-fire finger pointing and blame-casting had subsided, stakeholders across the state got to work to prevent such a fire from occurring again. From 2003 to the present, the broadest possible spectrum of stakeholders (including those that had opposed GFFP's work around Flagstaff), have worked to build agreement around restoration strategies designed to be science-based and collaboration-supported (like previous efforts), but also landscape-scale (hundreds of thousands to millions of acres in size), and supported by appropriately-scaled industry capable of substantially offsetting per-acre treatment costs. This agreement was formalized in 2007 through the *Statewide Strategy for Restoring Arizona's Forests* (a publication of the Arizona Forest Health Council, which the Trust has co-chaired since 2005).

Building on this foundational agreement, stakeholders in northern Arizona have worked steadily since 2007 to translate agreement into ambitious landscape-scale action through the Four Forests Restoration Initiative. They have developed restoration strategies for the entire Mogollon Rim (an area 2.4 million acres in size), estimated wood products resulting from those strategies (allowing wood products industries to begin preparations for infrastructure development), and secured strong, consensus support from affected cities, towns, and counties as well as the governor, state legislature, and northern Arizona's congressional representative Ann Kirkpatrick.

Nearly fifteen years after many committed individuals and organizations rallied to initiate community- based forest restoration in northern Arizona, we are moving strongly and in unison towards the implementation of a restoration effort of inspiring scale and quality. We have moved well beyond 5000-10,000 acre projects, and are now focusing on planning and implementing 750,000 acre projects. We are intending to work in a much more deeply collaborative fashion to build agreement of a broader and more durable nature than has been reached on any similar effort. We expect to create a restoration economy that simultaneously benefits rural economies, and dramatically reduces treatment costs. We intend that rigorous landscape-scale science and adaptive management will guide our work and allow us to learn our way through the numerous complexities and challenges inherent to working at broad, landscape scales.

As restoration practitioners noted in this same publication nearly fifteen years ago, the restoration road ahead will not be easy. We have struggled constructively to find restoration success at smaller scales, and have now tasked ourselves with clearing the formidable hurdles apparent at small scales and painfully obvious at much larger scales. Taking advantage of experience gained over the past fifteen years, of lessons learned through trial and error, and of an unmistakable urgency heightened by the advent of very large, unnaturally severe wildfires, we intend to succeed—because we have no choice but to succeed.

The Kane and Two Mile Ranch Program

Implementing a New Vision for Land Stewardship on the Colorado Plateau

by Christine Albano

The Kane and Two Mile ranch program was born in 2005 from an incredible opportunity and an extraordinary vision. As a livestock permittee, we could approach conservation with a new perspective; one that could only come from being an active participant on the land. As a conservation organization, we could redefine the role of livestock permittee and authenticate a model for successful conservation-based land management that results from ensuring that strong science is incorporated into decision-making, and building lasting public-private partnerships that allow long-term conservation objectives to be realized.

On many occasions, I've had the good fortune to witness the unfolding of an evening from Kane Ranch headquarters. As I've watched the sun sink below the crest of the Kaibab Plateau, the last rays of light dance across the Vermilion Cliffs, and the subtle white light of the stars in the Milky Way silhouette the broad expanse of the House Rock Valley, I've found it easy to understand why this place was chosen to carry our mission forward. This spectacular 850,000-acre public lands ranch shares a 110-mile boundary with Grand Canyon National Park, includes the Vermilion Cliffs National Monument, three wilderness areas, Marble Canyon Area of Critical Environmental Concern, and the Grand Canyon Game Preserve. The ranch covers a 6,000-ft elevation gradient that includes a wide spectrum of the ecological life zones found across the entire Colorado Plateau. It exhibits a patchwork of ecological conditions with some areas remaining wild and intact while others bear the scars of a century of livestock overgrazing, water development, old-growth logging, and fire suppression. The ranches unite a diversity of species and a suite of histories, cultures, land management jurisdictions, and conservation opportunities.

The mission of the Kane and Two Mile ranch program is to work with land management agencies to maintain and restore the ecological, cultural, and scenic values of the ranches' landscape. Our work began in 2005 with a field- and remote sensing-based ecological assessment of the ranches to determine baseline conditions in soils, ground cover, and vegetation at 606 ground plots. Results from this effort allowed us to identify priorities for restoration and research ranging in scope from site-specific to landscape scale. Since then, we've delved into an ambitious program of research, monitoring, and actively restoring key locations across the ranch and have expanded our work to confront the challenges of restoring native grasses and shrubs in arid landscapes, prioritizing and mitigating the impacts of invasive non-native species, and developing strategies for large-scale forest restoration.

Our projects have ranged from a site-specific riparian habitat restoration across eighteen miles of Paria Canyon, to a small-scale experimental grassland restoration in House Rock Valley, to monitoring a 30,000-acre habitat restoration project on the west

Facing page: Kane Ranch corral.
Right: Eli Bernstein checking data.
Below: Volunteers examining plot.

side of the Kaibab Plateau. We've developed landscape-scale spatial models that characterize forest structure, wildlife habitat, fire characteristics and invasive non-native species occurrence that were foundational to the Kaibab Forest Health Focus; a process that provided a set of recommendations for establishing forest management strategies that meet ecological objectives, while reducing the threat of undesirable fire events on the Kaibab Plateau. In concert, these diversified approaches have given us a better understanding of our own ability to restore these lands while also providing important information to guide the efforts of our agency partners, who hold primary responsibility for conservation and management of public lands and natural resources.

We have played a leadership role in creating and sustaining the Kaibab-Vermilion Cliffs Heritage Alliance. Since its inception in 2005, the Alliance has facilitated archaeological investigations, helped land managers document hundreds of archaeological sites with the assistance of many talented and dedicated volunteers, and established a field school to train college students in archaeological methods. In recognition of its work, the Alliance has received the U.S. Forest Service Windows on the Past Award, the Arizona Governor's Archaeology Advisory Commission Award in Public Archaeology, Private/Non-Profit Entity, and was designated by the White House as a Preserve America Steward.

Our successes have hinged upon having constructive relationships with our federal and state agency partners and by leveraging partnerships such as that with the Lab of Landscape Ecology and Conservation Biology at Northern Arizona University, which has resulted in five graduate and post-doctoral research projects focused exclusively on land management and policy issues relevant to the Kane and Two Mile ranch landscape. Our growing volunteer constituency has had an enormous impact on the Kane and Two Mile ranch program. To date, volunteers have contributed nearly 50,000 hours toward building fences to protect and restore sensitive riparian habitats, modifying ranch facilities to make them wildlife friendly, collecting and planting native seed, surveying plants, examining wildlife and cultural sites, removing and monitoring invasive non-native species, and assisting land managers and researchers in data collection.

Over the last five years, we've faced significant challenges associated with matching production-oriented livestock management with maintaining ecological health on the arid regions of the ranches. We've grasped how much more there is to restoration than simply putting seeds in the ground. It takes broad support, careful monitoring, patience, flexibility, and a willingness to change your approach if it isn't working. We've learned when to be cautious and when to be optimistic. We've seen the progress that can be made when relationships with land managers and other partners are respectful, productive, and forward-thinking. We've learned what big changes a small group of people can make on this landscape and in turn, how this landscape changes people.

Now in its fifth year, the Kane and Two Mile ranch program exemplifies an inclusive, conservation-based approach to land management that engages citizens, government agencies, and other stakeholders in long-term, landscape-scale restoration objectives.

In its coming of age, the ranch project has matured from a vision into a tangible example of progressive and science-based land stewardship in a changing West. As a stakeholder in this landscape, it has been my pleasure and privilege to watch this vision come to fruition.

Above: Humpback Chub. AZGFD
Right: Colorado River through Marble Canyon. Tom Bean

Protecting and Restoring the Colorado River

by Nikolai Lash

I am haunted by an ugly fish.

Motivating my work to protect and restore Grand Canyon is the strangest of advocacy companions: the Colorado River humpback chub, a 4-million-year-old endangered fish found only in the Colorado River. By conventional standards one must say it is ugly. By standards born of its birthplace, one might say it is an elegant creature beautifully adapted to historic river conditions. Its large dorsal hump helped the chub maintain body position in the swift river currents that once flowed through Grand Canyon.

For millions of years, the Colorado River carved its way through the Colorado Plateau, persisting through ice ages, changing course to adapt to continental shift, and burrowing through molten lava dams and walls of granite. The Colorado brought life to the ancient civilizations of the canyons; made possible the early European settlements of the Southwest; and finally was captured to create today's dense urban Sunbelt. Now, thirty million people, thirteen Native American tribes, innumerable species, and thousands of acres of increasingly rare habitat are dependent on it. But after ages of vitality and generosity, the Colorado's heart—Grand Canyon—has begun to weaken under the river's heavy burden.

Glen Canyon Dam blocked the Colorado River in 1963 and initiated a cascade of ecosystem changes. The greatly increased rate of erosion from flows designed to maximize hydropower set in motion the continual loss of sediment from Grand Canyon, resulting in the loss of critical habitat for native fish. Four of the eight species of native fish that once plied the waters of Grand Canyon have been lost.

But in 1988, the Grand Canyon Trust, in partnership with the National Wildlife Federation and the Western River Guides Association, sued Western Area Power Administration (WAPA), claiming that WAPA must evaluate the environmental impacts of the agency's marketing criteria for hydroelectric power generated at Glen Canyon Dam. In September 1989 the Trust scored a major victory when the federal court ordered WAPA to prepare an Environmental Impact Statement (EIS) on long-term power contracts.

That same year, Secretary of the Interior Manuel Lujan directed the Bureau of Reclamation to prepare an EIS to determine "the impact of operations of the Glen Canyon Dam on the downstream ecological and environmental resources within the Grand Canyon National Park and the Glen Canyon

National Recreation Area." Two of the significant consequences of the EIS were the Grand Canyon Protection Act and the Glen Canyon Dam Adaptive Management Program.

Trust lobbying helped lead to the passage of the Grand Canyon Protection Act in 1992. Then-president of the Grand Canyon Trust, Edward M. Norton Jr., remarked about this important accomplishment: "The Grand Canyon Protection Act finally drives a stake through the heart of WAPA's policy that hydropower generation at Glen Canyon Dam takes priority over all other values of the Grand Canyon." The Act itself states:

> *The Secretary [of the Interior] shall operate Glen Canyon Dam . . . in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.*

In compliance with the Grand Canyon Protection Act, the EIS proposed a process of "adaptive management" whereby the effects of dam operations on downstream resources would be monitored and assessed. Thus was formed the Glen Canyon Dam Adaptive Management Program (AMP).

The Grand Canyon Trust has been involved in the AMP since its inception, along with twenty-five other stakeholders. These stakeholders include representatives from federal agencies, Native American tribes, basin states, environmental organizations, recreation organizations, electric power producers, and scientists. Potentially, the AMP provides a framework for improving the ecological health of Grand Canyon via a feedback loop—management actions are performed, their consequences are scientifically analyzed, and management actions are adjusted for maximum ecological integrity.

But the AMP is not living up to its grand mandate to restore and protect the resources in Grand Canyon. Politics dominated by water and power interests have undermined implementation of the best experiments for Grand Canyon. Resource conditions have declined under the AMP's watch. The most recent U.S. Geological Survey Colorado River Report concluded that every resource of concern in Grand Canyon has declined over the past decade. Beaches have shrunk or disappeared, cultural and archaeological sites have lost their sediment-based foundations, and native fish have become further imperiled. A 2010 Columbia Journal of Environmental Law Review article called the AMP a failure: "After thirteen years and millions of dollars, the AMP has failed to stabilize or otherwise improve the quality of the fragile downstream ecosystem."

Even so, the AMP can lay claim to several successes over the past thirteen years, including implementation of high-flow experiments. In collaboration with other stakeholders in the AMP, the Trust successfully advocated for three separate high-flow experiments—the most recent one conducted in March 2008. These high-flow releases have helped build beaches, restore native fish habitat, and stabilize the centuries-old cultural sites.

In January 2006, a Trust lawsuit was successful in convincing a federal court to declare the Fish and Wildlife Service's Recovery Goals for the endangered humpback chub illegal and invalid. In February 2009, the Trust published a report by David Marcus on Glen Canyon Dam hydropower economics, which concluded that running flows beneficial to Grand Canyon would cost the average hydropower customer mere pennies a month.

Twenty years after the Trust filed its first Colorado River lawsuit, we have found it necessary to again bring the federal government into court. We believe the Bureau of Reclamation and Fish and Wildlife Service are not doing enough to meet their legal obligations to protect and restore the Grand Canyon, including recovering its endangered fish.

The unassuming humpback chub is holding on—four-million years of existence have taught it patience. It is a fish well-adapted to a healthy, sediment-rich Grand Canyon. It is now time to give the chub—and us—that healthy Grand Canyon.

Utah State Trust Lands Program

A Collaboration for People and Nature by Laura Kamala

Since 1998, Grand Canyon Trust has worked with the Utah State Trust Lands Administration (SITLA), the agency that everyone loves to hate. We strive to find workable solutions when conflicts arise between the state agency and communities affected by the disposition of their lands. Many Utah towns have a gripe or two about how SITLA conducts business in their sphere. In some counties, state lands provide welcome development opportunities for expanding communities, but SITLA also tends to propose controversial development projects on lands that locals have always considered open space. Usually there is no prior consultation with affected adjacent landowners or residents.

In 1894 Utah achieved statehood and was granted nearly six million acres by the federal government—sections 2, 16, 32 and 36 in every township in the state for the purpose of funding public education. An additional 1.6 million acres was given for higher and special education. Unlike the eastern states, territories had no established property tax base to provide these revenues. About half of Utah's land grant was sold into private ownership within the first thirty-five years of statehood.

On federal lands there are no fences delineating borders shared with the state; therefore the public tends to think about and use SITLA lands as they do Bureau of Land Management (BLM) or U.S. Forest Service (USFS) lands. Although undeveloped state lands remain accessible, they are not public lands per se. Citizens accustomed to being consulted through the National Environmental Policy Act (NEPA) process when resources are developed on federal lands are often dismayed when they are not informed about development projects on state lands.

SITLA was created in 1994 when Utah's legislature enacted the School and Institutional Lands Management Act. Previously, while the state lands were governed by the Division of State Lands and Forestry, there was a perception of mismanagement and corruption because Utah's trust lands produced far less funding per acre than surrounding states.

Under the new code, SITLA had a mandate to "manage the lands and revenues generated from the lands in the most prudent and profitable manner possible, and not for any purpose inconsistent with the best interests of the trust beneficiaries." The rule further stated, "The beneficiaries do not include other governmental institutions or agencies, the public at large, or the general welfare of this state." However, the legislature did grant the new agency broad discretion in how they achieved their fiduciary responsibility to the beneficiaries and that is why the Trust is able to collaborate with SITLA to protect special conservation values on their lands.

When I began working for Grand Canyon Trust, I was engaged with SITLA in a land planning process on 5000 acres of prime mule deer habitat and critical watershed in the community where I live. The state had begun selling blocks of land for real estate development around Castle Valley; including the base lands of Castleton Tower, the popular climbing destination. We joined with Utah Open Lands (UOL) on several conservation initiatives, which eventually led to preservation of key SITLA lands in the valley. We secured funding to purchase over 500 acres of wildlife habitat, which are now held in trust by UOL with a conservation easement administered by the Utah Division of Wildlife Resources. The remaining lands were eventually rolled into the Utah Recreational Land Exchange Act of 2009, signed by President Obama last year.

Grand Canyon Trust worked with SITLA for seven years developing this legislation and advocating for its passage in the U.S. Congress. The bill trades approximately 46,000 acres of state lands to the BLM in southeast Utah near the Colorado River, consolidating the federal estate while permanently withdrawing 20,000 acres of these lands from oil and gas leasing. The Land Exchange Act is currently being implemented and will prevent new development in critical wildlife habitat, municipal watersheds, and valued scenic and recreational lands. SITLA will gain about 40,000 acres of federal lands more appropriate for

Facing page: Castleton Tower, Utah. Tom Till
Below: Kiva Ruin, Bullet Canyon, Utah
Grand Gulch Proposed Wilderness Tom Till

development. This bill provides a template to expedite state/federal land exchanges; including resolution of the heretofore challenging valuation process.

About 3.5 million acres of trust lands remain in Utah today awaiting disposition. There are 190,000 acres of SITLA lands held within Wilderness Study Areas, an additional 330,000 acres in Wilderness Inventory Areas, and another 500,000 acres in America's Red Rock Wilderness bill.

Senator Bennett (R-UT) recently announced he is writing legislation for a comprehensive land bill in San Juan County in the manner of his Washington County Growth and Conservation Act of 2009. We have proposed to Senator Bennett that he include a land exchange component for this new bill to trade state lands out of proposed wilderness areas and other places slated for protective designations, and into areas with potential to generate revenue for the schools.

Getting SITLA lands out of the federal estate would partially quell the argument that Utah state lawmakers recently used to pass a likely unconstitutional bill authorizing the state to take federal land by eminent domain. One of the points state lawmakers have made is that SITLA lands locked up in BLM Wilderness Study Areas should be accessible for development, and they should claim the access from the federal government.

Building the Utah Forest Program

by Mary O'Brien

The Utah Forests Program was conceived by Bill Hedden. In late summer 2003, the three Colorado Plateau national forests (Dixie, Fishlake, and Manti-La Sal) were embarking on revisions of their seventeen-year-old forest plans, and I was building a straw bale house in Castle Valley.

Bill had never met me but heard that I had helped ten conservation organizations and two tribes develop a Native Ecosystems Alternative for a revision of the Hells Canyon National Recreation Area Comprehensive Management Plan in eastern Oregon and western Idaho. He heard that surprisingly large chunks of that alternative had been adopted.

One southeastern Utah conservation organization, Red Rock Forests, had begun an alternative for the Manti-La Sal NF plan revision. When asked by that organization for model language for a portion of the alternative, I suggested they assemble a coalition of organizations because it's a large job to write an alternative that covers all aspects of a national forest's management.

Bill learned of this and asked me to assemble a coalition for development of an alternative for all three forests. I said I didn't know the forests because the southern Utah hiking I had done for years while living in California and Oregon had been in the red rock canyons.

"That's alright," Bill said. "Others know about the forests; you know about organizing coalitions."

Bill is a convincing person and quickly ended my planned one-year rest from conservation organizing.

By November 2003, Grand Canyon Trust had organized the Three Forests Coalition, a collection of twelve local, state, regional, and national conservation organizations, in order to write a Sustainable Multiple Use Alternative for the three forests. The first deadline we had was for scoping comments for the Manti-La Sal NF: December 24, 2003. We met that deadline at 5:00 p.m. with a conservation-based alternative—desired conditions, objectives, standards and guidelines—for every aspect of forest management.

Twelve days later, on January 5, 2004, the Bush Administration pulled the plug on writing forest plans under the National Environmental Policy Act (NEPA). There were to be no Environmental Impact Statements, alternatives, or standards. These were to be "aspirational" documents with no consequences, limits, or accountability.

As the Bush planning rules went to court, the three forests planning stopped. Now, six years later, their twenty-four-year-old plans are even more inadequate in light of climate change and advances in understanding the ecological consequences of working Colorado Plateau forests hard for "production."

What the Coalition had in late 2003, however, was a comprehensive alternative whose relevant elements we have been submitting for every significant project and plan the three forests have put forward under NEPA since 2005.

Facing page: Our Reference Areas Project is bringing a special, forgotten type of wildlife (pollinators) to the Forest Service's attention. Bill Gray

Below: Our Cottonwood, Aspen, and Willow Project documents riparian damage in the forests of southern Utah, and recommends how the forests can better manage this key habitat. Wayne Hoskisson

As I write this, for instance, nine of the coalition's members, including the Trust, are pooling our respective expertise to comment on the Draft Supplemental Information Report (SIR) for the Dixie National Forest Oil and Gas Leasing Plan. The SIR has been issued in part because our 2008 scoping comments for the plan pointed out that, oops, the Dixie NF had forgotten to consider climate change in its oil and gas leasing proposal.

A central feature of the Three Forests Coalition is that, in addition to working together on improving projects and plans on the three forests, each member organization embarks on its own special strategies and campaigns.

Among the Coalition members, Grand Canyon Trust is the only one that focuses entirely on these three national forests. As we walked the three forests, we came to realize that a major factor in forest management, livestock grazing, was overlooked by both the Forest Service and other conservation organizations. For example, another coalition member, Utah Environmental Congress, tracks projects on all five national forests in Utah, but focuses on forestry and roadless areas. Wildlands CPR focuses on off-road vehicle concerns and the benefits of closing routes. The Wilderness Society (and now, the Trust's new Utah Wilderness Program) focuses on wilderness, but also on oil and gas. Western Watersheds does focus on livestock grazing, but not on these three national forests.

Evidence of grazing degradation was everywhere. There were incised streams and banks shearing under the weight of half-ton cows; magnificent old cottonwood with no young cottonwood replacing them; potentially 10-foot high willow browsed down to foot-high bushes year after year; aspen stands that you could see through because all understory aspen sprouts, shrubs, grasses and wildflowers had become dinner for too many cattle and elk. There were old beaver dams without the sound of a beaver's tail slapping water. And there were sagebrush with pathetic numbers of sage grouse forced to venture away from cover out to muddy cow ponds to get water, and too few grasses and flowers to attract insects for their chicks.

We began to measure what the three forests were failing to measure; to take Forest Service employees with us to see what we were seeing and measuring; to meet with them in their offices; and to propose alternatives to their projects that were affected by grazing. We proposed that they establish reference areas, minimally-impacted examples of meadows, springs, ponderosa pine, sagebrush, and other habitats to compare with the habitats they were working too hard. We proposed collaborations to plan for better livestock grazing, a realm which heretofore had been considered the purview of Forest Service and livestock permittees alone.

All three Forest Supervisors are responding. Reference areas are being adopted. Livestock collaborations are opening eyes. Our field work is being accepted as objective and sound. The deficits in cottonwood, aspen and willow are being acknowledged. Beaver are going to be reintroduced. Changes in upland aspen and in riparian management are in the works.

And this year we've added to the Utah Forests Program a half-time volunteer coordinator, Andrew Mount; and a full-time associate, Mindy Wheeler, a Park City botanist who has run her own consulting company for ten years. In one small but noteworthy circle, Mindy Wheeler was the first representative of the Utah Native Plant Society, at that first meeting in November 2003, when the Utah Forests Program took flight.

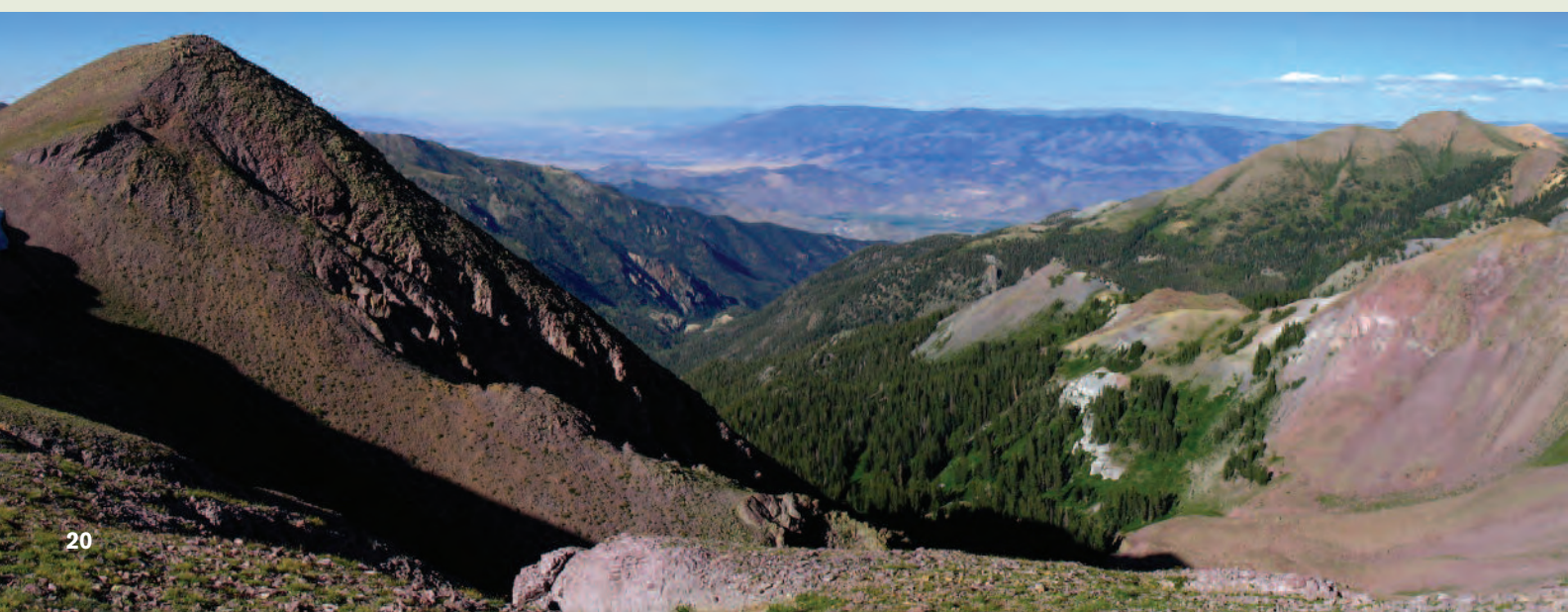
Utah Forest Wilderness A New Trust Program

by Tim Peterson

Better known for its iconic redrock arches, sandstone bluffs and sinuous canyons, southern Utah is also home to heavenly peaks, unspoiled watersheds, and green vistas of alpine tundra, ponderosa pine, spruce/fir and aspen forests. Southern Utah's national forests are truly sky islands of biodiversity—the wellspring of nourishment and life-giving water for Utah's renowned slickrock country. These sky islands jut above the desert, catching water as storms pass; providing refuge to wildlife and to heat-weary trekkers. In some places, these mountains are so well known that they define the landscape—think of Moab's La Sal range. Others are hidden gems that few travelers even see; fewer still seek them out for recreation or recuperation—think of Monroe Mountain or the magnificent Tushar range in southwestern Utah. These mountains are important for many reasons, and they are long overdue for protection. To that end, the Trust established a Utah Forest Wilderness Program in early 2010, which seeks to bring forest lands to the forefront in Utah's ongoing wilderness debate.

Following the passage of the Washington County Growth and Conservation Act in 2009 (see the, *Advocate*, Summer/Fall 2009, *Cooperation Delivers New Utah Wilderness*), the conservation community determined that Utah's Forest Service lands needed better representation in future county land use bill deliberations. Largely because Forest Service lands were not part of the discussions that led to crafting the bill, only about 2,500 acres of Forest Service lands were designated in a county where more than 300,000 acres still qualify for wilderness protection (the 2,500 acres that were designated wilderness in Washington County are a logical extension on Forest Service lands of the adjacent BLM Cottonwood Wilderness Study Area). Seeing a need, the Trust responded, creating a new program to advocate for forest wilderness in new legislation. Utah forests are not a new program area for us; the Trust has been active in southern Utah forest issues since 2002. Mary O'Brien's groundbreaking work on livestock grazing and beaver restoration is well known to faithful *Advocate* readers.

Though Mary is a dynamo, she can't do it all—a new hire was needed to tackle the complex political and policy issues involved in Utah wilderness. I joined the Trust staff in January of 2010, bringing a background of working for protection of public lands across the West. I cut my teeth assisting with a re-inventory of America's Redrock Wilderness Act on Utah's BLM lands in the nineties, then moved on to conduct field inventory and off-road vehicle monitoring on Utah's national forests, as well as in Colorado, New Mexico, Nevada, Montana, Arizona, Oregon, and Idaho. Between stints in the field, I have conducted Geographic Information System (GIS) mapping, National Environmental Policy Act project work, and policy and legal analysis for local, regional, and national conservation groups. I have been an active member of the Trust-sponsored Three Forests Coalition since its inception, and I have worked with Mary on many issues spanning many employers. The work has



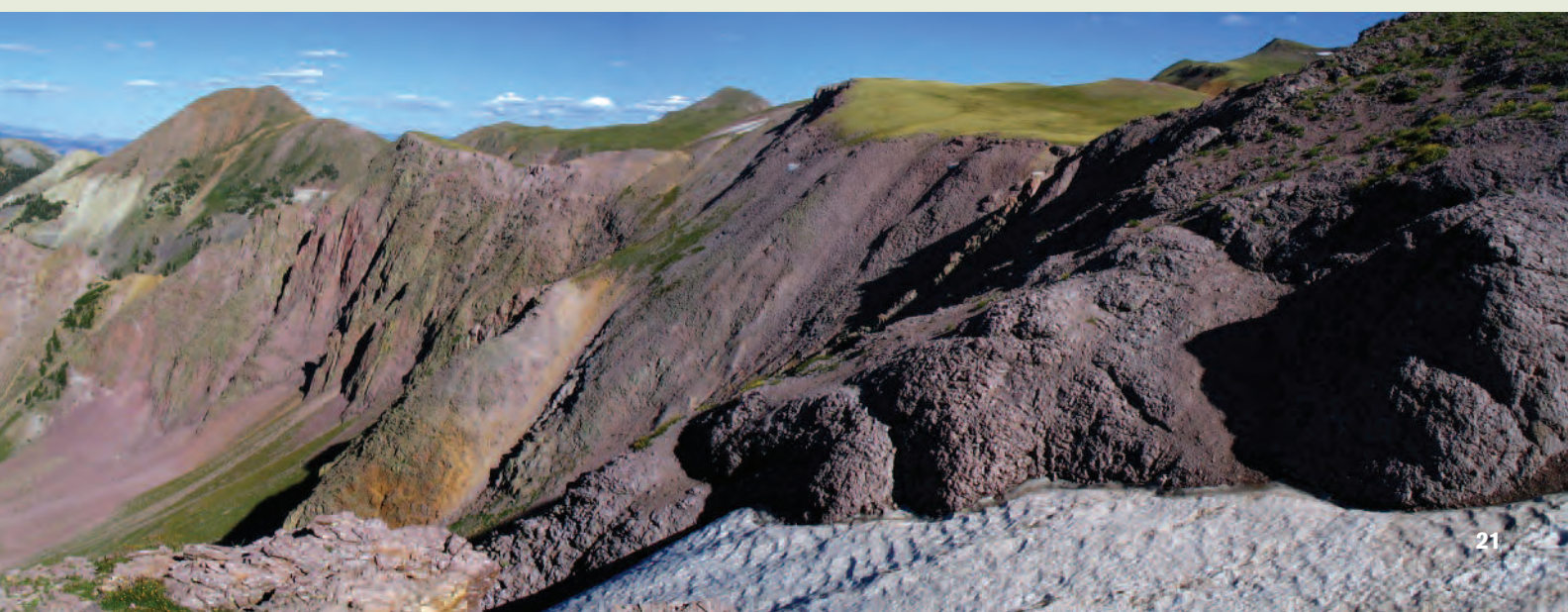
Below: from left; Unnamed Peak, Mt Brigham, South Edna Peak, Alunite Ridge in the Bullion/Delano–City Creek Proposed Wilderness, Tushar Mountains, Fishlake National Forest, Utah. ©Tim Peterson

been rewarding, and we've won important victories, particularly during the Travel Management Planning process. As a fifth-generation Utahn, the state's forests have always held a special place in my heart, and thousands of hours on-the-ground working and exploring have only deepened my appreciation for their immense value. They are wild, they are relatively unknown, and they deserve the attention and protection afforded Utah's celebrated desert landscapes.

New county-by-county land use bills based on the Washington County model are currently being crafted across Utah (see the *Advocate*, Winter/Spring 2010, *Peace is Possible*). As of this writing, the processes are most active in Emery, Beaver, Piute and San Juan counties. Though known for such prized landforms as the San Rafael Swell, the Wah Wah Mountains and Cedar Mesa (all managed by the Bureau of Land Management), these counties also contain inestimable forest resources—clean water, wildlife habitat, picturesque peaks and canyons, unmeasured cultural resources, and rivers, lakes and springs. Forest lands that could see protection soon include the spectacular Tushar Mountains and the habitat-rich Monroe Mountain in south-central Utah, the culturally rich Abajo Mountains and canyons falling from Elk Ridge, and the stately La Sal mountains in southeastern Utah.

We have seized the opportunity to become more involved in the new land use bill processes, particularly to speak up for forests. Progress made since the inception of the program includes securing a seat at the table in the processes already underway, as well as substantial work toward unifying two distinct Forest Service Wilderness proposals into a single proposal. Exacting and time consuming, the unification process has been finished for the counties in play. The result, a Unified Forest Wilderness proposal, represents the culmination of thousands of hours of on-the-ground research including photo documentation, thorough agency research, and consideration of management conflicts and habitat values. The Trust has also worked with the environmental and recreational communities to prioritize land use designations by type and area in preparation for what will certainly be difficult negotiations. In addition to field-checking new wilderness boundaries, and participation in upcoming dialogue with county commissioners and other stakeholders, we intend to build a broad coalition in support of meaningful, long-term landscape preservation.

Utah has not seen significant Forest Service additions to the National Wilderness Preservation System since 1984; the opportunity to add more is now. When all four counties currently under consideration are combined, more than 800,000 acres of new Forest Service Wilderness are under study; lands that now have a stronger voice for much-needed protection. We will soon begin building a public campaign to earn greater protections for Utah's matchless Forest Service wilderness throughout southern Utah—a campaign that can use your help. Please be on the lookout for ways in which you can get involved.



Volunteer Program

Connecting People to the Landscapes of the Colorado Plateau

by Kate Watters

The Grand Canyon Trust volunteer program provides opportunities for people to experience the landscapes of the Colorado Plateau by becoming active participants in hard work and detailed observation. We see the sights like very few: from behind the blade of a handsaw, or the handle of a shovel, or with a clipboard in hand. We taste the dust and sometimes wear the dirt for many days. We feel the long days in the sun on our skin, and our bodies ache from new demands placed upon them. The rewards are both tangible and intangible.

The volunteer program began in 1997 as an informal effort to work with local volunteers to survey the unmapped network of roads surrounding the San Francisco Peaks. During the first five years, a small, dedicated group helped gather field information about California Condors and cougars for scientists trying to understand how these species interact with the human landscape. They also documented the ecological significance of hundreds of thousands of acres of Arizona State Trust Lands in an effort to protect them from development. Early pioneers such as Karen Murray, Bob Hoffa and Ethan Aumack cultivated projects for volunteers that blended science and policy and were aligned with the Trust's advocacy objectives.

In 2005, with the purchase of the Kane and Two Mile ranches (K2M), the volunteer program expanded first from one half-time to two full-time positions with the talents of Kari Malen and Maria Clementi. The geographic focus of the program's science-based conservation and restoration projects shifted to the 850,000 acres of public lands located north of the Grand Canyon at the eastern end of the Arizona Strip. Volunteers became a critical force in constructing a strong science foundation to help identify the best management practices and assist us in our collaboration with federal agencies. In 2005, 100 volunteers donated 4,000 hours of their time towards projects on the ranches. Early projects consisted of hours of historic building cleanup and maintenance, forest overstory measurements, and mapping invasive tamarisk trees in streams and washes.

The program has grown from a staff of three full-time and a part-time intern to essentially four full-time volunteer coordinators leading trips from March through November. The effective K2M volunteer stewardship model has been applied to develop opportunities that leverage the Trust's objectives in Grand Canyon National Park, southern Utah forests, and Native American communities. These emerging areas have seen initial success through partnerships with Grand Canyon Youth, Northern Arizona University (NAU), Navajo Nation Parks and Recreation, the National Park Service, the Kaibab Paiute Tribe, and Leupp Family Farms. Volunteer participation has increased each year reaching 400 individuals and 15,000 donated hours in 2009. Since 2005, over 1,000 people have discovered this wild country firsthand and become stewards of these beloved landscapes. This volunteer contribution is the equivalent of twenty-five one-year positions devoted to hands-on, science-based conservation on federal

CONSERVE

lands and with tribal communities. Our partners now respect and depend on volunteer labor to do increasingly more complex projects and contribute specialized knowledge. Trust inventions, such as the Budding Botanist and Spring Stewards programs, invest in volunteers who make long-term commitments to ongoing botanical and springs research.

More than ever before the conservation movement needs an active, knowledgeable constituency in order to advance policy changes needed to protect these places. Our volunteers represent a unique community devoted to the many forgotten corners of the Colorado Plateau. Some are newly retired people ready to begin their next career in hydrology or botany, or recent transplants from the Midwest anxious to learn more about their new home. Others are regulars like Val, a veteran of the Vietnam War who lives out of his old truck in the forest in the summer and has volunteered on almost every trip since 2003. Gisela, a retired physical therapist, began her volunteer career removing tamarisk. Her recent experience as a "Budding Botanist" volunteer led her to enroll in a plant taxonomy course at Northern Arizona University. There are also countless high school and college students from Chicago to Hopiland on their first camping adventure, who are introduced to the possibilities of a career dedicated to environmental protection.

My own fresh-out-of-college experience as a volunteer intern at Canyon de Chelly kindled my passion for the Colorado Plateau. As a crew leader with AmeriCorps, I witnessed 18-25 year-old volunteers from vastly disparate backgrounds grow stronger and become family while working on the Arizona Trail. As a biological technician in the Grand Canyon, I discovered the field of conservation biology by moving between my hand lens and handsaw on a mission to remove tamarisk from Colorado River tributaries with a volunteer community by my side.

The Grand Canyon taught me to be observant. I want to believe that by teaching people to look closely, they will no longer be able to look away. At first glance the land appears to be empty; but on your knees, looking for tiny grass seedlings at a restoration site or surveying a spring's flora, you see every miracle firsthand. We gather the data to create the policy rationale for protecting special places. But do we dare teach people to care?

The past decade of volunteer-driven conservation projects has spanned myriad environmental challenges. We strive to ensure every hour of hard fieldwork makes a difference to the places we have come to call home. Because restoration is not always pretty and sometimes not even possible for our most arid, degraded places, the lessons are often hard ones. We find that good science does not always affect bad environmental policy and, when matched against human interests, too many times the land loses.

While we celebrate the small successes of each willow that grows where a tamarisk tree once stood, and every condor chick that is hatched in the wild, we understand that the real work is in changing minds. We look ahead to the next decade of volunteers who will take their newfound knowledge and challenge the human belief that we are separate from and above nature, rather than part of it. We hope they will find the courage to live as if every species matters and every landscape is precious.

Rekindling the Dream of the "Times of Times" through a Green Renaissance

by Tony Skrelunas

At dawn, many families on the Navajo (Diné) Reservation rise to greet the morning sun with a prayer. At least 20,000 families still use a kerosene lamp for light, while batteries power the radio for the morning news, given in the Diné language on KTNN. They hear about the latest political news and the next big ceremony.

Lately, the news has increasingly covered subjects related to the Tribe's creation of a Green Economy Commission and pursuit of its first major wind energy project. It's welcome news that rekindles some of the Diné stories about the "Times of Times," the period of the late 1800s to early 1900s when Diné society experienced a cultural efflorescence. Many aspects of Navajo life flourished: memorable teachings were formulated; family and clan structure strengthened; ceremonies were enriched; and architecture, medicine and farming all saw advances that strengthened economic vitality and stewardship of the land.

The "Times of Times" were squelched by federal policies and efforts to educate children at far away schools. Fortunately, many of the teachings and lifestyles survived.

The economies of tribes in the region are challenged by high unemployment and dependence on revenue from coal mines, oil wells, and power plants. Leases negotiated with the tribes for these resources were detrimental to the economies and natural environment of Native communities. Tribes had neither good information nor adequate representation to negotiate fair deals. Cultural representatives, disseminators of traditional teachings that for centuries ensured life balance with the ecosystem, were not listened to. Tribal governments became passive land owners of the places where these industrial activities took place. A gross example of this economic and environmental injustice is Peabody's Black Mesa Mine. This mine, which began in the seventies, took 1.4 billion gallons of pristine water annually from reservation aquifers to slurry coal to a major polluter, Mojave Generating Station, 273 miles away. The deals for payments to the Hopi and Navajo Tribes for both coal and water were set well below market rates.

This economic system for the most part existed without interruption until a suit required owners of the Mojave Generating Station to install scrubbers to comply with EPA laws. The power plant eventually closed in 2005 after choosing to not spend the money needed to retrofit. The Black Mesa Mine, supplier of coal to the plant, closed. As a result, 230 jobs and significant revenue to the Hopi and Navajo Tribes were lost.

Facing page: Sunrise at Monument Valley, Navajo Nation.
Richard Mayol
Left: Green Economy Coalition members celebrate their success.
Green Economy Coalition

Since 2005, the Grand Canyon Trust Native America program has worked with the Hopi and Navajo nations to create the momentum needed to transition from an economy based in resource extraction to one more sustainable. Much of this work has been driven by the overriding need to create economic alternatives to mitigate the closure of Black Mesa Mine and the loss of tribal jobs and revenue.

To address this need, the Trust initiated work on several fronts:

First, we informed communities about the upcoming closure and discuss sustainable economic development strategies. We sought out and shared information about the best practices Native American communities have utilized to assist in planning and developing sustainable economies while protecting local values and culture.

Second, we developed actual pilot projects with communities that wanted to find ways to implement a sustainable economy. We worked with Sipaulovi Village to develop a community-based strategy, a business plan for creation of an enterprise, and secured funds for staff to work on a retail marketplace. We helped Shonto with similar community-based work that, in addition to a retail center, included creation of a renewable energy company, and studies for utility-scale wind energy development. We also worked with the Navajo Nation on planning and feasibility research for The View Hotel project in Monument Valley. At Leupp, we worked with thirty traditional family farmers to secure funding, build a non-profit entity, develop management capacity, and create a viable farming operation.

Third, we worked with tribal government officials on large-scale renewable energy projects that could serve as revenue generators. We helped the Hopi with due diligence on a wind proposal, guided them through the process of a predevelopment agreement, and helped prepare testimony to ensure the approval of a county conditional use permit. We also began the process of evaluating the possibility of active tribal ownership in major renewable energy projects. We introduced Foresight Wind Energy to the Navajo Nation and their two key ventures, Diné Power Authority and Navajo Tribal Utility Authority. We helped both parties through the process of developing a full partnership in the Aubrey Cliffs wind project. Much of our effort focused on increasing the capacity of the Navajo Nation, which was assisted by the hiring of a seasoned consultant to facilitate the capacity building.

Finally, along with a coalition of Hopi and Navajo grassroots organizations and community leaders, we asked the California Public Utilities Commission to invest proceeds generated from the sale of sulfur credits from the shuttered Mohave Generating Station to help the Hopi and Navajo Tribes develop renewable energy. Though still a work in progress, the effort has paid dividends in other ways. For the first time, grassroots groups and tribal governments have learned how to work together. They have gained insight into the challenges that tribal governments face in providing for their people, and worked through misunderstandings about how tribal economies, laws, finances, and government work.

Building on this foundation, the Trust provided advice to the Navajo Nation and Green Economy Coalition to ensure establishment of the Green Economy Commission.

As the foregoing suggests, the Grand Canyon Trust is, and will remain, at the heart of the discussion to create a sustainable Navajo economy. For example, at a recent breakfast caucus, the Trust's representative in the Navajo Green Economy Coalition was asked to present the benefits of green development to delegates representing the five agencies of the Navajo Nation. We introduced ourselves and discussed the merits of the proposals. The delegates, sitting in circles around breakfast, debated the legislation. A legislative whip kept the discussion going and, for the first time since the creation of the modern Navajo Government, the environment and green economic opportunities were openly discussed and respectfully debated with the Trust and our fellow Navajo non-governmental organizations. The future looks promising.

Michael Collier

Air & Energy Program Progress through Persistence

by Roger Clark

"Would it have happened without us?"

Ed asks about the Grand Canyon Trust's role in the Environmental Protection Agency's 1991 decision to require owners of Navajo Generating Station to install $450 million in pollution controls. "I can't say. But I can tell you this, it wouldn't have happened without strong leadership from Bill Rosenberg at EPA. And Bob Yunke at the Environmental Defense Fund had laid a foundation for enforcing the 'visibility' provisions of the Clean Air Act."

Ed Norton was the Trust's president during the historic decision to cut Navajo coal plant's sulfur pollution by 90 percent because it was reducing visibility at the Grand Canyon. Dubbed two decades earlier as "a Rottweiler in granny glasses" for his ferocious negotiating style and hip eyewear, Ed is circumspect on this drizzly San Francisco morning. He's humble as ever, shirking off credit for his remarkable achievements during the Trust's embryonic years.

Ed did acknowledge, however, a few accomplishments prior to stepping down in 1993: "We're succeeding not because we're brilliant, but because we have been dogged and persistent and always there. We assemble facts and make the case."

Focus on Air Quality

Early on, the Grand Canyon Trust focused on two of the region's eighteen coal-fired power plants. Mohave and Navajo generating stations were impairing visibility at Grand Canyon National Park. But it would take another decade before pollution controls would be required at Mohave and other nearby coal plants powering the Southwest's booming cities and suburbs.

In the late 1990s, attorney Reed Zars and Trust program director Rick Moore challenged Southern California Edison's (SCE) team of lawyers for a court order to inspect emission records from Mohave Generating Station. They then dug through boxes of raw data to determine that the power plant had violated the Clean Air Act hundreds of thousands of times by releasing dense plumes of particulates into the air. It took another year before Mohave's owners consented to install pollution controls by the end of 2005 or shut it down, which was the eventual outcome.

Zars and Moore then turned their attention to the San Juan Generating Station run by the Public Service Company of New Mexico (PNM). The team was assisted by Sierra Club advocates in obtaining first-hand

accounts of pollution from residents in the Farmington area before being permitted to inspect the power plant's emission records. They found flagrant violations that the owners fiercely denied and, for two years, fought against the "allegations."

But, as had occurred during negotiations on the Navajo plant, a utility executive helped to break the impasse. "When PNM hired Hugh Smith," recalls Rick Moore, "we finally made some progress." In 2004, a federal judge ruled that the plant had violated the Clean Air Act more than 42,000 times, and its owners committed to a pollution reduction plan. Today, PNM touts the coal plant's "$325 million state-of-the-art environmental upgrade" and can be credited for adopting the nation's first "voluntary" mercury control program at a coal plant.

Champion Clean Energy

In 2001, Tucson Electric Power announced plans to add two 400-megawatt units to its Springerville coal plant. The Grand Canyon Trust filed suit challenging the air permit of the existing units and to block building new ones. Our arguments against the additions also included Arizona's need to invest in efficiency and renewable energy and to reduce greenhouse gases. Concurrently, the Trust worked to convince the Arizona Corporation Commission to adopt one of the nation's first renewable energy standards for public utilities.

Although the agreement reached on Springerville in 2005 allowed the new units to be built, stricter pollution controls on both the existing units and the new ones were required. The Trust also negotiated an unprecedented condition that the plant owners establish a $5 million fund to invest in clean energy projects. The fund is now being used to help purchase solar electricity systems for remote homes on reservation lands in northern Arizona and New Mexico, and to match funding for larger clean energy projects.

The Trust initiated another innovative action in collaboration with grassroots indigenous groups and the Sierra Club. Known as the "Just Transition Coalition," we proposed to invest pollution credits created by the closure of Mohave Generating Station into renewable energy projects that would help replace tribal revenues and jobs lost when the plant and Black Mesa mine closed. Mohave's owners failed to secure a coal supply agreement with Hopi and Navajo governments, causing the owners to shutter the plant on December 31, 2005. Its closure meant that SCE stood to reap an annual windfall from the sale of 30,000 tons of sulfur pollution credits.

Although the fate of Mohave's pollution credits is still pending before the California Public Utility Commission, Hopi and Navajo renewable energy projects are moving forward. These could receive a financial boost from revenues from credits and, more importantly, power purchase agreements with utilities that own high-voltage transmission lines traversing tribal lands.

Coal Too Costly

Five years ago, dozens of new coal plants were being proposed to serve southwestern centers of growth. In 2006, California enacted landmark legislation to reduce its greenhouse gas emissions. Its provisions prohibit acquiring electricity from carbon intensive sources such as conventional coal plants. Its effect was to scare off potential investors, causing the cancellation of nearly every new plant.

Undeterred by California's decision, Arizona Public Service Company (APS) joined other utilities in proposing an enormously expensive new transmission line to deliver coal-based power from Wyoming to Phoenix, Las Vegas, and Salt Lake City. The Trust and allies intervened by appealing to APS leaders to consider efficiency and renewable energy as more cost-effective options to a multi-billion-dollar investment in coal. Our success was affirmed when APS announced in 2009 that it would no longer be adding coal-generated electricity to its portfolio, due primarily to economic considerations.

When updating Ed Norton about the possibility that utilities might now consider phasing out coal plants and opt to invest in clean energy alternatives, he recalled that during the Navajo negotiations we made a 90 percent reduction in pollution more affordable than a 70 percent cut. "That," he said, "sealed the deal." He liked our current appeal to utilities' bottom line and praised our persistence.

Going "Green" at Grand Canyon National Park

by Steve Martin,
Superintendent: Grand Canyon National Park

Grand Canyon National Park is a unique landscape of sweeping vistas, incredible biodiversity, six million years of geologic history, and a remarkable ability to touch people from all over the world with a sense of place. With all its natural attributes, it is also a perfect place for teaching the world how humans affect the landscape.

Grand Canyon National Park has nearly $2 billion invested in infrastructure supporting visitation to this iconic World Heritage site. Much of this infrastructure was built long before sustainability, carbon emissions, and efficient use of energy and natural resources were given consideration. The Park currently needs $300 million in deferred maintenance on park facilities. It's a challenge that we consider an opportunity.

The National Park Service (NPS) at Grand Canyon is contemplating projects that will emphasize the importance of sustainability and "green" practices to the 4.5 million who visit annually from all over the world.

We are developing a vision for the park, shared by an impressive and diverse group of partners, that seeks to make the Grand Canyon a showcase for sustainable practices. Putting aside the glitz and glamour, we plan to roll up our sleeves and create a practical demonstration of innovative resource management.

Grand Canyon Trust is helping us move to the "green" side. Working with partners like the Salt River Project, Arizona Public Service and others, exciting projects such as hydroelectric power generation at Phantom Ranch are in the works.

Connecting hydroelectric generators to the Trans-Canyon water line will produce all of the electricity required for NPS and concessionaire operations at Phantom Ranch. This project meets renewable energy production objectives and reduces greenhouse gas (GHG) emissions while eliminating costs associated with providing electricity in remote locations. We intend for this project to showcase clean energy for the hundreds of day and overnight visitors in the Grand Canyon and provide an important first step towards upgrading Grand Canyon's infrastructure.

Utility engineers get ready for hike to Phantom Ranch.

Other major "green" initiatives at the park include:

South Rim Solar Power. In 2009, Arizona Public Service (APS) donated 84 solar panels to the Park, providing 30 percent of Grand Canyon Visitor Center power and reducing consumption of coal-generated electricity.

South Rim Shuttle Bus System. Fueled by compressed natural gas, the shuttle buses reduce GHG emissions by decreasing the number of vehicles on roads while providing a visitor service. Greenway walking paths also allow visitors to experience extraordinary Canyon views. A bike rental concession has also been established.

Water Bottle Filling Stations. Sited near trailheads and public locations, the project meets solid waste reduction objectives by encouraging the use of refillable bottles while improving safety for visitors.

Climate Friendly Parks Program. The program helps parks mitigate climate change impacts, reduce GHG emissions, and adapt to changing environmental conditions. A draft plan identifying actions to address climate change is in progress. Additionally, the action plan proposes increased collaboration with universities and climate change experts to identify research needs. Strengthening these relationships will enhance our knowledge about the impacts of climate change on natural resources.

Gandhi said, "Be the change you want to see in the world." Through partnerships, planning efforts, and unceasing conviction, Grand Canyon will be America's "greenest" national park and a global model for sustainability.

How You Can Help the Trust Protect the Colorado Plateau for Another 25 Years

1 **Visit the Colorado Plateau and renew your commitment**

A visit to the Colorado Plateau will renew your spirit and inspire you to get more involved. There is nothing quite as compelling as visiting an awe inspiring landscape to reaffirm why conserving special places for future generations is so important, and likewise, imagining what might have happened had the Trust not intervened to protect the region.

2 **Renew and keep your membership current**

The Trust's work depends on the relatively small group of people who really care about the future of the Colorado Plateau. Without the Trust's membership, the Colorado Plateau is a big, lonely, out-of-the-way place and ground zero for all of the energy development projects the rest of the country does not want. Your membership and financial support keep us mission focused.

3 **Respond generously to our appeals**

Trust memberships account for only 8 percent of our annual operating funds. To supplement this, we depend on a generous response to our biannual appeals, as well as foundation grants. Foundations tend to support narrowly focused project work, so appeal contributions provide critical support to our general operations and broader programs.

4 **Pledge a monthly contribution**

In these challenging economic times it is often difficult to be as generous as we might otherwise like to be. One way of making this easier while increasing your level of support is to make an annual pledge with monthly contributions.

5 **Help us friend-raise**

The Trust wants to build its membership and there are no better advocates than its existing members. For holidays and special occasions consider introducing your family and friends to the work of the Trust by gifting them a membership. Alternatively, take it upon yourself to help us recruit your family and friends as members.

6 **Join our Activist Network**

The Trust has an activist network of more than 4000 people who receive action alerts via e-mail and who are asked periodically to contact public lands agency representatives or members of Congress. Generally speaking, these action alerts relate to comments on environmental impact statements or bills pending in Congress. To make your voice heard, please visit our website and sign up for our activist network.

7 **Volunteer**

For those that really like to roll up their sleeves, the Trust has volunteer opportunities that range from working on projects in our offices to more than thirty annual volunteer trips across the Colorado Plateau in places like Grand Canyon National Park, on the Trust's Kane and Two Mile ranches, on the national forests of northern Arizona and Utah, and on the Navajo, Hopi and Kaibab-Paiute reservations.

8 **Consider the Trust in your estate planning and will**

Please consider a legacy gift to the Trust. For more information, please contact Phil Pearl at (928) 774-7488 x237 or ppearl@grandcanyontrust.org.

Above all, please know how much we do appreciate all you do to make us a stronger advocate for the Colorado Plateau. For more information visit **www.grandcanyontrust.org**

Stewart Udall
A Remembrance

by Bill Hedden

When Stewart Udall died this March, we lost the last truly great American voice proclaiming that protection of our natural heritage should be a consuming passion for all people regardless of their politics or station in life. As a congressman and then interior secretary in the Kennedy and Johnson administrations, he helped build a national consensus and bipartisan movement that lasted for twenty years and resulted in passage of most of our landmark environmental laws. He presided over the establishment of four national parks, six national monuments, fifty wildlife refuges, and many national seashores, historic sites and recreation areas. We are unlikely to see that era's equal.

I had the deep pleasure of knowing Stewart for forty-three years, first as a mere young acquaintance who helped take him and Bobby Kennedy on a 1967 river trip through the Hudson River Gorge, which was threatened by a dam and saved by their efforts. In the 1970s I worked with him when he supported local action to protect Canyonlands National Park from becoming the home of our nation's high level nuclear waste repository. We teamed up in the late 1980s when he was an early proponent of a smart electric grid built on the new discoveries then taking place in superconduction. He became my mentor when I combined county elected politics and conservation work during the 1990s, and, as a founding board member of the Trust, he has been my conscience and inspiration during my fifteen years here. I have long been flattered that he named the villain after me in his much worked-over movie script about southeastern Utah.

The Udalls have a tradition of family gatherings and Stewart called a momentous one in 2006 when he brought everybody to Moab. He wanted to have a last visit to Canyonlands National Park, the establishment of which was one of his proudest accomplishments. He said one day during the visit that he would like to make some remarks, so I helped turn out an impromptu gathering of lucky locals at Grandview Point, the stupendous overlook at the end of the Island in the Sky. There Stewart recounted the marvelous story of how Floyd Dominy, the powerful

Far left: Stewart Udall and Bill Hedden at Canyonlands, 2006.
Left: Grandview Point at Canyonlands. Tom Till

Commissioner of the Bureau of Reclamation, flew him over the Canyonlands basin to show him the next great dam site and instead inspired in Stewart the determination to protect the place as a park. When he finished the funny and moving talk, he took my arm and asked me to walk him over to the edge. We stood there silently taking in one of the great views, both of us aware that one of us, at least, was seeing it for the last time, and Stewart finally said, "It's in your hands now. Take good care of it." I still cry when I think of that moment.

I don't kid myself for a moment that Stewart really considered me the prime protector of Canyonlands. There are terrific park service employees doing that every day. But in talking to others about him since his passing, I realize that one of his many gifts was to make each of us feel our own true compass, our own obligation to make sure that future generations have clean air and water and wild places and other species to solace them. He did that throughout all his long life and he could inspire almost anybody to take action. That is why he never gave up on the idea of a bipartisan movement to protect the environment: he knew that it was absolutely essential and he knew from his own experience that it is possible.

At the end of his life Stewart wrote a letter to his grandchildren. Though most people in his position would be resting on their laurels, he started by acknowledging the many mistakes his generation made in creating a society based on the assumption of unlimited resources. Characteristically, he built the case for an unprecedented international project to build a sustainable energy future. He was optimistic, "Because the world has had its fill of fear and is hungry for hope." He ended, as I think he ended with me at Grandview Point, by saying, "Go well, do well, my children! Support all endeavors that promise a better life for the inhabitants of our planet. Cherish sunsets, wild creations, and wild places. Have a love affair with the wonder and beauty of the earth!"

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Havasupai Tribe members perform Round Dance to protest uranium mining near Grand Canyon. Amanda Voisard

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.