COLORADO PLATEAU CLVO Cate
GRAND CANYON TRUST

WINTER 2006

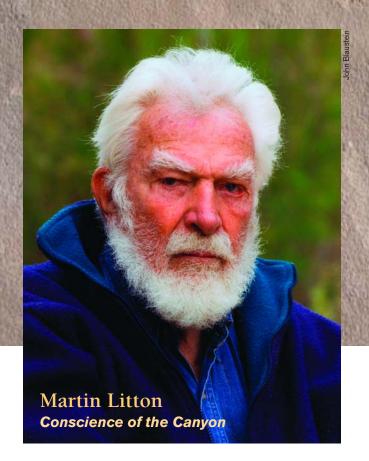


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You can help the Grand Canyon Trust by taking action on any of the issues presented in this magazine by going to the "Take Action" section of our website at: www.grandcanyontrust.org; by writing a letter-to-the-editor or an opinion-editorial piece for your local newspaper; by circulating a petition or writing a letter for presentation to your elected officials; or by organizing a forum and speaking out in your community.

CHARLES Wilkinson



n February 2nd, the Grand Canyon Trust will present its highest honor, the John Wesley Powell Award, to Martin Litton.

Born in 1917, Martin was captivated by the Sierra Nevada—he once backpacked on wild Mount Whitney for twelve days. After serving in World War II, he joined the *Los Angeles Times* and his passion for the land took him into a career that would make him one of America's greatest conservationists.

In the early 1950s, with the frenetic Big Buildup in full swing, he learned about a proposed dam that would flood Dinosaur National Monument. He broke out his camping gear and headed for the remote Colorado Plateau to see Dinosaur. Martin loosed a flurry of *Times* feature articles. His editors gladly looked the other way. "Los Angeles did not want any dams that would diminish the flow of the Colorado River water. So I could write anything I wanted."

This spawned his longtime alliance with David Brower of the Sierra Club. Martin urged Brower to hammer on the economics of the subsidy-laden project and Brower did. A turning point came when Sierra Club members placed on every congressman's desk a copy of *This is Dinosaur*, a stunning defense of Dinosaur edited by Wallace Stegner and loaded with compelling images. Martin contributed photographs and wrote for it.

The effort at Dinosaur succeeded but, in a compromise, Glen Canyon Dam inundated nearly 200 miles of little-known wild river. For both Brower and Litton it was their most grievous defeat. But the two episodes left two lasting legacies: Dinosaur marked the beginning of the modern environmental movement and Glen Canyon left an indelible lesson.

By the mid-1950s, Martin had given his heart and soul to the Grand Canyon. He first ran the river in 1955—he has made more than 35 trips—and founded Grand Canyon Dories, to take visitors down through the Canyon. With the other outfitters going to rubber pontoons, Litton developed wood dories, true to Powell's spirit but much lighter and more agile than Powell's boats. Painted blue with upsweeping bows and sterns, this fleet became the envy of the river. Never much of a businessman, Martin sold the company in 1987 and the dories are now made of closed-cell foam, but they remain "Litton's dories" to Canyon aficionados.

With Glen Canyon Dam approved by Congress in 1956, the boomers turned to the biggest prize of all—damming the Grand Canyon with two dams, Bridge Canyon and Marble Canyon. In those hell-for-leather times, it was not radical to flood the Grand Canyon. It absolutely had to be done to jumpstart the Southwest so that the cities could fulfill their destinies.

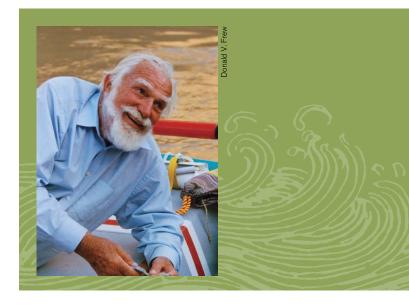
It would be radical *not* to dam the Grand Canyon. In *The History of the Sierra Club*, Michael Cohen detailed Martin Litton's crucial role in the fight against the two dams, one of the signal campaigns in conservation history. To Litton's fury, the Sierra Club, then the only group capable of leading a campaign, was cautious. One board member argued that "the economic loss would be staggering" and sagely opined that visitors on the rim would hardly notice the difference.

Brower asked Litton to meet with the board. Martin gladly responded with a grand presentation replete with maps and statistics. He quoted TR: "Leave [the Canyon] as it is. You cannot improve it." He left no doubt that it would be a long, uphill

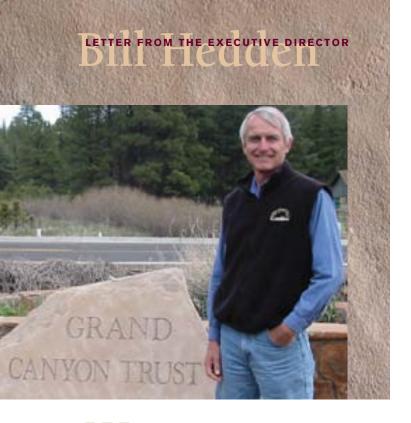
struggle, but exhorted them to take on the cause. In the end, the board applauded Martin's presentation and voted to oppose the dams.

Brower must have had that moment prominently in mind when he would later say of Martin that "for more years than I will ever admit, he has been my conservation conscience."

It was close. Martin and Brower worked tirelessly. They produced another book, *Time and the River Flowing*. They ran the Sierra Club's "battle ads:" "SHOULD WE ALSO FLOOD THE SISTINE CHAPEL SO THE TOURISTS CAN GET CLOSER TO THE CEILING?" In time Stewart Udall, then interior secretary, withdrew the administration's support. Certainty for the dams had turned into certainty for the Canyon.



The Colorado River will always run in Martin's veins. In 1969, he put in at Green River, Utah, and ran down through the Canyon to honor the 100th anniversary of Powell's first journey. He has made several "last" trips down the river, the most recent in 2004 at age 87. The boatmen and boatwomen venerate him—he, like Powell, rides on every one of their journeys. In a call to arms to the Grand Canyon River Guides, he laid out his central belief: "There are several reasons why the river should be natural. One is the joy of running on a natural river, and knowing you're as close to nature as you can be. And the other is, whether we run it or not, nature has its right. It has a right to be here untrammeled, unfettered."



hen I was four years old I pestered my grandfather until he taught me to fish on a small New Jersey lake. He rowed slowly and smoked a cigar to ward off mosquitoes while I cast a worm into the lanes between the lily pads and pickerelweed. Since this is a fishing story, you'll have guessed that eventually the red and white bobber on my line was jerked sideways across the still surface and then, heartstoppingly, pulled under by a yellow perch. The thrill was repeated with more powerful largemouth bass on the next two casts. In the photo with my trophies I look solemn, like somebody who has just learned something important about himself. Fishing was my joy and solace throughout childhood until the beloved lake was dredged into a gravel pit and the nearby ponds and streams drained to serve as flood control when the watershed was paved over with apartment buildings. After that beginning, conservation is not an abstraction for me: too often it involves the health and very existence of places I love.

As a young man, the friend who taught me the pleasures of trout fishing in the small streams draining Utah's La Sal Mountains remarked that there is nothing like the enthusiasm of a new convert. He didn't know that I was returning to my original self, fishing the deep canyons where I was likelier to meet a bear than another person. Berries lined the banks and fat, wild trout throbbed in every feeding lane. I used to stick my head in the stream to drink the cold water, feeling like a child.

This year, the Utah Division of Wildlife Resources issued an Advisory telling people not to eat fish from these streams (nor from Desolation Canyon on the Green River) because they are laden with mercury. The effluent from coal-fired power plants is sifting down on the most remote places, washing into the streams where it starts its way up the food chain through the mayflies and stoneflies to the cutthroats. When even the La Sals are poisoned we should all take notice.

Nationwide, it is estimated that 130,000 Americans die from air pollution each year, the lost lives costing our country some \$650 billion. That is part of the reason why the Clean Air Act is calculated to provide net health benefits over costs of \$1 trillion annually. In his book, Collapse, Pulitzer Prize winner Jared Diamond reports that the sustained effort by U.S. regulators over the last 30 years has reduced levels of the six major air pollutants nationally by 25%, even though our energy consumption and population have increased 40% during those same decades. Nevertheless, anti-environmental rhetoric, like that used to push President Bush's Clear Skies Initiative, commonly has it that we cannot afford pollution controls and must choose between a healthy economy and a healthy planet. It is a demoralizing and shortsighted view of the world that thankfully isn't true.

Six years ago, the Trust, Sierra Club and National Parks Conservation Association signed a Consent Decree with the owners of the Mohave Generating Station in Laughlin, Nevada, one of the main contributors to air pollution at Grand Canyon. The contract gave them three years to resolve issues with the Hopi and Navajo regarding water and coal supplies and then three more years to design and install pollution controls on the plant. Total costs of new water pipelines, upgrades of the ageing power plant, and pollution controls were commonly estimated at slightly more than \$1 billion. Apparently, sharp pencil folks at the utilities decided the cost was too much, because no agreements were reached with the tribes and no pollution controls were installed. Under these circumstances, the Decree calls for the plant to shut down at the end of 2005.

Ironically, the run up in natural gas prices has made the power from even a refurbished Mohave

plant look very cost competitive: conservative estimates show that the utilities will have to spend at least \$2.2 billion more over the next four years to buy power from natural gas plants than if they had continued to run Mohave. Those scrubbers, which would have made the utilities environmental good-guys and preserved jobs and coal royalties for the tribes, are

looking like smart investments in hindsight. And, as fossil fuels get scarcer and scarcer, this kind of economic calculus will be ever more true. We can have our health back and a good economy, too, but only if we start telling ourselves that we must invest in the future of even our wildest, most remote streams and everything closer to home as well.



Trust Steps Up to the Plate with Ranch Purchase

-by Martha Hahn

t was a ground ball to the shortstop and an easy throw to first for the second out. My heart pounded as I ran to the plate. I was the Bear's batboy and this was my moment on the field. I loved to play ball and never really understood why girls weren't allowed into little league. But this was now my chance and I accepted it like a million-dollar contract.

My contract that day was short-lived, lasting only three innings before the parents in the stands rallied an objection over a girl being on the field. It was a theme I heard over and over throughout my life and rather than allowing it to be dispiriting, I began to value the opportunities gained by being undaunted. It was a courageous act and finding my way into places girls normally didn't tread often brought me a seat at a table reserved only for those with the proper passport. The rewards I gained at the table always proved greater than sitting in the stands.

Having a place at the table can be vital for achievement in conservation work. At the Trust we have positioned ourselves well with the purchase of the Kane and Two Mile Ranches. What does this buy us? Most significantly, the attainment of public land grazing permits across 850,000 acres gives us a seat at the table where a menu of resource management prescriptions can be served through a partnership with the region's federal and state agencies. It will

take time to develop a common understanding, and even longer the trust. There will be roles to define and fears to overcome. Yet, with patience and perseverance there is much to be gained—not only for the health of the resources, but for the sake of establishing a partnership with lasting results.

As with my love for the game of baseball, I feel an enormous responsibility in my conservation role to be bold and play big. Our partner opportunity means we don't have to sit on the sidelines or pick up bats. In fact, this is our "million-dollar contract" and a chance to step up to the plate for a swing at what I consider a grand slam—natural resources restoration, historic and cultural preservation, healthy forest and rangeland management, and action-oriented agency partnerships. Will our turn at bat be easy and accepted? Most likely not...and that must not deter us. As Ralph Waldo Emerson once said, "Whatever course you decide upon, there is always someone to tell you that you are wrong. There are always difficulties arising, which tempt you to believe that your critics are right. To map out a course of action and follow it to the end requires...courage."

The Kane and Two Mile Ranch acquisitions are a courageous act in territory not normally trekked by conservation groups. We're batting for the rewards to be gained at the table rather than positioning off the field as bystanders.



Buffalo Bill at Kane Ranch Headquarters in 1892.

The Kane and Two Mile Ranches

A Project Grounded on the Land and Based in Optimism -by Rick Moore

he front porch of the Kane Ranch headquarters at the Kaibab Plateau's eastern base affords an astonishing view across the vast Marble Platform to the distant Vermilion and Echo Cliffs. In early October—after the Trust and The Conservation Fund finalized the purchase of the Kane and Two Mile ranches—I sat on the porch watching the late afternoon sun bathe the scene in warm, golden light and reflected on how I came to be sitting there and why it made me so happy.

For many years I worked on air quality issues for the Trust—critical work that I thoroughly enjoyed. However, when the opportunity arose for me to leave the airports, big-city hotels, conference rooms, lawyers' offices, and courtrooms for the sage-scented open spaces of the Kane and Two Mile ranches, I jumped at the chance.

During the past year I've spent lots of time exploring them and with every trip I become more intrigued by their diversity and enamored with the breathtaking landscape. It is an area of dramatic contrasts, from the lush forests and green meadows of the Kaibab Plateau, to the red twisted sandstone outcroppings on the Paria Plateau, to the vast horizontal grass and shrub lands of House Rock Valley and the Marble Platform.

The ranch work is tremendously challenging and I revel in the project's multidimensional aspects: getting to know people who live and work in the area; learning the intriguing histories of the ranches; learning to manage livestock to minimize impact on the fragile landscape; incorporating science into our ranch

management; partnering with federal and state land managers to restore degraded lands while maintaining those in good shape; puzzling through the politics associated with purchasing a ranch and grazing livestock; working on-the-ground projects with volunteers to benefit wildlife; and building a constituency for this special place so it will remain one of the preeminent landscapes in the Southwest.

But the most invigorating facet of the project is that it provides an opportunity to create a vision and work on the ground towards achieving it. In <u>A Sand County Almanac</u>, Aldo Leopold wrote that "one of the penalties of an ecological education is that one lives alone in a world of wounds." Living in a wounded world leads to one of the pitfalls for those working on environmental and conservation issues: we are frequently compelled to say "no" to proposed projects in an attempt to stop causing more wounds.

Yet if we do our work well on the ranches, we will be able to say "yes" rather than "no," and begin to heal some of those wounds. As we move forward, we must keep in mind another idea of Leopold's—that an act is right when it "strengthens and re-knits the web of relationships, and so tends to preserve the integrity, stability and beauty of the community." By carefully basing our actions on Leopold's concept, we can approach our work with a positive attitude and move into the future feeling good about our work, rather than always looking backwards and yearning for a time when things were better because the land had not been so badly wounded.



Sunrise at Kane Ranch Headquarters in 2005.

Having the opportunity to develop a positive vision—and then working towards achieving that vision—is a refreshing departure from simply battling the status quo. But if we are to work towards a vision, we must understand where we came from and learning the history—both natural and cultural—is another joy of this project.

People have lived in the area encompassed by the ranches and their associated grazing allotments for millennia. Rock art panels, scattered chips of tool-making stones, and the remains of small pit houses and pueblos provide silent testimony to the hundreds of years that Native Americans lived here before Europeans arrived. The first known non-natives to see the area were a small group of Spanish explorers led by friars Francisco Dominguez and Silvestre Velez de Escalante. In 1776 they crossed the Kaibab Plateau and traveled along the base of the Vermilion Cliffs returning to Santa Fe from a failed attempt to reach Monterey, California.

Less than a hundred years later, Mormon pioneers settled the Arizona Strip and began grazing livestock on the Kaibab Plateau, House Rock Valley, and the Marble Platform. In the late 1800s, Joseph Hamblin, son of prominent Mormon pioneer Jacob Hamblin, began ranching on the Paria Plateau, and the Kaibab Land and Cattle Company—owned by John W. Young, son of the Mormon leader Brigham Young—acquired Kane Ranch. It was during this era that Zane Gray spent time at the Kane headquarters and Buffalo Bill Cody and a group of English aristocrats stopped at Kane on their way to see if building a hunting lodge on the top of the Kaibab Plateau made sense. Teddy Roosevelt stopped at Kane in 1913 on his way to hunt deer on the Kaibab Plateau.

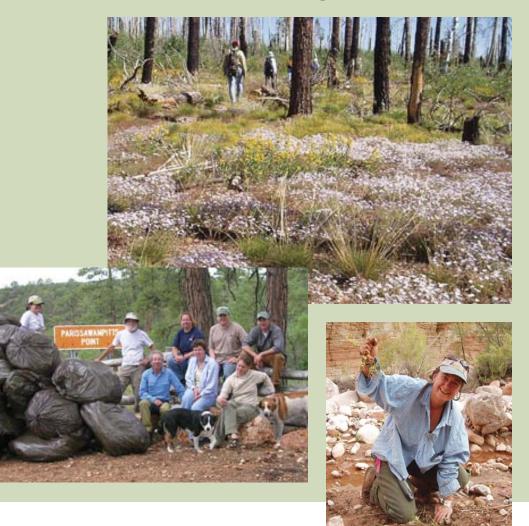
During the 20th century, the Kane and Two Mile ranches changed hands several times, but livestock grazing continued virtually uninterrupted until the Kane Land Stewardship and Cattle Company removed the cattle in 2001. Then, on September 28, 2005, the Grand Canyon Trust and The Conservation Fund purchased the ranch.

But we need to know more than history if we are to act in concert with Aldo Leopold's ideas. In <u>Essay from Round River</u>, Leopold stated: "The first rule to intelligent tinkering is to keep all the parts." While we knew we lacked the parts comprising a complete and natural ecosystem when we bought the ranches, we needed to determine what parts still exist on the ranches and where they occur if we are going to "intelligently tinker" by undertaking restoration projects.

To find out what "parts" we had, Ethan Aumack, the Trust's Director of Restoration, sent five, two-person teams of ecologists into the field this summer to gather plant and soils data at more than 650 points. The effort required stamina, patience, and attention to detail. But the effort paid off, and we now have a good understanding of a significant portion of the "parts" making up the ranches. There is more to do, but we now have a solid basis to begin focusing our efforts.

The remarkable landscape making up the Kane and Two Mile ranches and their grazing allotments deserve our best thinking, our best planning, and our best efforts to ensure that the multitude of things making this area unique and special endure for future generations. I sincerely hope that I will return to the Kane headquarters many years from now, sit on the front porch and see a land where the wounds are beginning to heal.

Restoration Work Offers Rewards and Challenges for Volunteers –by Kari Malen and Maria Clementi





he 2005 field season was incredibly successful and exciting. Our volunteer program has shifted its emphasis to focus largely on restoration-related projects across the Kane and Two Mile ranches, and we are quickly coming to appreciate the rewards and challenges associated with working in such a remote and spectacular place.

Our success this past year resulted from tremendous dedication and enthusiasm from our amazing volunteers. They came from our own backyard and from as far away as Oregon, California, and Wisconsin, and included board members, donors, Trust employees, students, and innumberable community members.

This summer, more than 120 volunteers ranging from retirees to elementary school kids worked with us to remove noxious weed species (Scotch and

wavyleaf thistle, for example) from several sensitive locations, and played a critical role in our baseline forest assessment project. In this project volunteers were trained in basic forest assessment techniques using GPS units, clinometers, and basal area diameter tapes in order to assist in the collection of forest overstory data at nearly 800 sites across the Kaibab Plateau. The overstory data will be used this winter to develop satellite imagery-based, high resolution maps describing forest structure and composition, fire, watershed, and wildlife habitat characteristics for the project area. These datasets will be central in the development of a comprehensive Kane and Two Mile ranches management and restoration plan, to be completed in early 2006. This is, by far, the most scientifically rigorous, large-scale, volunteer-based assessment effort of its kind in this region.

Volunteers remove wavyleaf thistle (Cirsium undulatum) and tamarisk (Tamarix ramosisima) from the Kane/Two Mile ranches and Grand Canyon, and assist in a Kaibab Plateau forest assessment.









In the Flagstaff area, we were very lucky to receive assistance from volunteers in a variety of smaller but critically important projects—from pronghorn habitat restoration work at Lake Kinnickinick in cooperation with the Arizona Game and Fish Department, to weed removal at the Trust headquarters, to data entry, gear inventory, advertising and outreach, and even cleaning out the barn.

Volunteer projects in 2006 promise to be even more interesting and exciting than 2005. We are busy preparing to partner with the Forest Service, Arizona Game and Fish Department, and the Bureau of Land Management on projects for next season. These projects will include continued forest assessment work, fencing natural lakes on the Kaibab Plateau, fence reconstruction in House Rock Valley (to better facilitate pronghorn movement and dispersal), and

non-native plant species eradication in several locations. We are also planning to work with volunteers to help restore some existing ranch structures so that they are more habitable for volunteers while they are working and learning in these magnificent landscapes. Finally, we look forward to continuing to work with volunteers in the Flagstaff area on a variety of restoration related projects.

For those of you interested in following the progress of the volunteer programs please log on to our new website at www.gcvolunteers.org where you will find project information, application materials, and a way to contact us directly.

Thanks again to all the volunteers and cooperating agency staff for their hard work, devotion and diligent stewardship. We are looking forward to working together again this coming season!

Third Generation Rancher Sees Opportunity for Trust

-by Jim Babbitt

fter a recent meeting of the board of my family's ranch company, one of the directors approached me to ask why the Grand Canyon Trust was purchasing the Kane and Two Mile ranches. I replied that the acquisitions represent an extraordinary opportunity to work toward conservation and restoration of some 850,000 acres of land on the Kaibab and Paria Plateaus, adjacent to Grand Canyon National Park and in the very heart of our region. As such, the Kane-Two Mile project falls squarely within the Trust's mission of protecting and restoring the landscapes and rivers of the Colorado Plateau.

Rather than working on issues in the abstract, we cultivate and develop relationships with the peoples and cultures of the Colorado Plateau, and we take local communities and economies into consideration as we go about our conservation work.

With more than a little skepticism in his voice, my cousin then asked how the grazing of cattle could possibly be seen as true conservation. I explained that the Trust would indeed be required to run cattle on the Forest Service and Bureau of Land Management allotments, but that grazing would be done with the lightest hand possible, coupled with complementary restoration projects aimed at reversing the impacts of almost 150 years of high intensity grazing.

Continuing the conversation, my cousin observed that the Kane-Two Mile project was a huge undertaking for a small conservation organization like the Trust. He asked me how the organization might be changed as a consequence. I responded that I thought the ranch acquisitions would probably result in additions to staffing and budget levels, but the Trust's fundamental organizational values and basic approach to its conservation work would not change.

The Trust began twenty years ago with a part-time staff member, no office, and a minimal budget. The early days saw a focus on Grand Canyon National Park and Colorado River issues, with advocacy, education, lobbying, and sometimes litigation as the principal conservation tools. Over time the Trust has matured into a respected and effective regional conservation organization with an influential and politically astute national board, a skilled and dedicated staff, a broad array of programs, and an impressive record of victories for the resources of the Colorado Plateau.

Two important principles have been developed along the way. First, the Trust practices community based conservation. Rather than working on issues in the abstract, we cultivate and develop relationships with the peoples and cultures of the Colorado Plateau, and we take local communities and economies into consideration as we go about our conservation work. Second, we are committed to science-based conservation. On any given issue, the Trust uses the best science to inform its decision-making.

The Kane-Two Mile ranch project represents a significant opportunity for the Trust to apply these principles. Operating the ranch and carrying out conservation and restoration work will require building constructive and cooperative relationships with both the federal land management agencies and the communities surrounding the ranches. We will also need to be mindful of the views of the Kaibab-Paiute community. We will be better able to achieve our conservation goals by working within the context of the area's communities.

Likewise, the ranch program will require us to continue to develop and expand our use of science-based decision-making. Baseline assessment of soil and vegetation conditions along with intensive monitoring will guide our efforts to restore rangelands and riparian areas. Solid science will allow the Trust to command the facts of any discussion of resources on the ranches.

In summary, the Kane and Two Mile ranches will allow the Grand Canyon Trust to practice our unique brand of community and science-based conservation on the ground and over a vast landscape squarely in the middle of our region. In doing so, the Trust will be a stronger and more effective steward of Colorado Plateau resources.

Kane-Two Mile Conservation Project Attracts Wyoming Rancher

-by John Heyneman

I first read about the purchase of the Kane and Two Mile Ranches by the Grand Canyon Trust and The Conservation Fund in the summer of 2004 in *High Country News*. It was also my first exposure to the Trust. I was immediately intrigued by the idea of a

conservation group buying a working ranch and I saw an opportunity not only to become involved in a conservation project of significant scale, but also an opportunity to grow professionally, develop a new skill set, and broaden my knowledge of running cattle on Western lands.

The Kane-Two Mile project presents a remarkable chance to run a cattle ranch without the restraints of traditional agriculture operations. Ranching with conservation as the primary consideration is an exciting concept that will undoubtedly present difficulties and challenge me to think outside a traditional agriculture mindset, but it is this challenge that interests me. I have spent the last seven years in Wyoming working on one of the largest agriculture operations in the country; the Kane-Two Mile project is an opportunity to work on one of the largest conservation efforts in the country.

I have always been interested in agriculture and environmentalism. I grew up on a small cattle operation in Montana, studied agricultural politics in college, worked on agricultural operations in Brazil and Venezuela after college, and later completed a graduate degree examining impacts of grazing practices on soil properties.

On the Wyoming ranch I led a number of conservation projects, but conservation



was always a secondary consideration that had to fit around the cattle operation. While this situation is typical of most ranches, I believe as land in the west continues to change hands, conservation will become an ever higher priority. Ranchers, especially

those operating on public lands, will work under increased scrutiny and we must increase our understanding of natural systems. I believe our professional future depends on recognizing a new set of considerations and learning new criteria to guide our management decisions.

Working for a conservation organization will give me a jumpstart on that learning curve. I believe the Kane-Two Mile project is a tremendous opportunity to learn more about how ranching can be done in concert with natural systems. I look forward to utilizing the Trust's unique combination of science, collaboration, and other resources to create a ranch plan that addresses many of the concerns regarding livestock grazing in arid landscapes.

I am now on the ground and starting to learn my way around the ranch. My family and I are thrilled to be in Flagstaff and looking forward to learning about a new landscape. My wife, Arin Waddell—an artist—is looking forward to meeting the art community. We are getting settled and enjoying it. Living in a forest on a plateau is a dramatic change from the Wyoming foothills. It puzzles our two young children, but I am confident they will grow to appreciate trees in the foreground rather than mountains on the horizon.

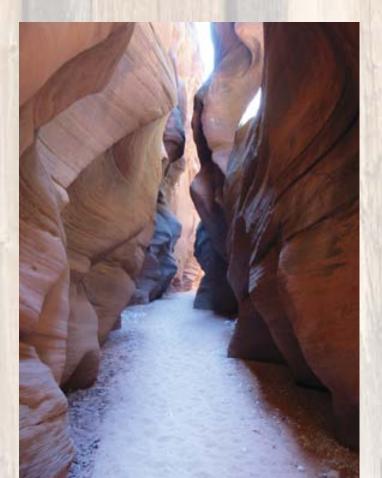
The Many Splendors of Kane and Vi



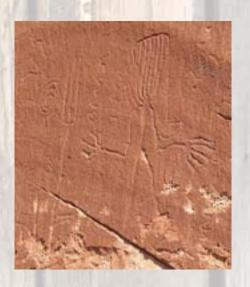
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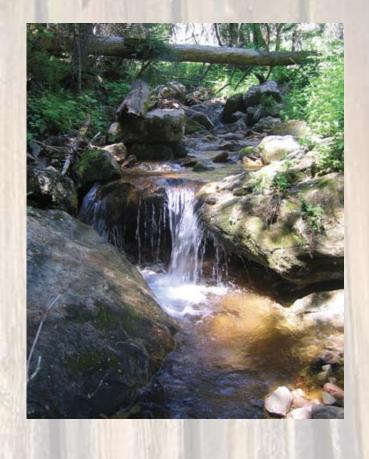




Do Mile Ranches

of the Kane-Two Mile ranch project will entific foundation, patience, persistence, of humility.



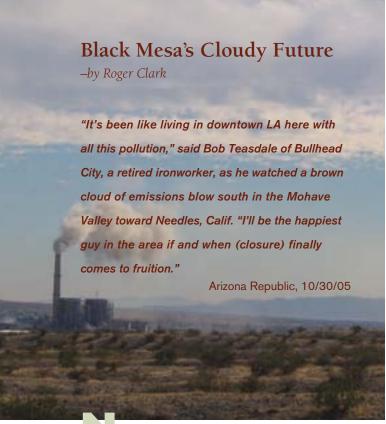


"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

-Aldo Leopold







ews reports are dire. Mohave Generating Station shut down at year's end. Peabody Coal issued layoff notices to 127 mine workers. Tribal leaders warn of an economic disaster. In tears, a single mom employed at Black Mesa Mine for 28 years asks: "Where can I get a good paying job?"

I'm approaching Kayenta, Arizona in a late October thunderstorm, driving south across the Navajo Nation. Black Mesa looms over my left shoulder, where the mine pumps coal through a 273-mile slurry line to Laughlin, Nevada where Mohave is located. To my right, Monument Valley rises like a John Ford movie set. My mind is reeling with contradictions.

Cheap electricity, produced by mining and burning tribally owned coal, has fueled booming southwestern economies for decades. It powers pumps that lift water from the Colorado River to desert golf courses in faraway cities, but the high-voltage transmission lines that crisscross the reservation rarely service nearby Navajo and Hopi homes or businesses.

Tribal benefits include nearly \$20 million in annual coal royalties that fund government and social services and the donation of coal by Peabody for home heating and cooking. In addition, mineworkers' wages support dozens of families who live in a region where chronic unemployment exceeds 40 percent.

On the downside, the mine sucks billions of gallons of groundwater to move coal to Mohave while showering shareholders with billions of dollars in profits. In

return, the plant illegally spews billions of pounds of pollutants downwind toward Black Mesa, where springs fed by groundwater are drying up and well contaminants are rising.

Competing thoughts about prosperity and pollution collide with the prospect of people being forced out of work. Has it really boiled down to jobs versus the environment in this landscape romanticized by Hollywood westerns?

Six years ago, Grand Canyon Trust helped negotiate a court-ordered settlement requiring Mohave Generating Station to install pollution controls by December 31, 2005 or shut down. Our lawsuit alleged that the coal-fired power plant averaged 80,000 emission limit violations per year between 1993 and 1998. Mohave owners opted to negotiate a settlement rather than risk facing fines amounting to a maximum of \$27,500 per violation, a potential liability totaling \$10 billion.

Our negotiations considered that it could take several years to renegotiate coal leases expiring at the end of 2005. The tribes also decided that an alternate source of water must be developed to supply the coal slurry line. Deliberations began in earnest only about two years ago. But, to date, they have yet to secure coal and water supplies beyond the end of this year.

The Grand Canyon Trust is actively pursuing renewable energy projects to help replace jobs and revenues lost when Mohave shuts. In contrast, Mohave's owners stand to make at least \$40 million in windfall profits by selling "credits" worth \$800 a ton for each of the 50,000 tons of illegal sulfur emissions no longer emitted every year.

We are developing strategies to redirect those revenues to the tribes because we believe fairness dictates that those who are polluting the air without penalty should not be allowed to profit from those illegal acts when they stop polluting. Instead, those revenues should help finance the tribes' transition to a more economically sustainable future.

Suddenly a rainbow appears in my rearview mirror, arcing over a towering monument while a dense storm darkens my view of Black Mesa ahead. Who knows what will emerge on the other side?

This update was written in late 2005. For a current status of Mohave Generating Station and related restitution efforts, please visit our website at www.grandcanyontrust.org.

Bringing Beavers and Bighorn Sheep Back Home

-by Mary O'Brien, GCT consultant

eavers, biological crusts, Bonneville cutthroat trout, and bighorn sheep don't come easy to southern Utah's national forests. The deep canyons, steep slopes and high plateaus of the Dixie, Fishlake, and Manti-La Sal forests have been and continue to be regarded first and foremost as a stage on which industrious humans work and play hard. The current Administration only entrenches these habits. Sheep and cattle grazing are nearly ubiquitous; off-road vehicle use is proliferating; and applications for oil, gas, and coal mining exploration, leasing and mining are exploding. Meanwhile, the truly unique promise of these mountains, their vast variety of plants and animals, is at risk under these Forests' current management.

Beavers—premier agents of above- and belowground water storage, fisheries enhancement, duck pond and meadow creation—need to eat nearby willows and cottonwoods. But cattle eat those same willows. Bonneville cutthroat trout—descendents of Ice Age Lake Bonneville and once thought to be extinct in pure form—need cool water; stable banks; minimal stream sediment; and absence of rainbow trout roommates. But anglers and agencies happy with exotic fish, streambank-busting livestock and recreationists, and people capturing instream flows make recovery tough for this native salmonid. Biological soil crusts—erosion-inhibiting, nutrient-cycling soil skins of algae, lichen, bacteria, and moss—die quickly under heavy tires, hooves, or too many boots.

Bighorn sheep—exiled kings of the steepest, highest mountains in these forests—contract mass, fatal pneumonia when domestic sheep or goats graze within nine miles.

If these and the other native species of these Forests are to reclaim their home, much has to change. Enter Grand Canyon Trust with its mission to protect the Colorado Plateau's diversity of plants and animals. The Trust is a co-leader of the 16-organization Three Forests Coalition, devoted to helping the Forest Service and Utahns understand, love, and sustain the three southern Utah forests' native plants and animals.

The Coalition's basic platform is the Sustainable Multiple Use Alternative developed in 2004. We adapt this alternative and propose it in numerous planning venues—from Forest Plan revisions to individual project plans. This involves both on-ground collaboration



Beaver dam on Tasha Creek, Fishlake National Forest, Utah.

with the Forests' managers and state residents and potential challenges to Forest Service decisions. A sample of Coalition efforts includes the following:

- The Fishlake Forest is proposing to bless dozens of off-road vehicle routes that have been created willynilly through roadless areas and sensitive native species habitat. The Coalition has brought to Forest staff an ORV management proposal that includes an excellent database and photos of indiscriminate routes.
- Some members of the Coalition will be challenging a 31-allotment Wasatch Plateau sheep term grazing permit decision. The Manti-La Sal Forest's decision to continue current grazing was made without meaningfully considering our practical Sustainable Multiple Use Alternative, as legally required.
- We are proposing multi-stakeholder collaboration with the Dixie and Fishlake NF around specific aspen treatments, restoration of beaver in a limited number of streams, and monitoring of one livestock allotment throughout one year. We are also proposing collaborative design of their planned Forest monitoring scheme called an "EMS" (Environmental Management System).
- We are developing "Strategic Watching and Tallying" Teams of volunteers, that will document Forest conditions relevant to Forest decisions.

It's going to be a long road back to biological diversity, but the native plants and wildlife of southern Utah's three national forests are behind the journey, all the way.

Plateau Journey Reveals Vast Array of Plants and Animals

-by Ethan Aumack



Imagine for a moment

that you have partnered with Michael Fay to undertake an intriguing survey project. Fay is a scientist, adventurer, and ardent conservationist best known for his "mega-transect" traverse across the heart of the African continent. In his traverse, Fay's goal was elegantly simple: to "census" the Congo by crossing it—one end to another in a straight line—and to record his observations of animals, plants, land, and climate in great detail. Imagine then that you are on your own mega-transect, striking out across the Colorado Plateau. Your goal on this journey: to better understand and document special places, biological diversity patterns, and some of the looming threats to that diversity across the Plateau.

You start your journey on the Colorado Plateau's southern rim just above the Verde Valley in Arizona, heading directly towards the canyon country of southern Utah and the northern edge of the Plateau.

JOURNAL ENTRY: SEPTEMBER 3, 2005

We wait expectantly to start the trip tomorrow. Our packs are full with camping equipment, GPS units, cameras, clipboards, measuring tapes, and food and water. We know not what to expect on our journey, though we are fully aware that the Plateau is a very special place. We know from reading in journal articles and books that the Colorado Plateau, 1 of 110 defined North American ecoregions, ranks in the top three for endemic species (those native to the Plateau and nowhere else), the top five for overall biodiversity, and the top five in terms of diversity of plants, butterflies, tiger beetles, and mammals. We know that these amazingly high rates of biodiversity and endemism are caused by the Plateau's broad elevational diversity, dramatic topographic roughness supporting sky islands like the Kaibab Plateau in many places, and isolation of smaller habitats throughout. We know that these isolated habitats, beautiful and often imperiled, support the evolution of unique plant and animal communities, and are critically important in supporting the evolution of new species—though we don't know how and when they will cross our path.



JOURNAL ENTRY: SEPTEMBER 4, 2005

As we took a straight-line course towards the San Francisco Peaks this morning we headed north, picking our contour lines carefully, and hiking through one of many small, largely shaded, and cool canyons dissecting the edge of the Plateau. In that canyon we found a "relic" patch of spruce-fir forest—a stranded and somewhat lonely survivor of the Pleistocene. Standing beneath a towering Engelmann spruce tree, I wondered at the awesome passage of time—extending billions of years beyond the Pleistocene—that has carved the Plateau we know today. Rising over the southern lip of the Plateau, we crossed through vast reaches of ponderosa pine forests, passing occasional, majestic "yellow belly" old-growth ponderosa pine trees, surrounded by vibrant communities of native grasses and herbs with fantastic names such as mountain muhly, squirreltail, and beardlip penstemon.



JOURNAL ENTRY: SEPTEMBER 12, 2005

We have walked for days through ponderosa pine forests blanketing the Mogollon Rim. Large "old growth" trees have been very sparse, and "dog-hair thickets" prevalent. A tremendous diversity of plant species exist in the understory of these forests, and wildlife species, from northern goshawks to Mexican spotted owls to tassel-eared squirrels make use of the forest canopy. Moist and earthy aspen stands occur in small canyons and on the slopes of the San Francisco Peaks. An amazing diversity of insects and birds seems to emanate from these aspen into the surrounding ponderosa pine forest. We have noted the conspicuous absence of fire scars around tree trunks and have come to better understand the role natural fire plays in thinning small trees, regenerating aspen, maintaining diversity on the forest floor, in the forest canopy, and between forest types across the southern Colorado Plateau.



JOURNAL ENTRY: SEPTEMBER 15, 2005

With aching legs and burning lungs, we scaled the south slopes of the San Francisco Peaks today. Ascending through spruce-fir forests, montane meadows, and ancient bristlecone pines, we envisioned the corridors required by black bear, elk, and deer as they descend off the mountain, past ever-growing Flagstaff, to their winter range far below and beyond the horizon. We recorded the presence today of the San Francisco Peaks groundsel—a small flash of color amidst a sea of black volcanic rock. Clinging to life among these high elevation rocks, we wondered what will become of the plant here atop the Peaks in a time of global warming and volatile climate change.

JOURNAL ENTRY: SEPTEMBER 25, 2005

Descending off the north side of the Peaks, we saw lush forests dissolve into pinyon-juniper tablelands, which in turn faded into vast dry grasslands pockmarked by volcanic cones and young lava flows covering much of the Coconino Plateau. The dramatic gouge known as the Grand Canyon seemed to mock the earth's attempts at continuous curvature on the far horizon. After hiking across the Coconino Plateau, we entered a world of outrageous proportions. Dizzying heights abruptly halted our journey at the south rim of the Grand Canyon. Various hues of red, grey, pink, and orange streak the canyon walls. As we descended into the Canyon, these brilliant skirts of color were given life by bighorn sheep, banana yucca, and Indian rice grass—among hundreds of other species. As we crossed the Colorado River near Phantom Ranch, a huge shadow revealed a soaring California Condor scouting a possible meal.



You might arrive at Fire Point, hanging above the North Rim of the Grand Canyon, in mid-October after traversing the Grand Canyon, south to north. Looking back across the canyon to the purple and white-tinged San Francisco Peaks on the south horizon, and looking north to your remaining journey through the Grand Staircase-Escalante National Monument, across the Aquarius Plateau, and over the Uinta Mountains far beyond, you might wonder at the ultimate value of your effort. And, you might come to similar conclusions as Michael Fay: That the record of such a trip might inspire many to care about a special place and its native inhabitants. And that your accounts would serve as a bookmark in time such that your journal could be read by great-grandchildren 100 years from now, much as you have read John Wesley Powell's accounts of his journey down the Colorado River. The ultimate value of your travels, however, would rest upon the hope that your accounts of this place would not serve as a testament to the ravages of exploitation of human indifference to the rich natural heritage of the Colorado Plateau. Rather, that your path could be retraced and that, as a result of visionary stewardship, future surveyors would find this land healthier, wilder, and more whole than during your travels.





Honoring Tradition and Promoting Commerce in Native America

–by Tony Skrelunas

Navajo Reservation, I always looked forward to traveling to the Tonalea Trading Post. I remember that my great grandparents did also. We motored down about thirty miles of dirt road passing through the juniper and pinyon trees that blanket the southern side of Big Mountain and into the prairie grass and corn fields of Tonalea. Along the way, we greeted people traveling on horseback, on foot, or in pickup trucks journeying to and from the store. Near the post a small pond surrounded by grass allowed horses to drink.

The post's natural landscape of hills and cotton-wood trees invited people to gather, socialize, cook and picnic, and catch up on the news. I couldn't wait to meet up with my cousins, devour sweets, and play on the trees and nearby rock cliffs. My grandma heard the latest gossip and the elders talked about an upcoming ceremony, wedding, Kinaalda, or even a camp meeting. Folks conversed amiably and lined up help with planting, sheep shearing, or hogan building.

Walking into the trading post I was awestruck—the smell of the wood floor and the sight of fine goods such as saddles, cooking utensils, and blankets hanging from

the ceiling of a store that was in essence "Navajo." The store met peoples' basic needs and gave marketing opportunities to native artisans such as my great-grandmother who wove Navajo rugs. In addition, in-store pawn and credit were very useful services, which, if not available, might have caused my family to go hungry many times.

In the 1970s, Tuba City's first modern shopping center was built, its vast variety of goods initially attracting many people. But dollars started leaving the reservation when towns bordering Navajo and Hopi lands developed shopping centers as well. Competition became more keen when a regional mall and Wal-Mart opened in Flagstaff taking retail patrons even farther off the reservation and into town. Similar development has occurred in Gallup, Farmington, Winslow, and Page.

The Tribes have been unable to respond well to border town competition. The obvious reasons are low land costs, tax rebates and other incentives put forth by adjacent municipalities, timely planning and zoning decisions regarding land use, availability of infrastructure, and vibrant stores with a variety of tenants offering products and services needed and demanded

by consumers. Tribes also failed to recognize the increased competition, and therefore did not counter with new competitive strategies. Instead, tribes got comfortable with their shopping centers and sat on their accomplishments.

The foundation of Native society, the elders, still value the old traditions and the things that made the Tonalea Trading Post a gathering place for all ages. Adults want a good shopping mix combined with a nice place to enjoy a relaxing dinner while perhaps watching a sporting event—all while the children play. Visitors want to experience the local culture and learn about history.

Sadly, few of the values celebrated in the Tonalea Trading Post are visible within current reservation shopping centers. I can only imagine what it would be like to travel to one of our centers with my great-grandmother today. Where would we rest before our long drive home? What if we showed up with a rug for sale or needed credit? Where would children play? Where could we sit and visit with friends and relatives? Obviously, we missed something very basic as we assimilated our culture into the modern world.

The state of the Navajo and Hopi economies is alarming. With unemployment rates of 40%, too much dependence on coal mining revenues, and leakage of 71% of retail revenues and 93% of tourism revenues off reservation, the need for an aggressively competitive strategy is paramount. Quantitative research recently conducted indicates total personal income earned annually within the Navajo Nation is \$1.2 billion. Of this, only \$348 million is spent on the reservation while \$880 million, or 71%, is spent off it. This causes lost job and business opportunities, lost sales tax revenues, limits funding for local schools, and diminishes the quality of life for Navajo and Hopi people.

The Chapters and Villages have some of the tools needed to be competitive—the most important being proximity to the market. They can be partners in identifying, building and expanding retail opportunities. One good starting point is informal surveys—simply asking our children and young adults what their shopping preferences are. But we must understand that meeting the needs of Navajo and Hopi consumers will require a large investment. For example, it will take over \$4 million to expand, upgrade, and create a truly

attractive retail and service mix that includes the cultural elements described for the Tuba City Shopping Center. It will take an additional \$500,000 per year to keep it fresh and ahead of the competition.

To secure this level of financing, Chapters, Villages, and businesses need to be highly creative and flexible. Local Governance Act Chapters can create revenue and enter into business ownership ventures. Those Chapters might consider creating a business entity to joint venture with developers. Such ventures not only provide jobs and tribal revenue from business profits, but also create additional sales tax revenue for Chapter governments. A Local Governance Chapter can create a special tax district for a center and secure financing by pledging a fixed percentage of the newly generated tax revenue for debt service. Collaboration between tribal governments, enterprises and developers, and Chapters and Villages is essential to identify other viable strategies.

The people and leaders of the Navajo and Hopi Tribes must find ways to diversify tribal economies and end dependence on coal mines and power plants by sitting down with local leaders and developing a mutually beneficial strategy. Absent new ideas, our future will be forever locked in the present.

To honor the past, we must find ways to integrate traditional values into modern shopping centers. Landscaped picnic areas, shade ramadas on grassy playgrounds, traditional gardens, a Hogan or pueblo style visitor center, and an amphitheater or a vendor village are all design concepts worthy of consideration. Local school students might jump at the opportunity to help design and maintain these community spaces, in turn creating local pride.

Native culture also values "mother earth" and "father sky." Therefore it makes business sense to utilize energy efficient design and renewable energy technologies including solar and wind power. "Green businesses"—as they are known—are increasingly attractive to both native consumers and tourists.

Making this vision a reality will require assistance and support from the local Chapter and Village governments, business owners, consumers, tribal agencies, and a renewed entrepreneurial spirit from our people.

Working together we can make it happen.

This excerpt originally appeared in RezBiz.



If the state initiative titled "Conserving Arizona's Future" is approved by voters in November 2006 the ballot measure will:

- Save 694,000 acres of natural areas surrounding Arizona's state and national parks, monuments, and preserves for future generations
- Require state and local communities to cooperate in the planning of state trust lands and provide local authorities the power to limit and control development
- Protect and guarantee essential funding for Arizona public schools

Cherishing Arizona

A Feather's Touch Weighs Heavily on a Conservation Initiative

–by Nikolai Ramsey

A cherished memory can motivate a conservation effort.

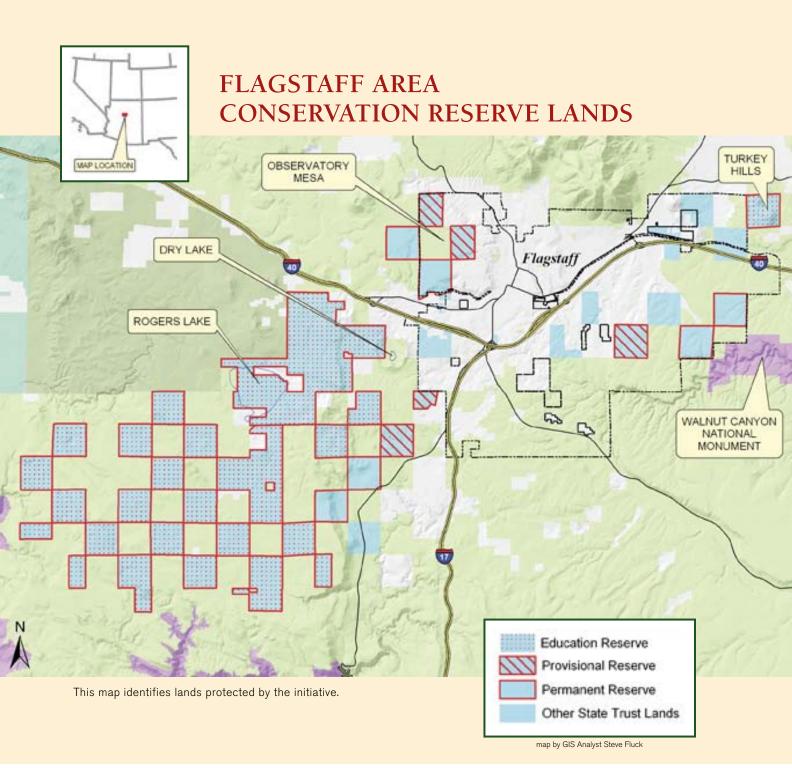
n June 12, 1999, I walked a path familiar to both me and Churchill, my beloved Boston Terrier; only on this day, the day of his death, I walked the path by myself. The trail climbs a ponderosa pine incline to the top of Observatory Mesa in Flagstaff, Arizona, where Churchill and I sometimes played and sometimes ate his favorite food, a can of tuna.

Observatory Mesa is a pedestal for a beautiful, spacious meadow with stunning views of the San Francisco Peaks. On this day, however, my eyes were downcast, full of tears, imagining my mischievous buddy dog running through the meadow as he had done many times in years past.

When I voiced my goodbye to Churchill, a raven appeared from the horizon, flying directly toward me, at the last moment shooting straight up overhead. I followed its flight and noticed a black feather falling from the sky that miraculously landed in my outstretched palm. The raven banked, coasted down behind me, and flew alongside my body, so close its outstretched wing actually touched my left ear. Off balance, I watched the raven land on a nearby tree limb, call out three times, and fly off out of sight.

Observatory Mesa is part of a package of Arizona state trust lands that might gain permanent protection from development if a state initiative—titled *Conserving Arizona's Future*—passes in November 2006. This initiative was created by a conservation-education coalition that includes the Sonoran Institute, The Nature Conservancy, Arizona Education Association, and Grand Canyon Trust.

The Trust worked with these and many other groups to complete a state trust land reform package beneficial to both conservation and education interests. The education community is excited about provisions that give them control over land dispositions and financial participation in larger developments. The conservation community is excited about the open space protection attending selected conservation lands.



Statewide there are 694,000 acres identified for conservation protection in the initiative. Lands protected in northern Arizona total over 62,000 acres, including lands south of Grand Canyon National Park and north of Wupatki National Monument. Also conserved are lands vulnerable to development around Flagstaff, including lands neighboring Dry Lake, Rogers Lake, Observatory Mesa, Walnut Canyon National Monument, and Turkey Hills.

The Grand Canyon Trust is working with Friends of Flagstaff's Future to gather signatures in Coconino County to help put the initiative on the ballot in November 2006. Conserving Arizona's Future offers a once-in-a-lifetime prospect of protecting perhaps half-a-billion dollars worth of state lands in the greater Grand Canyon region; it's a once-in-a-lifetime opportunity to conserve cherished state lands—including Observatory Mesa.

High Stakes for Arizona in Revised National Forest Plans –Taylor McKinnon

n 2006 the Apache-Sitgreaves, Coconino, and Kaibab National Forests begin revising their land and resource management plans, or "forest plans." Updated only once every 10 or 20 years, the management legacy of the revised national forest plans will involve determining the location, type, and intensity of land uses such as livestock grazing, logging, fire management, and recreation.

The new plans should focus on the region's most pressing need: Restoring fire-adapted ecosystems. After a century of fire-suppression, livestock grazing, and industrial logging, the region's expansive ponderosa forests are in a fire-starved peril. Within the next decade or two, fire needs to be returned to forests in a way that maximizes benefits while minimizing costs.

But this simple goal involves high stakes and complex challenges. Current forest plans usually prohibit managing natural fires, and in many cases managers and academics insist on thinning forests before using prescribed fire. Yet the scale of the problem far exceeds our ability to thin forests, a slow, expensive process. Reality holds that—excepting carefully prioritized treatments—forests will burn before they're thinned. In those cases our only choice is what type of fire that will be: One too severe to extinguish, or one that burns with more acceptable results.

There's promise in the latter scenario: Grand Canyon National Park has managed natural fires with "wildland fire use" plans for years. The Kaibab National Forest's wildland fire use program has seen success too, and the Gila National Forest in southwest New Mexico managed a natural fire exceeding 100,000 acres last summer. Across Arizona, agencies have used prescribed fires to reduce fuels where it is safe to do so without first thinning. And where thinning costs several hundred dollars per acre, prescribed fire costs as little as a hundred, and wildland fire use only around forty.

New forest plans must provide a framework to safely manage fire if they are to help restore fireadapted forests. That means zoning areas where natural fires can safely be managed to benefit forests (like in the backcountry), and where they should be suppressed and only prescribed fires should occur (near towns or fire-sensitive habitats). Zoning can then inform where limited acres of thinning can be leveraged to meet landscape fire management goals. By strategically placing wildland urban interface treatments along containment perimeters along uphill and downwind edges of wildland fire use zones, or in locations that impede crown fire spread over larger areas, treatments can help managers meet pre-determined fire management goals. Long term, this will mean fewer costly fires and more beneficial fires for our expansive ponderosa forests.

But the Bush Administration's new planning rule and budgets may complicate northern Arizona's forest revision plans. The new rule eliminates requirements to monitor and maintain viable populations of fish and wildlife, allows officials to reject the best available science, and was developed without oversight from a Committee of Scientists—a first in forest regulation planning history. Moreover, the new forest plan regulations eliminate enforceable standards and the requirement for full public and environmental review. The Administration emphasizes the importance of "up front collaboration" in the new planning process but shortchanges the funding needed for such collaboration.

As the budget-starved Forest Service relies more on outside support for collaboration, Grand Canyon Trust, working with Governor Napolitano's Forest Health Council, is developing a statewide restoration strategy that may help fill the gap. In cooperation with universities, agencies, scientists, and other stakeholders, this effort will use state-of-the-art computer mapping and modeling tools to propose far-reaching forest restoration, fire management, and community protection strategies for the state. This effort will provide broad-scale recommendations to the Forest Service in the revision process that will be scientifically rigorous, collaboratively developed, and in the best interest of the southern Colorado Plateau's communities, forests, and native plants and animals.

This winter the Trust bids farewell to Taylor McKinnon, our forest conservation director. His seven-year tenure involved leading programs to protect and restore Plateau forests—from community-based restoration to national policy advocacy. Taylor was appointed co-chair of Governor Napolitano's Forest Health Advisory Council from 2003-05 and served as a forest and wildfire policy advisor to the Western Governors' Association. His leadership includes service on the boards of directors for the Greater Flagstaff Forests Partnership and the American Lands Alliance in Washington, D.C.

A staunch advocate of strong national policies and community collaboration, Taylor will keep a hand in forest issues as he moves to Bluff, Utah, where he'll oversee his business, Wild Rivers Expeditions. He's pictured here with a semipalmated sandpiper on the arctic coast.



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The cover photo of this issue of the *Colorado Plateau Advocate* is the work of the Trust's own Rick Moore. As Director of the Kane and Two Mile Ranch program, Rick spends a great deal of time exploring the ranches and captured this remarkable image in the Vermilion Cliffs National Monument on the Two Mile Ranch.

Regular readers of the *Colorado Plateau Advocate* will notice this issue is the first in our history to be published completely in four-color format. Thanks to the wonders of advanced printing technology we are able to produce the magazine in four-color at only a slightly higher cost than the previous editions that combined a two and four-color format. The magazine continues to be published on environmentally friendly paper made with 100% recycled fiber, 50% post-consumer waste that is chlorine free.

We'd like to know what you think of the new look and feel of the magazine. Please send your comments to info@grandcanyontrust.org.

Mission

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.

Vision

We work toward a region where generations of people and all of nature can thrive in harmony. Our vision for the Colorado Plateau one hundred years from now is:

- A region still characterized by vast open spaces with restored, healthy ecosystems and habitat for all native plants and animals.
- A sustaining relationship between human communities and the natural environment.
- People living and visiting here who are willing and enthusiastic stewards of the region's natural resources and beauty.

Grand Canyon Trust

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