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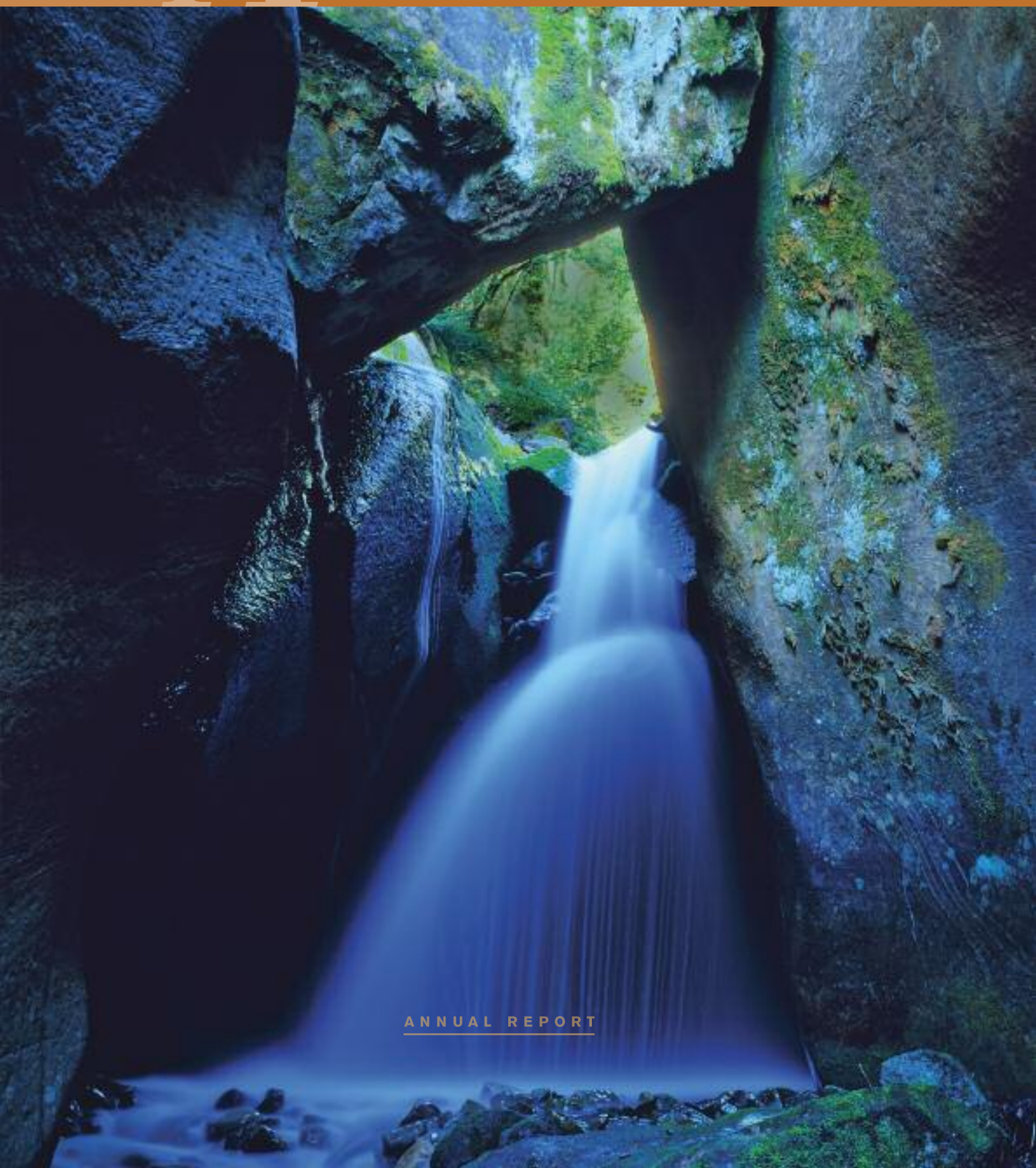
GRAND CANYON TRUST



ANNUAL REPORT

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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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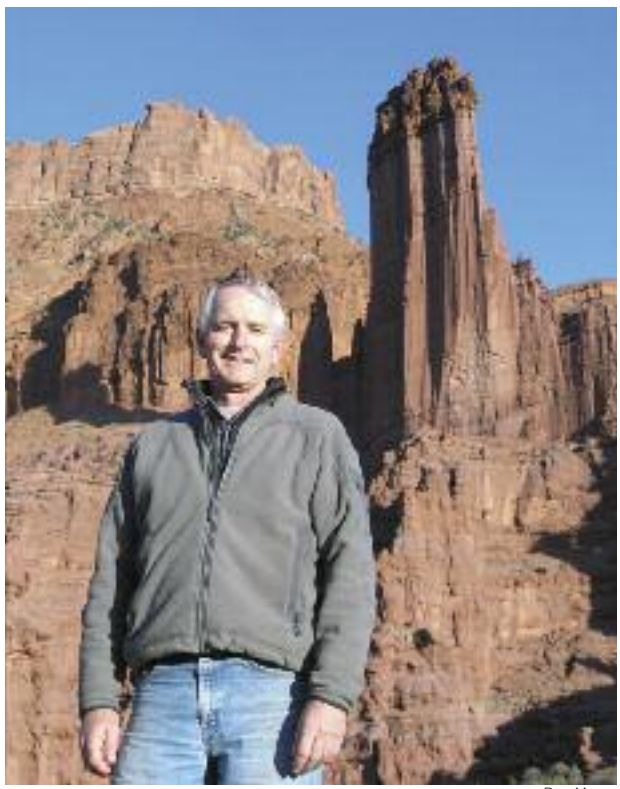
www.grandcanyontrust.org

LETTER FROM THE EXECUTIVE DIRECTOR

BILL HEDDEN



RICK MOORE

This morning my eldest daughter packed her belongings into her little car and left home for marriage and a new life in California, leaving her parents soggy with emotion and thinking about the hopes we cherish for our kids and the world they will live in. Life does not seem to get any more basic than that and yet I think all of our hopes for the future are in essential need of some nurturing right now. For myself, in a world headed toward nine billion people, I worry whether I have set my children up for heartbreak by instilling in them my love of truly wild places and wild animals. Will we manage to make room for all the other

One of Bill and Chloe's favorite walks is captured in Chloe's painting: Autumn in Castle Valley.

creatures on the crowded, stressed planet that is emerging? How do we feel about the world we are passing on, and what can we do to make it better? With my daughter launching her independent life, these common questions seem pressing.

Here I must confess that I am not much good at global thinking. I prefer problems at more approachable scales, which is probably why I have ended up leading a regional conservation organization. Our job is to keep sight of those obligations to the other creatures and to the future and to bring imagination to resolving the polarized ideological fights that otherwise leach away our belief that we can behave wisely or that nature can be healed. Fortunately, with the combined resources of the Grand Canyon Trust and our members, we can take on problems at scales that make a difference, sometimes coming up with solutions that are real cause for hope. This issue of the *Advocate* tells the stories of some of our major endeavors, explaining why the work is important for the future, and how we plan to get there. The stories are unvarnished, telling of the difficulties and failures along with the successes. I think of them as progress reports to our children.

Governor Brewer at Big Lake Re-Open House.
USFS/Apache-Sitgreaves NF

Leading the Way Towards Restored Forests in Arizona

by Jan Brewer, Governor

As Arizonans, we all share a common concern for the health of our forests and other natural resources. Unfortunately, it can be difficult to find common ground on issues as hotly-debated as natural resource management, public lands disposition and conservation. Some conflicts are bound by decades of disagreement; others simply reflect a clash of values. But one issue upon which nearly everyone can agree is the need for forest restoration.

The one million acres of forest that Arizona lost to wildfire this year stands as evidence of the need for more robust resource management. We must speak with a unified voice and unwavering commitment. Quite simply, the future of our forests is in our hands. Lives and property are at stake.

I have prioritized forest health from the onset of my administration. Poorly-managed forests not only threaten homes, property and watersheds—they diminish the welfare of Arizona's economy on a grand scale. Conversely, healthy forests promise clean water, jobs, personal safety and secure wildlife habitat. This summer's devastating Wallow Fire—Arizona's largest blaze on record—clearly and painfully demonstrated what can happen when tinder dry conditions and an overgrown forest converge.

For many years, hopes of restoring health to our forests have been dim. Progress has been hindered by acrimony between stakeholders, a gridlocked planning process mismatched to the scale of wildfires, and the lack of an economic engine capable of paying for restoration.

Thanks to key leadership provided by the Forest Health Council and Grand Canyon Trust, each of these areas has begun to see great improvement. We now have unprecedented agreement on how to proceed with landscape-scale restoration. The U.S. Forest Service is committed to putting words into action through landscape-scale planning. More importantly, we have appropriately-scaled industries that are prepared to implement restoration efforts while generating revenues and jobs for rural Arizona. These factors converge in the Four Forest Restoration Initiative (4FRI)—a key priority for Arizona and the nation.

We now have the pieces in place to address one of Arizona's most vexing resource management challenges. We can—and absolutely must—implement these changes to ensure Arizona is protected from massive future wildfires. Change must be implemented immediately.

The change envisioned by 4FRI is unsettling to those accustomed to the status quo. Moving forward requires creativity, resolve and strong leadership. It requires us to embrace agreement when, historically, we have been plagued by disagreement. It requires us to find and embrace new solutions that are uniquely Arizonan.

Consensus on every natural resource debate may not be possible. With forest restoration, however, we must seize the moment. With memories of the Wallow Fire and this summer's other blazes still fresh, we must embrace our shared stake in creating woodlands that are healthier, more economically viable and less vulnerable to devastating wildfires.

I appreciate the Grand Canyon Trust's leadership in 4FRI. I also offer my administration's full endorsement of and support for 4FRI, and look forward to working with the stakeholders as we collectively and ambitiously lead the way toward improved forest health across Arizona.

State of the Navajo Green Economy Commission

by Tony Skrelunas

Native Americans show support for green jobs outside Council chamber.

When the Navajo Nation Council first recognized the green economic opportunities popping up around the United States, they were initially convinced that those opportunities would take years to develop on the Navajo Nation. But in the summer of 2009, the Navajo Nation Council made a commitment to a long-term vision of a green economy on the Nation and passed the Navajo Green Economy Commission Act and Fund Act.

For the past two years the Commissioners have been volunteering their time, meeting regularly with division directors and both legislative and executive staff to create goals and partnerships that will bring green projects to the Nation. Their lobbying efforts and diligence in pushing forward green economy strategies led to the 22nd Navajo Nation Council passing an operating budget of $353,254 for the Navajo Green Economy Commission for the 2012 fiscal year. However, our enthusiasm waned when we received notification in early September that Navajo Nation President Shelly vetoed the budget for the Commission.

In a letter to Navajo Nation Council Speaker Johnny Naize, President Shelly stated the original intent of the Commission was to seek outside grants for its operations. At the Grand Canyon Trust, we have been assisting the Commission with strategy and grant writing. Many of the grant makers we work with have stated they want to see a significant financial commitment and strategy from the Navajo Nation before they commit to any financial backing. When the budget for the Commission was passed, we saw it as critical to leverage additional grants from outside sources. The funding would have established an office with a director, staff, and budget for strategic planning and research for green projects across Navajoland, and would have been evidence that the Nation is committed to creating a sustainable economy.

Because of President Shelly's decision to veto the Commission's budget, the legislation continues to remain an unfunded mandate within the Navajo Nation Code. What made the two pieces of legislation unique is they were supported by twenty-four chapter resolutions, and two agency council resolutions. Rarely do we ever see such overwhelming grassroots chapter support for legislation being passed at the central government level. Currently, the Commission members are working with legislative staff and the president's office to develop an alternative solution that would ensure funding for the office.

Although this is a setback, our leadership now recognizes the benefits of embracing a green economy on the Navajo Nation and we understand this is a major accomplishment in the body of work we have done over the years. Outside of the Commission, many Council members are actively championing several utility-scale and smaller renewable energy projects. Our organization will continue to support development of a green economy and will maintain our strong partnership with *Navajo Green Jobs* to create a green business incubator, provide community education and engagement, and build partnerships to create green curriculum in Navajo schools and universities. With the work and partnerships we have secured over the years, we are optimistic that Navajo Nation leaders will fund the Commission.

Ponderosa pine forest before and after restoration treatment.
SW Region, Kaibab NF

Four Forest Restoration Initiative
Too Big to Fail or Too Big to Succeed?

by Marcus Selig

The Four Forest Restoration Initiative (4FRI) is "BIG." The landscape-scale effort aims to implement forest restoration treatments across 2.4 million acres of northern Arizona's ponderosa pine forests over a twenty-year period, making it the largest forest restoration project ever attempted. The project is led by an active stakeholder group comprised of over forty different organizations, including the Grand Canyon Trust. It enjoys support from all northern Arizona municipalities, all Arizona counties, the state legislature, former and current governors, and Arizona's congressional delegation. Last year, the 4FRI was selected by the U.S. Department of Agriculture's Collaborative Forest Landscape Restoration Program as the nation's top priority forest restoration project and it regularly receives attention from the Chief of the Forest Service and other Washington and regional Forest Service staff.

Never before has the Forest Service attempted project planning at this scale or collaborated with such a diverse collection of stakeholders.

The pace and scale of 4FRI, the political support it enjoys, and the project's national profile were not created by accident. Indeed, the Trust has been working with stakeholders for over a decade to develop a large-scale solution to the issues facing Arizona's forests. We have also invested heavily in developing the social support needed to push the solution forward. The Trust believes that 4FRI's size is crucial to its success. Only by working at such large scales will we be able to accomplish restoration at a pace that competes with the catastrophic wildfires experienced in the Southwest over the last decade. Only by working at such large scales can we create the sustainable and dependable wood supply needed to establish a wood products industry that can offset treatment costs. Only with 4FRI's size and strong social support will the project survive the notoriously short attention spans of Washington policymakers.

We have succeeded at making 4FRI "BIG," and its size gives the appearance that it is "too big to fail." However, its size could be a double-edged sword. Because of its size and the attention it captures, 4FRI has become "BIG" in another sense—the project will have big consequences that challenge the status quo. In many respects 4FRI is pushing the bounds of traditional forest restoration projects and overall federal land management practices, forcing many stakeholders into an uncomfortable place. Never before has the Forest Service attempted project planning at this scale or collaborated with such a diverse collection of stakeholders. Never before have environmental groups worked so closely with the Forest Service and industry representatives to effect such significant on-the-ground change. Never before has a forest restoration project had the potential to alter the ecology of an entire region.

Kaibab NF

It is uncertain whether 4FRI stakeholders will reap rewards or suffer wrath for supporting and advancing this large-scale, first-of-its-kind project. But all are aware that regardless of 4FRI's success or failure, its consequences will have implications for almost all future large-scale forest management actions. This knowledge causes reticence among the project's stakeholders. That reticence creates significant obstacles that could challenge 4FRI's success.

The collaborative nature of 4FRI represents a dramatic shift from the Forest Service's "we know best" management policies. By collaborating with university scientists, conservation groups, local governments, and industry, the Forest Service is opening the "black box" in which it has historically made land management decisions. This acknowledgment that the solution to Arizona's forest health problems lies in the collective values and ideas of various organizations is no doubt a giant, scary step for an agency that has traditionally enjoyed significant discretion in its decision-making process. This change in agency practice, compounded by the size of the project and the national attention it receives, understandably causes reluctance in the Forest Service officials that are responsible for planning and implementing 4FRI. How does an agency employee walk the line between necessarily sharing their decision space and protecting a tightly held institutional legacy? 4FRI asks that question of Forest Service staff every day.

Never before have environmental groups worked so closely with the Forest Service and industry representatives to effect such significant on-the-ground change.

The Forest Service is not alone in the quandaries created by 4FRI. The "timber wars" of the 1990s forced many of the Southwest's conservation groups to assume the role of "watchdogs" over national forest management. Continued success challenging the Forest Service and other land management agencies provided an effective means for achieving the goals of these groups' constituents. However, as 4FRI works to develop collaborative solutions to forest management issues, many of these groups are being asked to walk away from historically bright lines and the use of relatively successful conservation tools (i.e., litigation and appeal). Moreover, these conservation groups are being asked to trust the agencies and industries they have battled for decades with decisions that will affect a massive landscape. How do you convince your conservation-minded constituents to trust an agency and process that they have invested so much in fighting? 4FRI asks this question of many of its stakeholders every day.

Never before has a forest restoration project had the potential to alter the ecology of an entire region.

The scientific community is also not free of 4FRI's predicaments. For years, researchers have studied southwestern ponderosa pine forests at small scales. These studies have provided the foundation of much of what we know about how restoration should occur. Although this information is critical, it has failed to address how these relationships may change as we apply our knowledge to larger landscapes. Much of what we consider to be the "best available science" may prove to be inadequate as we strive to achieve restoration across 2.4 million acres. How do you responsibly extrapolate an in-depth understanding of relatively small-scale ecological dynamics to an entire landscape? 4FRI asks this question of many of its stakeholders every day.

Yet, in the face of these seemingly unanswerable questions and under the critical eye of much of the nation's land-management community, 4FRI continues. In many circumstances, the challenges presented by 4FRI would make a project "too BIG to succeed;" however, the recognized need for 4FRI continues to drive its success. The Forest Service and other stakeholders continuously show a willingness to push the bounds of historic stances and alter their status quos because, as the Wallow Fire demonstrated this past summer, the consequences of 4FRI's failure are simply too big to accept.

A Partnership of Purpose

by David Nimkin, Senior Director–Southwest Region, National Parks Conservation Association

Five years ago, the National Parks Conservation Association (NPCA), a membership conservation organization with more than 600,000 members and supporters, re-established a regional presence in the Southwest. The Grand Canyon Trust has been and continues to be a critically important ally and partner in our purposeful and effective work protecting the Grand Canyon and the iconic landscapes of the Colorado Plateau.

As we approach the Centennial for our national parks in 2016, NPCA has catalyzed renewed attention to the role and renewal of vision for our national parks in their second century.

NPCA, one of America's venerable conservation organizations with a singular focus on the sustained health of our national park system, has been advocating for their protection and continued enjoyment by visitors for more than ninety years. Created in 1919 by our nation's first National Park Service director, Stephen Mather, to provide an independent voice for park protection, expansion and new park creation, NPCA has advanced the inspiring ideals of our national parks through its advocacy efforts. As we approach the Centennial for our national parks in 2016, NPCA has catalyzed renewed attention to the role and renewal of vision for our national parks in their second century. With its regional headquarters in Salt Lake City, and field offices in Tucson and Denver, NPCA's southwest region is deeply vested in our advocacy for the seventy-four national park units in Arizona, Colorado, New Mexico and Utah.

The heart of this region is the Colorado Plateau. Our national parks, monuments, and historic sites are extraordinary, sacred and, unfortunately, at risk. The threats to these special places are significant and complicated. They include the forces and impacts of climate change, air pollution from massive coal-fired power plants that obscures vistas and night skies, unbridled energy development and resource extraction adjacent to protected areas, habitat fragmentation, and the proliferation of invasive species. The defining force of the extraordinary landscapes and parks on the Colorado Plateau is the Colorado River. Managed, harnessed, and controlled to serve our multiple human needs, we advocate, in conjunction with the Grand Canyon Trust, for river management policies and decisions that value and reinforce the ecological integrity of the Grand Canyon and the eight other national park units directly defined by the river.

The Grand Canyon Trust has been a singularly strong and consistent voice for the protection of the Grand Canyon through the prescribed adaptive management process. We are grateful and admire the steadfast commitment of the Trust to advance Grand Canyon resource requirements in the complicated and sometimes cumbersome process created by the Grand Canyon Protection Act and the Adaptive Management Work Group. We have joined with the Trust in advancing the need to apply what we have learned over the past dozen years from rigorous scientific inquiry in management choices that balance the legal commitments, tribal interests, and hydropower potential with real and sustained restoration of river habitats and beaches in the park. We are hopeful that the recent initiatives by the U.S. Department of Interior to support more frequent and timely high-flow releases from the Glen Canyon Dam, experiments that in the short-term have demonstrated substantial benefit, will ultimately result in a more natural deposition of sediment throughout the canyon.

Similarly, we have joined the Grand Canyon Trust in support of the Long-Term Experimental Management Plan now in preliminary stages under the co-management of the Bureau of Reclamation and the National Park Service. We are hopeful that this new process will facilitate more effective adaptive choices—seasonal and steady adjustments that can sustain the benefits achieved through more frequent high-flow releases. A great deal has been learned over the past decade or so, and we are determined to apply the best science to protecting the park resources.

As a direct result of our work with the Trust at the Grand Canyon, NPCA has initiated a basin-wide Colorado River campaign. We seek to leverage America's love for our national parks and their substantial economic value for the region to advocate for similar system-wide management choices that would have profound impacts on nine national park units from the Colorado River source at Rocky Mountain National Park to Lake Mead. Both lessons learned and the patient discipline demonstrated by the Grand Canyon Trust, our partner, will guide our work.

NPCA's partnership of purpose extends as well to our ongoing collaboration and advocacy for elimination of uranium mining from the Grand Canyon watershed, actions to support regional haze standards that can reduce noxious emissions from coal-fired power plants and efforts, at long last, to assure greater park authority in regulating air tours so more natural quiet can be restored at the Grand Canyon. And the Grand Canyon Trust, NPCA and others are also actively engaged in a campaign to protect the Greater Canyonlands region in Utah from multiple threats.

We are grateful for a partnership with the Grand Canyon Trust that is respectful, effective and honored.

Colorado River in Grand Canyon.
NPS/Grand Canyon NP

You can talk about the Grand Canyon, you can talk about Yellowstone, Yosemite, I'm biased, I'm not sure they compare with the Canyonlands.

–Stewart Udall

Consummate Canyonlands

by Laura Kamala

I was six years old and growing up in a New Jersey suburb when Canyonlands National Park was established in 1964. Years later I became acquainted with Bates Wilson, Stewart Udall, Ken Sleight and many others who were instrumental in protecting this part of the majestic landscape that ultimately became my adopted homeland. But the final boundary of Canyonlands National Park was a political settlement; far removed from the vision of Interior Secretary Udall to protect the entire Canyonlands Basin encompassing one million acres and an uncompromised watershed. When President Lyndon B. Johnson signed the public law creating Canyonlands NP it contained 257,400 acres, a little over one quarter of its original size. In 1971, with the addition of the Maze district, also a compromised boundary, the park increased in size to its current 337,540 acres. Fifty years after the initial effort to create Canyonlands National Park began; the same arguments are now being used to prevent protection of the lands that were removed from the original proposal. But even bedrock can crack. The question remains open regarding what former Canyonlands Superintendent Walt Dabney calls "Canyonlands Completion."

The National Park Service's first survey of southern Utah was in 1935 and included a broad look at the Canyonlands Basin, Glen Canyon, the Waterpocket Fold, Cataract Canyon and the Canyons of the San Juan River. The following year, the first Escalante National Monument proposal was introduced recognizing the extraordinary character of this immense, unimpaired landscape. It contained 6000 square miles and included the entire Greater Canyonlands region. This visionary concept was, not surprisingly, shot down in Utah but later followed by two more "modest" Escalante proposals encompassing 2,450 square miles or 4.5 million acres; one was promoted in 1940 by then Interior Secretary Harold Ickes. The grandeur of these proposals matched the living landscape yet no protective designations existed for the Greater Canyonlands Region when Bates Wilson arrived to work as Superintendent of Arches National Monument in 1949.

Bates' first backcountry pack trip into Canyonlands occurred in the spring of 1951 and he was awed by the country. He became the most dynamic proponent for creation of the park, leading numerous jeep tours into the area for government officials including Interior Secretary Udall. He eventually earned the title "Father of Canyonlands," and remained a passionate advocate for the region until his death in 1983. During the time Bates Wilson was still lobbying for Canyonlands, Stewart Udall had his own vision for the park while flying over the area in 1961 with Bureau of Reclamation chief Floyd Dominy. I heard Stewart recount that story at Grand View Point in 2006, when he came with his children and grandchildren to visit the place where he said his career as Interior Secretary began. Speaking before a small crowd of admirers, Stewart said Dominy offered him a ride back to Denver in his plane and enroute wanted to show him the site of his next big dam project just below the confluence of the Green and Colorado Rivers. Stewart looked down and said to himself, "goodness sake, that's a national park." The park proposal was in Bates Wilson's words "warmly debated" for a couple years over anti-federal feelings and the perception of negative economic impact.

In the 1980s, the National Parks Conservation Association, working with then Utah Congressman Wayne Owens (D-UT), proposed legislation adding

LEFT: Chesler Park in Canyonlands NP.
NPS/NEAL HERBERT
BELOW: Former Interior Secretary Stewart Udall (center) shares a moment with two other Canyonlands pioneers: Kent Frost (left) and Ken Sleight.
NPS/NEAL HERBERT

up to 750,000 acres to Canyonlands, which would create a park similar to what was originally conceived decades before. They were inspired to act in part by the Department of Energy's proposal to construct a nuclear waste repository in the national park borderlands. Six years of hard lobbying by NPS and others killed that ill-conceived plan but the park expansion bill failed too, lacking Utah delegation support.

In the late 1990s park Superintendent Walt Dabney introduced the Canyonlands Completion plan that would add 515,000 acres to the park. Increasing the park's size was not a numbers game, but what actually made sense in managing an entire hydrogeologic unit. Dabney's concept used watershed boundaries including side canyons and more of the Green River. Once again the reality of Utah politics crushed this vision.

I like to think about a time when Utah had Frank Moss, a progressive Democrat senator who was also instrumental in the creation of Canyonlands National Park. He served three terms before defeated by Orrin Hatch in 1976. Thirty-five years later Sen. Hatch (R-UT) continues to wage an all-out war against the Department of Interior along with his colleagues Rep. Rob Bishop (R-UT) and Sen. Mike Lee (R-UT). They proudly beat Interior Secretary Salazar's Wild Lands Policy insensate, introduced bills to render the Antiquities Act impotent, and joined Senator McCain (R-AZ) in sponsoring a bill to ensure uranium mining will continue at the Grand Canyon in spite of an Interior mining withdrawal. They would like to seize all federal lands in their borders and hand them over to the state of Utah. These elected officials do not collaborate, compromise or cooperate when it comes to finding answers to very complex issues associated with public lands management; in fact they are actively blocking those efforts in Utah counties.

Intractable Utah politics will not end the discussion on completing Canyonlands nor the campaign to protect the spectacular public lands that are at risk. The Grand Canyon Trust is producing a film to advocate for protection of the Greater Canyonlands Region that is currently threatened by large-scale industrial development; oil and gas drilling at the borders of Arches and Canyonlands National Parks, uranium and potash extraction, tar sands strip-mining in the Dirty Devil River country, and ubiquitous, unregulated off-road vehicle impacts. We are working to bring this wild landscape and the impending threats to its integrity to the attention of the Obama Administration.

Endnote: For a comprehensive history of Canyonlands National Park see *From Controversy to Compromise to Cooperation: The Administrative History of Canyonlands National Park* by Samuel J. Schmieding, Ph.D

NPS/Neal Herbert

Below me lay a weirdly beautiful landscape. A maze of tangled cliffs and canyons, serrated rock spires and turrets stretching westward as far as the eye could see into the setting sun. ...It is a land to dream over, for in some indefinable way it seems to present the story of creation...here the Creator had painted a vivid picture of time eternal that was good for man to see; a picture that has lived for centuries, and will live for countless more.

– John Riis, La Sal Forest Reserve Supervisor 1909
on first seeing the Canyonlands Basin

Tom Till

Tom Till

Beaver Restoration: Can We Afford Not To?

by Julia Haggerty, PhD, Policy Analyst with Headwaters Economics in Bozeman, Montana

A single beaver dam provides $2,200 per year in avoided dredging costs, $156 per year in avoided water acquisition costs, and $2,500 per year in riparian habitat values.

A large number of dam-building beaver in a watershed makes eminent economic sense. A recent study commissioned by the Grand Canyon Trust and conducted by the respected Portland, Oregon-based research firm, ECONorthwest, illustrates this.

The study, *The Economic Value of Beaver Ecosystem Services*, uses a detailed case study of the Escalante River basin in southern Utah to explore economic values associated with restoring healthy populations of beaver. In the study, economist Mark Buckley and his team set out to specify the numerous potential ecological impacts of beaver and identify those with benefits that could be quantified. Measuring just a fraction of the many ecosystem services identified with beavers and their dams, Buckley's report provides strong evidence that land managers and policy makers entrusted with the health of the Colorado Plateau's ecosystems can't afford to ***not*** consider beaver as a cost-effective solution to a number of restoration challenges.

ECONorthwest's ecosystem services valuation approach is an increasingly well-known method of quantifying the benefits to people and communities associated with functional ecosystems. It plays a key function in market-based approaches for environmental protection such as wetland banking and is a critical component in estimating the cost of natural hazards or human-caused accidents (e.g., BP Gulf spill) affecting natural resources. A study of beaver ecosystem services involves tallying those associated natural processes that provide human benefits, evaluating the most relevant, and determining the best approach for assessing their economic values. A number of tools

LEFT: This active North Creek beaver dam prevented sediment from moving downstream to Wide Hollow Reservoir.
MARY O'BRIEN
RIGHT: Transect tape to measure fate of willow sprouts over time.
MARY O'BRIEN

can be used to determine monetary values—such as calculating avoided costs (e.g., not having to expand a reservoir), tallying expenditures on recreational activities, or surveying the public about willingness to pay.

THE ESCALANTE RIVER BASIN

Like many areas of the Colorado Plateau, the Escalante River Basin in southern Utah historically supported extensive beaver populations. Today beavers are rare while habitat loss and degraded water quality are common. The 2,000 square-mile basin makes a good case study for several reasons. The landscape features a mix of ecosystem types, land ownership regimes, and perennial and seasonal waterways. The basin has been heavily altered by agricultural uses, including water storage and diversion. The Escalante River and its tributaries face water quantity and quality issues and many federally-listed threatened, endangered, and candidate species are present.

The report includes a full description of direct and indirect ways that beavers restore ecosystem function. Beaver dams affect water quantity through sediment retention and by creating storage and extending seasonal flow; increasing wetland and riparian habitats; and helping open forest canopies, which creates habitat for big game, fish, insects, birds, small mammals, and amphibians. These contributions to ecosystem function have a number of economic values.

Buckley and his ECONorthwest research team worked with several beaver experts to create reasonable estimates of the potential size of a fully restored beaver population in the Escalante River Basin. Based on these estimates and careful valuation of the services provided by beaver dams, his report arrived at some striking numbers. Particularly noteworthy are the direct cost savings associated with the millions of yards of sediment that could be stored behind beaver dams in the basin rather than rapidly filling reservoirs as it now does.

WATER QUANTITY BENEFITS WORTH MILLIONS

Wide Hollow Reservoir, the Escalante River basin's largest, has a sedimentation rate five times higher than Utah's average. Having lost nearly half of its original capacity due to sedimentation, the dam was recently expanded costing taxpayers $13 million. Buckley and his team calculated the costs associated with sediment accumulation, which created the need to expand the dam's capacity: costs of dredging off-channel dams, and estimates of reduced agricultural productivity related to lost storage capacity. Calculating out from these numbers, the report observes that by removing 204 to 549 million cubic feet of sediment upstream of storage facilities per year, a robust, basin-wide beaver population could be worth between $15-40 million in avoided costs. Another $10 million per year in savings are estimated from direct water storage benefits to agricultural users, recreationists, and water managers.

All told, the report finds that the potential value of a robust beaver population in the Escalante River Basin could reach tens, even hundreds of millions of dollars annually. A key determinant of value is scarcity. Sadly, many of the critical ecosystem services that beavers can provide are scarce in the greater Grand Canyon region. Many streams historically used by beaver would not currently support them due to overbrowsing by elk and cattle of the willow, aspen, or cottonwood beaver need to build dams; or conifer overtopping of the aspen beaver need following decades of fire suppression.

Buckley's report makes a strong case for further evaluation of the potential for beaver restoration to help the region adapt to and thereby lessen climate change impacts. Climate change, predicted to have a dramatic effect on the Colorado Plateau, has the potential to amplify the observable impacts of existing scarcities—for example less resistance to flooding, and lost water storage capacity.

As with any geographically-specific study, care must be taken when extending these results to other areas. What this study illustrates, however, is that there are rigorous, defensible tools available to help quantify the economic opportunities associated with ecosystem restoration and, in particular, to evaluate the economic values associated with the use of native, keystone species in restoration efforts. In its current form and when the study results are refined to other watersheds within the Plateau, this template has tremendous importance to watershed restoration and landscape-scale planning.

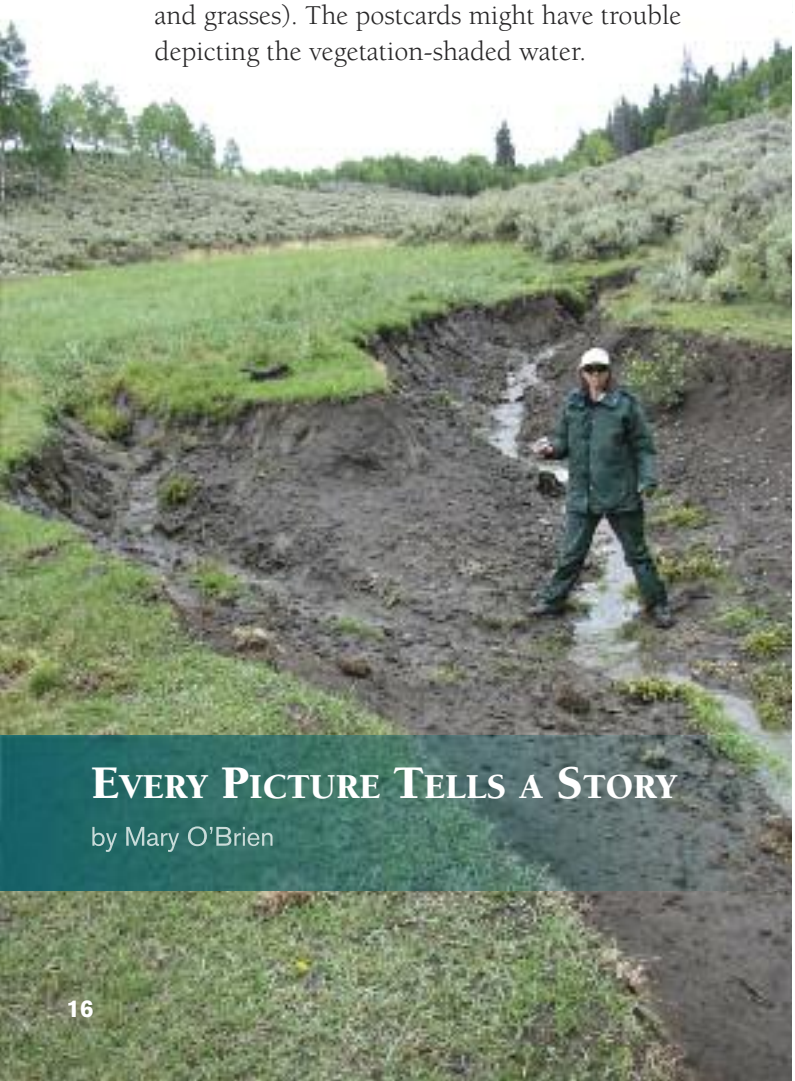
Every Picture Tells a Story

by Mary O'Brien

Suzanne Fouty, a Forest Service hydrologist, used to purchase scenic postcards of area streams in western tour shops. Most of the cards depicted idyllic spots: a stately old cottonwood or willow leaning over a glistening stream with an open stretch of bank beckoning the tourist to fish, take a nap, or camp on the short, green grass.

As Fouty points out, these beautiful postcards were showing depleted, damaged riparian areas: mature trees lacking younger recruits; sunlit water; and open banks of shallow-rooted grasses, just waiting to be gouged by the next big flood.

Here in southern and central Utah, we are far more familiar with what riparian areas *actually* look like than with what they *could* look like if they were rested from over-use. If the same postcard creek banks were healthy, they would likely display tangles of understory and overstory shrubs, a diversity of tree heights, and tall graminoids (i.e., sedges, rushes, and grasses). The postcards might have trouble depicting the vegetation-shaded water.



For the past eighteen years, Dennis Bramble, a now-retired University of Utah biology professor, has been watching one-third of a mile of riparian area of Upper Valley Creek, a sixteen-mile long tributary to the Escalante River. Having bought 160 acres of land adjacent to the largely denuded, deeply incised creek in 1994, Dennis decided to graze the property only lightly with cattle each fall, and not at all in drought years. The cattle didn't like to eat the riparian rushes and sedges, which became tall and coarse by each fall. Unmolested, these plants efficiently caught sediment whenever spring-melt or monsoon floods came. By 2011, these sedges had trapped 400,000-500,000 cubic feet of sediment. A t-post, pounded in to detect changes, has long been overtopped by sediment, and a second t-post, pounded on top of the first, is about to be overtopped. The water table, remaining near the top of the sediment, has risen 4.5-5 feet. A small side canyon to Upper Valley Creek, dubbed "Thistle Basin" in 1995 by Dennis for its weedy, dry vegetation, has become a wetland with willows expanding rapidly. The changes are visible from Google Earth.

You would think we would treasure the health of riparian areas in our national forests and throughout the West. Occupying just one to two percent of the West's land area, riparian areas aren't merely capable of holding banks together. If healthy, they judiciously slow the rush of water off mountains by creating meanders and wetlands; mete out cooled, clean water to downstream human communities; and support extremely diverse vegetation and critical habitat for approximately 80 percent of wildlife.

Of particular importance to Colorado Plateau riparian areas is the Willow family (Salicaceae): cottonwood, willows, and aspen. Forming woody communities of deep roots and impressive structural complexity for wildlife, these three family members have the fortunate capability of re-sprouting after being cut or bitten, and seeding prolifically into bare, creek-side sediment. On streams not too steep or too large, they virtually ensure that beaver will take up residence to build watershed-transforming dams.

However, as the Trust has documented since 2008, the riparian areas in the Dixie, Fishlake, and Manti-La

Headcuts occur when deep-rooted vegetation is removed by overuse. McCadden Hollow, Manti-La Sal NF.
Mary O'Brien

Bob O'Brien indicates depth of a spring brook in Thistle Basin, now transformed into a wetland after 18 years of fall-only cattle grazing.
Mary O'Brien

Sal National Forests of southern and central Utah are badly depleted. Far too often, big "grandparent" cottonwood, willow, and riparian aspen are not accompanied by up-and-coming youngsters (i.e., "recruitment" sprouts taller than the browse height of 6 feet). Cattle choose to eat, drink, and lounge in the cool, wet shade of riparian areas, and both they and increasing numbers of elk are fond of eating cottonwood, willow, and aspen sprouts. As the willow and cottonwood thin out, these ungulates concentrate even more on the remaining sedges, rushes, and grasses. Shallow-rooted, invasive, exotic Kentucky bluegrass fills the over-grazed spaces with its dense mats of rhizomes. Unhindered by dense shrubs, the cattle trample and shear off chunks of the shallow-rooted banks, widening and warming the streams. The raw banks are easily gouged by floods, further deepening and widening the creeks and streams, thus progressively isolating them from their historic wet areas, into which upland plants that tolerate dry soils then migrate.

The Trust's data showing that cottonwood, willow, and aspen recruitment is lacking have not been dismissed by the Forest Service, which is increasingly attuned to the needs of the national forests' watersheds in the face of climate change. The Dixie, Fishlake, and Manti-La Sal NFs of southern and central Utah are participating alongside the Trust and others in a number of multi-agency, multi-stakeholder collaborative efforts that are taking Willow family browse head-on.

- The **Utah Forest Restoration Working Group** (UFRWG), co-convened by the Trust and Rural Life Foundation Stewardship Center (2009-present), developed *Guidelines for Restoration of Aspen on the National Forests in Utah* (2011). Notable was the explicit, politically sensitive acknowledgment that while some aspen are in trouble from fire suppression (i.e., conifer-overtopped aspen), other, aspen-only stands are lacking recruitment sprouts taller than 2-4 feet due to excessive ungulate browsing. While not discussed directly by the UFRWG, willow and cottonwood are in the same over-browsed condition.
- The **Monroe Mountain Working Group**, co-convened by the Trust and the Grazing Improvement Program of the Utah Department of Agriculture and Food, is tackling aspen recruitment failure (conifer-overtopping and over-browsing) over most of Monroe Mountain, valued for its trophy-elk hunting opportunities. With nineteen stakeholders and thirteen Fishlake NF staff, the Working Group is running browse transects in aspen-only stands, with motion-activated cameras at each end in order to distinguish between elk and cattle browsing of aspen. The Working Group has calculated the trends of ungulate numbers on Monroe Mountain over the last eighty years; is developing desired conditions (including multi-height aspen stands); and is starting to consider how the elk, sheep, cattle and goats on Monroe Mountain might be managed differently.
- The **Grazing Collaborative**, co-convened by the Department of Natural Resources and Utah Department of Agriculture and Food, will begin meeting with thirteen members, including the Trust, in late October to examine the "*ecological, economic, and social sustainability of livestock grazing in southern Utah*." Riparian areas will have to be front and center in this collaboration, because no one denies that these are the lifeblood of the region and it's becoming increasingly hard to ignore their overuse.

As with all issues confronting the Grand Canyon Trust, riparian area challenges are almost as large as the opportunities for rethinking how we can live within the means while benefitting from the miracles of the Colorado Plateau.

Volunteer Stories from the Field

Transforming Lives and Landscapes

by Kate Watters

> People are hungry for stories. It's part of our very being. Storytelling is a form of history, of immortality too. It goes from one generation to another.
>
> –Studs Terkel

Imagine the moment a college student from the Bronx for the first time sees the shimmering brushstroke of the Milky Way dancing across the dark night sky at Kane Ranch. Imagine, after a day spent crawling around a dense stand of invasive tamarisk with a hand saw, that you can look back at a stretch of the Paria River and see only native willows and cottonwoods, and several neat piles of debris. The volunteer program transforms lives as we transform landscapes. We come back from a week in the field with volunteers wishing we had captured those moments—that sky, that stretch of river and the collective difference we made.

We are fortunate to be able to take people to extraordinary places across the Colorado Plateau to accomplish crucial conservation and restoration projects. Our volunteers come from all over America and the world for a unique, hands-on, and often life-changing learning experience. Diverse constituencies join forces in service to the land: college students, hunters, native plant enthusiasts, recovering addicts, high school students, Native American groups, families, wanderers, retired people, and international volunteers. Together we celebrate the land by getting our hands dirty, at times literally digging into our surroundings. In the process, volunteers gain a deeper understanding of the environmental issues confronting this dynamic region.

A fundamental part of our mission is to build a community of dedicated individuals who are committed to conservation so that the ethic of service and caring for our environment continues after the trip. We hope to inspire volunteers to share their newfound knowledge with one another and future generations. Our volunteers' unique ground level point-of-view of the Plateau offers a compelling perspective on conservation. Who better to tell that story than the volunteers themselves?

This year we began to explore new ways to communicate through digital storytelling. Digital stories usually contain a mixture of images, text, recorded audio narration, video clips and/or music. We created an online forum for present, past and future volunteers that explores the human connections and the unforgettable Colorado Plateau landscapes. Beginning with our spring break volunteer groups in March, we

Facing Page Top: Instructor Morgan Heim composing a shot during a conservation photojournalism workshop.
Facing Page Bottom: NAU student Derek Schroder working on a film project for National Public Lands Day.
Right: Volunteer Coordinator Emily Thompson looks to frame a shot.
Photos by Kate Watters

put the onus on our volunteers to tell their stories with photography, poems, essays and video. Our 2011 intern, Gayle Nance, took a crash course in video editing from a local film industry veteran. She pieced together the video footage taken by college students from Chicago, Boston and Nebraska to make two short films. In one film, the viewer is transported to the front lines of cleanup efforts in Vermilion Cliffs National Monument and to the House Rock Valley fence lines to modify barbwire fence for safe pronghorn antelope passage. The other takes you to the Kaibab Plateau to monitor the spread of invasive cheatgrass. In both, the students explain not only what they are doing, but all the reasons why. They now care about fence height and a grass they would have never recognized the week prior.

Keith Esposito, a Boston University volunteer, was among those who were inspired to write about their experience. He composed a poem from the perspective of the California Condor.

Make sure on your drive out you take a look
back up at those cliffs.
The limestone cap,
the sandstone spread,
the purple clay roots,
all the layers and all the time,
embracing the rain that exposed all its colors,
and the floods that cracked and tore off its features,
realizing that time is the gift
of finding the next best thing.
Take care now, have a safe drive…
I hope you can come back sometime.
Who knows?
Maybe by then we'll have a new egg to place
up on the plateau
And together we can watch as it cracks,
watch as it splits apart,
watch new wings
break open.

This summer several Trust staff participated in a photojournalism workshop with Morgan Heim, a Colorado-based multimedia journalist who specializes in sharing the stories of science and environmental issues. We focused our workshop on the Arizona Forests program, creating a narrative to build support for the Four Forest Restoration Initiative. For two and a half days we learned hands-on techniques to capture compelling images and audio to help make the case for forest restoration. We toured the Schultz Fire during a monsoon storm, interviewed Coconino Rural Environmental Corps workers removing hazard trees from the charred landscape, and listened to the stress in the voice of a Flagstaff resident living with the constant threat of flooding. The result was three short audio slideshows that are being used by 4FRI and the Trust to build support. We learned how the power of combining stories with images and individual voices bearing witness can potentially lead to learning, action, and positive change.

Through these stories we also hope to inspire people to contribute to conservation by helping us continue to provide these volunteer experiences at no cost. Consider making a donation on our website to directly sponsor a volunteer who is eager to make a difference for the Colorado Plateau. For as little as $50, your donation will help provide the resources that volunteers need—knowledgeable leaders, quality camping gear, field supplies, safe transportation, and nourishing food. Your gift can also help us purchase digital cameras, video, and audio recording equipment to continue our storytelling efforts.

Visit the Volunteer blog and GCT's YouTube channel to see how your donation not only helps transform the lives of volunteers, but helps us build a community of individuals who are dedicated to conserving public lands on the Colorado Plateau and sharing their stories with the world.

Progress Slows but Door Still Open to Piute Wilderness

by Tim Peterson

Since early last year, the Trust's Utah Wildlands Program has been working with our conservation partners and other stakeholders to build consensus for an acceptable deal for the outstanding wilderness resource in Utah's Piute County. Just when a deal to permanently protect outstanding public lands appeared imminent, our efforts suffered setbacks due to local and national politics. The door has not totally slammed shut, but our opening has certainly narrowed.

Trouble surfaced when Utah Senator Mike Lee (R) announced early this year he would be keeping a campaign promise made in the 2010 race that the Utah State Legislature must approve of any new wilderness bills crafted for Utah. We had hoped to help the Utah legislature's Natural Resources Committee pass a general resolution approving the processes being driven by county commissioners that were already underway. With all the rhetoric in Congress and the Obama administration insisting that local voices are paramount in public lands issues, it seemed straightforward that the legislature might swiftly and easily approve of such locally-driven efforts. At an interim Natural Resources Committee hearing in June however, State Representative Mike Noel (R – Kanab) voiced his opposition to wilderness in general and to the specific processes underway. No quorum was present and no vote was taken on the issue that day, but we heard later that a single resolution generally approving of countywide efforts would not succeed, and that individual resolutions for each county would have to be considered one at a time.

Around the same time, universal opposition to any new wilderness was voiced by Utah's lone statewide off-road vehicle (ORV) advocacy group, even though not one inch of road or trail would have been closed by the legislation we were discussing. Interestingly enough, local ORV interests in Piute were aware of our efforts and were generally supportive. After more time for consideration, and well-bolstered by

Circleville Mountain, Utah.
Tim Peterson, flown by LightHawk

With all the rhetoric in Congress and the Obama administration insisting that local voices are paramount in public lands issues, it seemed straightforward that the legislature might swiftly and easily approve of such locally-driven efforts.

obstructionist off-roaders, Mr. Noel announced that he staunchly opposed any county wilderness bill moving forward. He was particularly insistent that not one acre of non-Wilderness Study Area (WSA) BLM land become wilderness. This would have been the case in Piute County, where commissioners and conservationists had agreed that wilderness should be designated on non-WSA BLM lands along the East Fork of the Sevier River. "Everything we're going to designate as wilderness is already wilderness," said one county commissioner, the lands are roadless, pristine, wild and already managed with minimal interruption of natural processes.

For months Mr. Noel's inflexibility continued and all who lobbied him to relent were told there was no hope of dissolving the roadblock to progress he had created. Early this fall, Mr. Noel drafted a memo setting forth criteria that he indicated the legislature "needs addressed" before their blessing could be given. The list of criteria included provisions such as surrender of formal ownership to individual counties of all mapped routes in the county (be they cow paths or main roads), mandatory mechanical vegetation treatment in wilderness to "increase water yield" and mandated use of motorized vehicles inside designated wilderness for "economically disadvantaged Americans." These and other provisions were so far beyond the realm of reasonable discussion that it seems their intent was to halt all dialog.

In addition to state level political problems, Piute County has seen an uprising of local opposition. A flyer posted in early September urging citizens to appear at the September Piute Commission read in part:

"DON'T LET YOUR COUNTY COMISSIONERS GIVE AWAY YOUR LAND!

YOUR TAX DOLLARS ARE BEING SPENT TO PAY A LOBBYIST TO PROPOSE LEGISLATION TO CONGRESS TO DESIGNATE... WILDERNESS ... THIS MEANS NO MORE MOTORIZED VEHICLES ATVS ETC. THE FUTURE OF CATTLE PERMITS WILL BE AFFECTED. THE LAND MEETINGS BEING HELD BY THE COMMISSIONERS ARE NOT BEING ADVERTISED. WHY?"

Though most "facts" in the flyer were untrue, the September commission meeting was packed with angry locals demanding that the commissioners pass a resolution at their next meeting stating that none of the county should ever become wilderness.

Cooler heads prevailed in the interim, and the "no wilderness ever" resolution was tabled in the October commission meeting. The commission agreed to establish a committee to draft their own set of criteria that might satisfy locals as well as conservation interests, leaving the door open to more discussions in the future. Though the room was still packed with anti-government voices, some pro-land use legislation sentiment existed there as well. The October commission meeting had a surprise advocate for staying on track to craft land use legislation locally—Representative Mike Noel. In a dramatic about-face, Mr. Noel urged the crowd and the commissioners not to pass the "no wilderness ever" resolution. It's still a mystery why Mr. Noel changed his mind, but contributing factors may include pressure from locals, other county commissioners, current and former members of Congress and negative coverage in *The Salt Lake Tribune* of Mr. Noel's efforts to impede progress. The ever-present threat of new presidentially-decreed National Monuments in the absence of local progress probably played a part as well. Though we now seem to be in a cooling-off period, patience may still bring land use legislation for Piute once more work is done to build a stronger constituency for the outstanding public lands in Piute County.

Slowing down a bit may be OK—wilderness legislation is unlikely to find enough support in this Congress anyway. Word is that House Natural Resources Subcommittee Chair Rob Bishop (R- UT) wants to fundamentally change the Wilderness Act, and that any legislation presented to his committee is apt to be loaded up with bad language. In the meantime, the Wildlands Program plans to turn lemons into lemonade by seizing the opportunity to work harder to build better local relationships and to work on other kinds of protection through individual projects, as opposed to potentially ceding ground in Congress.

STATEMENTS OF FINANCIAL POSITION

for the twelve months ended December 31, 2010

ASSETS	2010
Current Assets:	
Cash and cash equivalents	$3,402,927
Contributions receivable	1,481,274
Other receivables	1,781
Livestock inventory	19,108
Prepaid expenses	26,968
TOTAL CURRENT ASSETS	**4,932,058**
Breeding herd	77,639
Property and equipment, net	2,888,611
Investments	2,300,260
Conservation easement	1,295,000
Beneficial interest in remainder trust	46,075
TOTAL ASSETS	**$11,539,643**

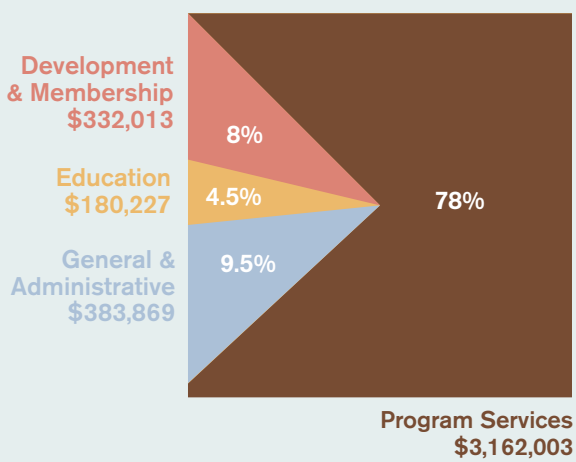
LIABILITIES AND NET ASSETS	
Current Liabilities:	
Accounts payable	$144,496
Accrued expenses	63,630
Total current liabilities	208,126
Net Assets:	
Unrestricted	7,185,295
Temporarily restricted	2,351,222
Permanently restricted	1,795,000
TOTAL NET ASSETS	**11,331,517**
TOTAL LIABILITIES AND NET ASSETS	**$11,539,643**

STATEMENTS OF ACTIVITY

for the twelve months ended December 31, 2010

CHANGES IN NET ASSETS	2010
Revenues:	
Grants	$2,840,885
Contributions	1,376,088
In-kind contributions	315,685
Membership income	332,833
Investment income	239,314
Cattle revenue	93,432
Change in value of beneficial interest in remainder trust	1,337
Other income	31,863
TOTAL REVENUES	**5,231,437**
Expenses:	
Program services	3,162,003
Education	180,227
Development and membership	332,013
General and administrative	383,869
Total expenses	4,058,112
CHANGE IN NET ASSETS	**1,173,325**
NET ASSETS, BEGINNING OF YEAR	**10,158,192**
NET ASSETS, END OF YEAR	**$11,331,517**

DIRECT EXPENSES



Consider a donation to Grand Canyon Trust

As 2011 comes to an end please remember the Grand Canyon Trust when you are considering end-of-year charitable contributions. We've been your "boots on the ground" for twenty-six years, working collaboratively in the battle to protect air quality, forests and water on Colorado Plateau public lands, Colorado River resources, and Grand Canyon National Park. We've also led the Four Forest Restoration Initiative; an ambitious, nationally recognized plan to restore 2.4 million acres of ponderosa pine forest that will protect rural communities and provide much-needed jobs in Arizona's rim country.

The Grand Canyon Trust is one of the most effective conservation advocates working the Colorado Plateau but we can't do it without your support. Please donate today at www.grandcanyontrust.org. or by mailing a contribution to 2601 N. Fort Valley Rd., Flagstaff, Arizona 86001.

Stay in the loop our e-newsletter

In our efforts to keep you informed we are now producing an e-newsletter that is distributed bimonthly. It's a quick read and will give you the latest news on the work we're doing on the issues you care about. However, we can't keep you informed without your email address. If you want to be in the loop, send your email address to *asanchez@grandcanyontrust.org* with the subject line "Keep me in the loop."

Get out on the ground with Grand Canyon Trust

We provide members with many opportunities to get out on the lands we work to protect and restore. Whether it's recreational and educational trips with our development director, Phil Pearl, or volunteer working adventures with Kate Watters, Emily Thompson, and Andrew Mount; we have something to get you up close and personal with the magnificent Colorado Plateau.

If you're interested, contact
Phil at *ppearl@grandcanyontrust.org* and/or
Kate at *volunteernow@grandcanyontrust.org*
or call them at 928-774-7488.

Best wishes for a wonderful 2012.

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Grand Canyon NP Scarlet Monkeyflower, *Mimulus cardinalis Dougl.* NPS/Michael Quinn

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.