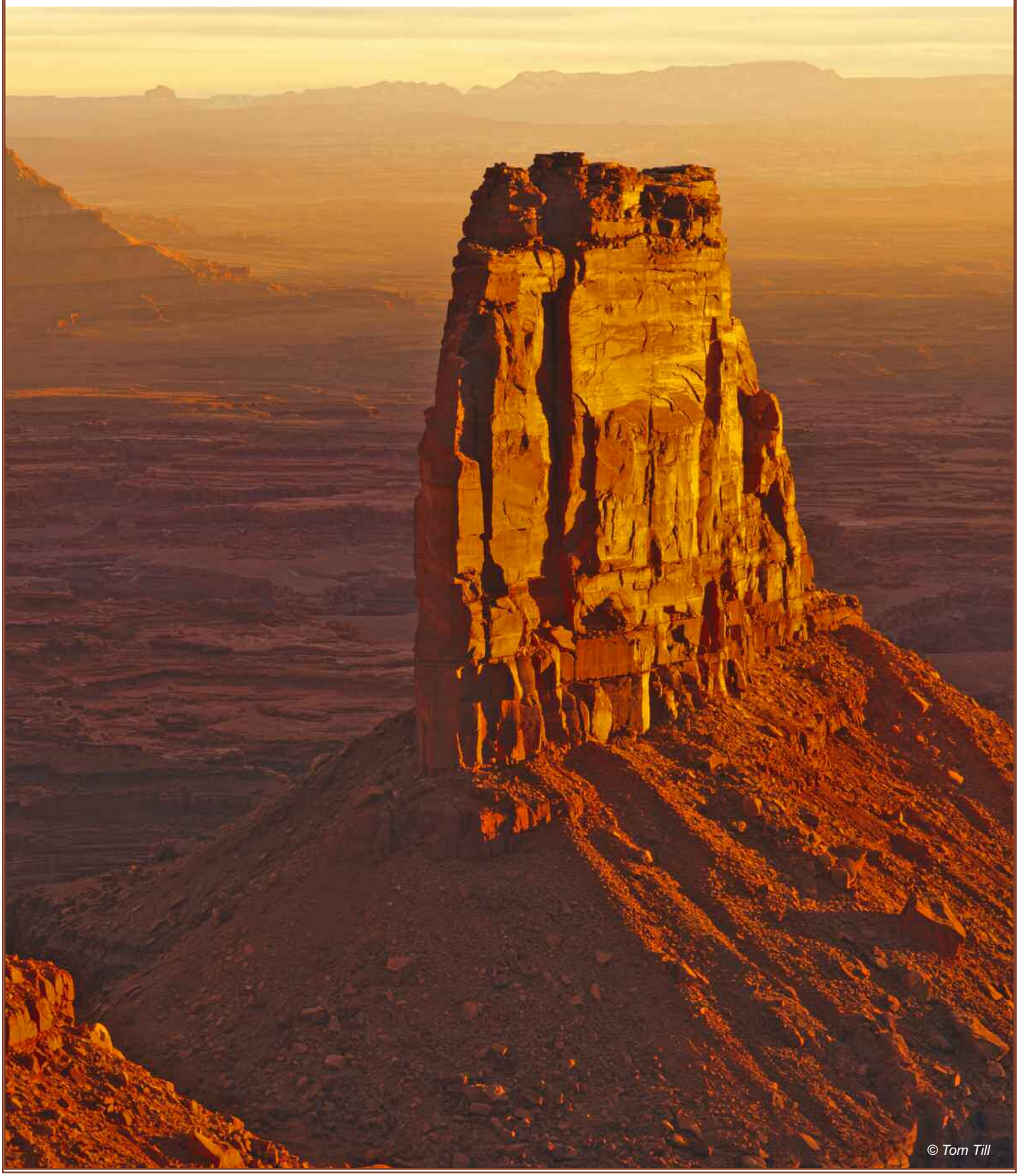
Greater Canyonlands National Monument: An Opportunity, A Legacy



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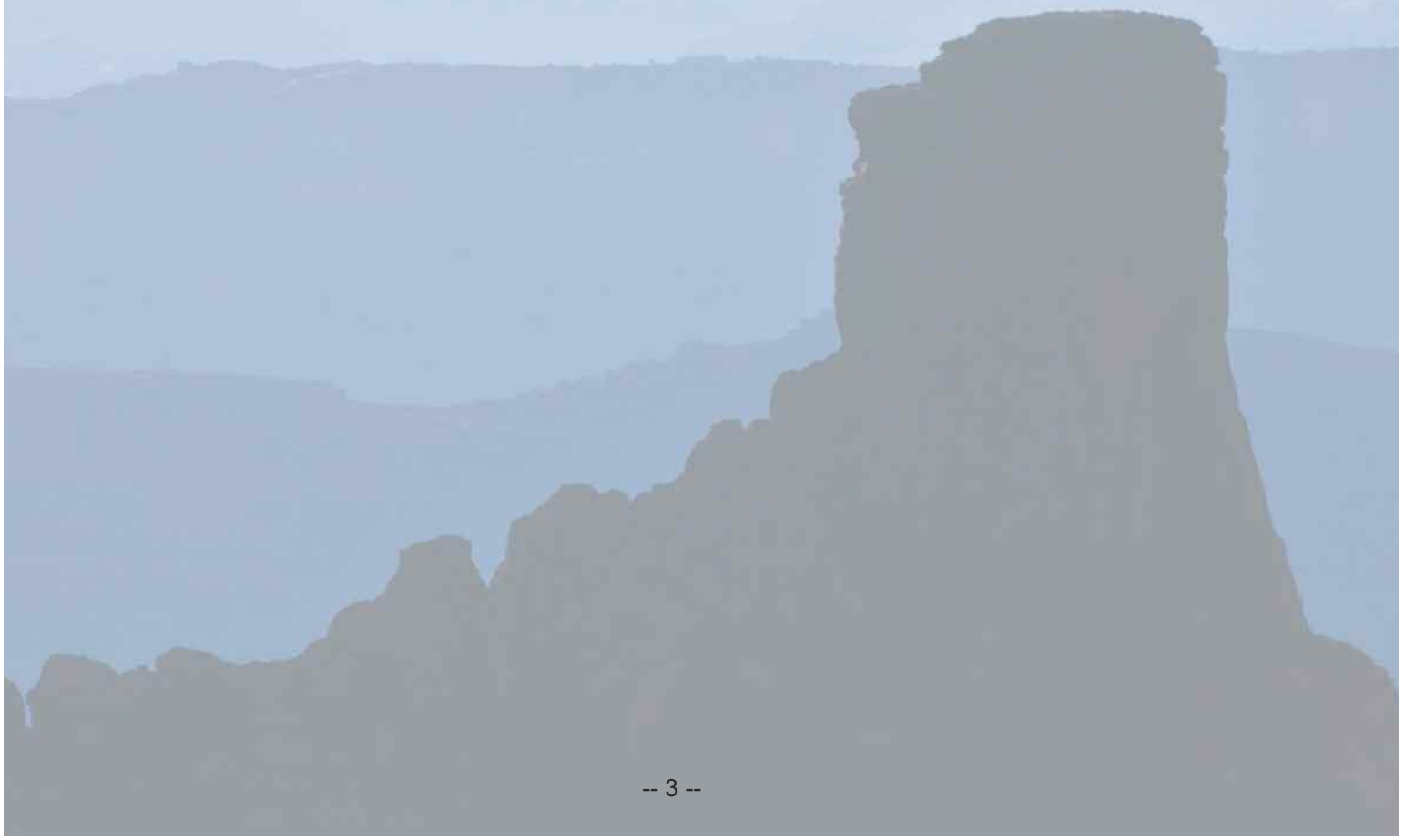


EXECUTIVE SUMMARY

GREATER CANYONLANDS SWEEPS ACROSS A VAST NETWORK OF CANYONS AND MESAS filled with scientific, cultural, and historic treasures—one of the last intact large landscapes in Utah's redrock wildlands. Surrounding the focal point at the confluence of the Green and Colorado rivers in Canyonlands National Park, Greater Canyonlands embraces nearly 1.8 million acres of the Colorado Plateau—with virtually no roads to fragment the region's intact and dynamic ecosystems. In the shadow of the 11,360-foot-high Abajo Mountains, stunningly diverse geologic formations shelter a largely untapped library of 12,000 years of human history—from Ice Age mammoth hunters to Ancestral Puebloans to mid-twentieth-century uranium prospectors—an unparalleled story of this southwestern frontier.

Canyonlands National Park, Natural Bridges National Monument, and the northern reaches of Glen Canyon National Recreation Area are embedded within the matrix of Greater Canyonlands. Remoteness has preserved historic and scientific resources beyond the national parklands, providing unmatched opportunities for research, solitude, and renewal. Greater Canyonlands also secures critical watersheds along the Colorado and Green as well as the Dirty Devil and San Rafael rivers. By protecting the full basin and the great drainages that reach back toward enclosing uplands, we knit together these "crown jewels" in a complementary and comprehensive system of land management. This protection would conserve the most threatened natural resources, permit native plants and animals to migrate in response to climate and environmental change, and ease conflicts among recreationists.

This complex of canyons, mesas, mountains, and basins, of natural bridges, arches, and spires, rivals the Grand Canyon in importance and scale. Within Greater Canyonlands lies the fundamental geological story of the central Colorado Plateau. Beginning with the Paradox Basin's salt deposits from the Pennsylvanian Period, Greater Canyonlands offers crucial clues to a sequence of continentally important geological puzzles.

Canyonlands National Park preserves only a small portion of this landscape. Greater Canyonlands completes a conservation vision that dates to the 1930s and offers remarkable opportunities for research on salt anticlines, upwarps and monoclines, laccolithic mountains, and canyon-cutting by rivers, creeks, and seasonal flash floods. This descent through time allows scientists to decipher the erosional mechanisms of the Colorado Plateau.

TENS OF THOUSANDS OF ARCHEOLOGICAL SITES PROVE THAT GREATER CANYONLANDS ONCE TEEMED WITH DENSE HUMAN POPULATIONS. Here, people farmed corn, beans, and squash and decorated cliffs with striking and mysterious artworks. The lightly vegetated landscape and dry climate preserve traces of the past lost in most other places. The result is a rich archaeological record visible, well-preserved, and unrivaled in North America. This cultural and artistic treasure holds valuable knowledge about the past and keys to understanding the future.

Thousands of dry caves and alcoves in Greater Canyonlands reveal dramatic adaptation of human populations over 10,000 years. The well-preserved stratified deposits of these dry desert caves (notably Cowboy Cave in Horseshoe Canyon) yield artifacts (including a 9,000-year old coiled basket, the oldest known in the Americas) and clues to the human ability to respond to changing climates. The remote and hidden alcoves and overhangs of Greater Canyonlands hold the fragile, vulnerable archaeological evidence of these remarkable ancient cultures.

On any hike or drive, visitors can encounter traces of the ancients. Rich archaeological resources blanket the area: cliff dwellings contemporary with those of Mesa Verde; great houses, great kivas, and Chaco roads related to Chaco Canyon; world-renowned Fremont rock art; and thousands of pithouses, pueblos, and specialty sites. If we can stop the ongoing depredations of vandals who destroy archaeological de-

posits for personal gain, Greater Canyonlands has tremendous research potential for future archaeologists.

As suddenly as the Ancestral Puebloan and Fremont cultures appeared in the region, even more abruptly their ways of life and archaeological presence disappeared. In the late 13th Century, burgeoning populations encountered drier, hotter conditions, resulting in inconsistent crop yields, hunger, social strife, general chaos, and rapid abandonment of the farming lifeway—and abandonment of much of the region.

Similar shifts occurred throughout North America at the same time, resulting in broad and deep changes to the Native cultural landscape just prior to the entry of Europeans. Deciphering the details of this great tragedy in the remote Canyonlands may shed light on how this widespread catastrophe devastated the farming cultures of North America and perhaps yield insight into how modern populations might react to and deal with climate change.

The inheritors of Ancestral Puebloan culture—the modern Pueblo people—live far to the south in Arizona and New Mexico villages but maintain ceremonial connections to this prehistoric homeland. The Diné, the Navajo people, live nearby in today's Navajo Nation. Ute and Paiute reservation communities flank Greater Canyonlands. All these native peoples retain a keen interest in seeing these wild resources and ancestral sites preserved.

EUROPEANS ENTERED THIS NATIVE LANDSCAPE IN THE LATE 1700S, when Spanish explorer-priests rode north from New Mexico. The two branches of the Old Spanish Trail skirted Greater Canyonlands just to the north and south, defining and acknowledging the region's ruggedness and remoteness by avoiding it.

The remote and undeveloped nature of Greater Canyonlands protects historical sites that span the full history of this boom-and-bust West—beginning with mountain man Denis Julien's first Anglo-American inscriptions along the Green and Colorado rivers in 1836 and John Wesley Powell's epic journeys in 1869 and 1872. Pioneer wagon roads, sawmills, and ranch structures tell the stories of isolated family ranches and early homesteaders. As the nineteenth century turned to the twentieth, Butch Cassidy and the Wild Bunch used Robbers Roost and nearby canyons along the Dirty Devil as hideouts, a key stop along The Outlaw Trail.

The scientific value of historic and prehistoric sites and artifacts lies in relationships—with each other and within the larger context. Individual sites connect to community and to regional patterns of settlement. To understand this context within Greater Canyonlands requires preservation of large areas to maintain the objects and their interactions. Thus, protection of the full reach of Greater Canyonlands is necessary for proper care of the region's historic and prehistoric treasures—both discovered and undiscovered.

GREATER CANYONLANDS POSSESSES GREATER PLANT DIVERSITY THAN NEARLY ANY OTHER REGION IN UTAH, supporting fully 57 percent of all plants known on the Colorado Plateau. Nine hundred and sixty species of plants grow in Greater Canyonlands. A 6500-foot elevation range coupled with diverse rock formations—each eroding to unique geography and soil types—defines the Canyonlands Floristic Province, where ecotypes run from salt desert shrub to lush grassland, from piñon-juniper to alpine coniferous forest.

Climate, limited plant migratory routes, and distinctive geologic history lead to small and isolated populations and a high concentration of endemic species adapted to this arid and rigorous home. Fragile biological soil crusts also play a critical role throughout Greater Canyonlands, stabilizing and enriching desert soils. Canyonlands plants often have low reproductive potential, restricted geographic ranges, and vary substantially in population size. Many species are so rare that off-road-vehicles and non-native species can easily imperil small populations. Seven endangered or threatened species find refuge here. This wealth of endemic plants and their pollinators presents extraordinary opportunities to study speciation and community dynamics independent of climatic variables.

These diverse plant communities nourish rich wildlife communities. Hundreds of species of birds,

mammals, fish and reptiles—including nearly three dozen animals on federal and state threatened and sensitive species lists—make their homes in Greater Canyonlands. While most of the region remains unsurveyed, biological hot spots include the Abajo Mountains and 750 miles of the river canyons and their tributaries.

Riparian ecosystems make up less than 1 percent of Utah public lands but support 70–80 percent of Utah's plants and wildlife species. These wetlands provide refuges and stopovers for Neotropical migrant birds and landscape-scale migration corridors within otherwise inhospitable habitat for larger species like deer, mountain lions, and bears. Nearly 300 perennial springs bubble up in the dry Greater Canyonlands landscape, dependable water sources critical to the survival of native plants and wildlife. Some of the rarest species in Utah and the most spectacular biotic assemblages survive only at springs and seeps.

Greater Canyonlands boasts a pristine night sky and natural quiet. Only wind and wildlife interrupt the silence. The brilliant stars and dark skies led to the designation of Natural Bridges National Monument as the world's first International Dark Sky Park. With isolation and good air quality, with no towns or highways crossing the region, Greater Canyonlands is one of the few places to still offer a view of stars at their clearest against an absolutely black night sky.

THE NATIONAL PARK SERVICE FIRST PROPOSED A NATIONAL MONUMENT PROTECTING GREATER CANYONLANDS and the surrounding canyons of the Colorado River in 1935. The following year, the first proposal for a 6,000-square-mile Escalante National Monument recognized the need to preserve the extraordinary character of southern Utah's redrock wilderness—including Greater Canyonlands. Pro-development advocates attacked this visionary idea, but President Franklin Roosevelt's Interior Secretary Harold Ickes continued to push for a 4.5 million-acre Escalante National Monument through 1940. World War II diverted our attention, but Bates Wilson, Superintendent of Arches National Monument, worked tirelessly to introduce decision makers to this remarkable place in the 1950s.

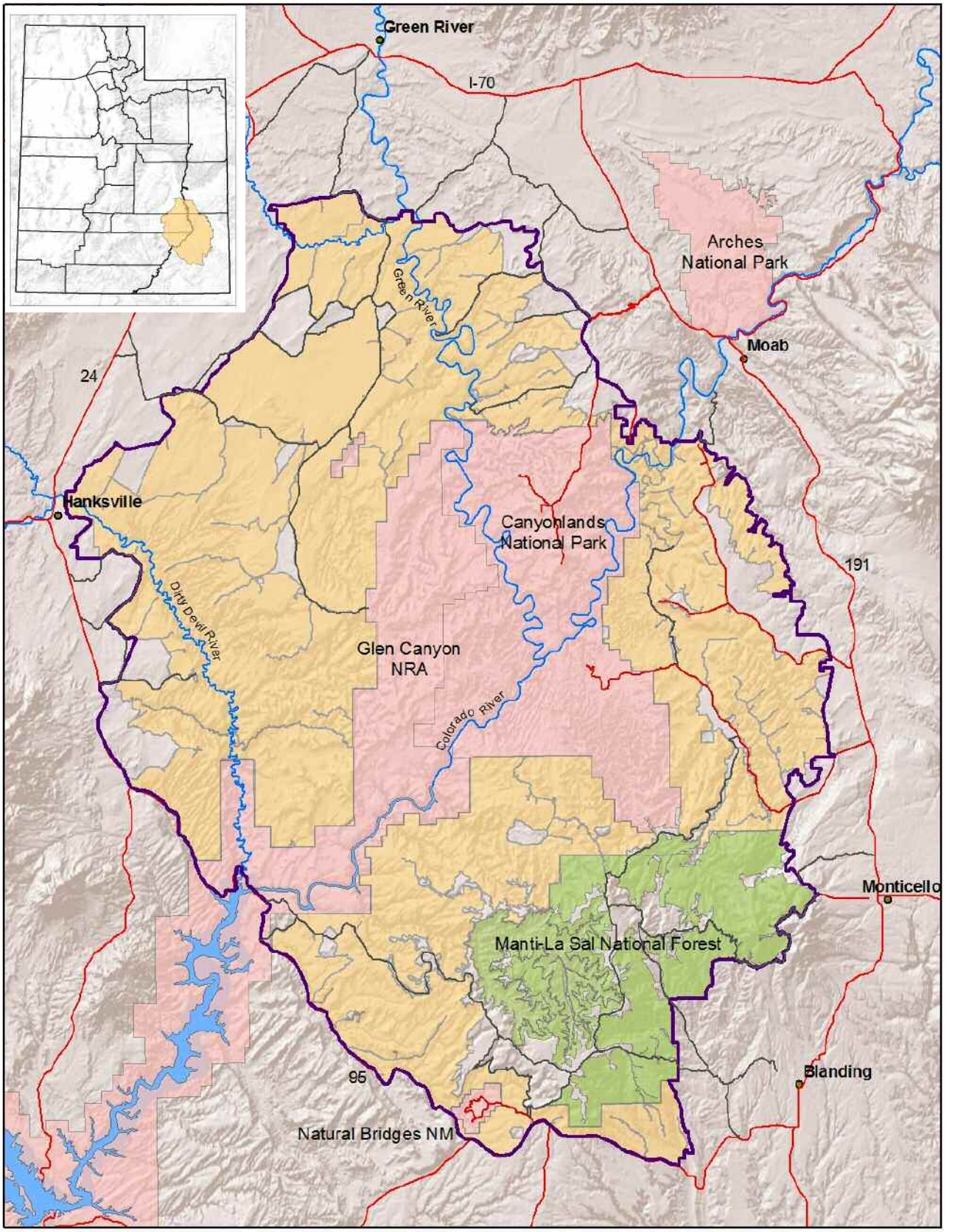
After the election of President John F. Kennedy, Wilson found an ally in Interior Secretary Stewart Udall, who flew over the Canyonlands landscape in 1961, looked down, and murmured, "Goodness sake, that's a national park!"

After that plane flight, Udall directed the Interior Department to begin planning a Canyonlands National Park. When President Lyndon B. Johnson signed the public law creating Canyonlands National Park in 1971, he preserved 257,400 acres, a little over one quarter of Udall's original conception—with boundaries that divided the watershed and left most of Greater Canyonlands without an adequate shield against development.

Ever since the park was created, conservationists have dreamed of "completing" Canyonlands to embrace the uncompromised watershed. The scientific value of many of the historical and archaeological objects within Greater Canyonlands requires preservation of large areas to maintain both the objects and their interactions. Only through such protection can scientists consider the relationships of prehistoric sites in the larger context of community patterns, settlement patterns, and regional populations.

Conservation biology also argues for landscape-scale protection for migration corridors, habitat protection, and research opportunities. Protecting Greater Canyonlands at the scale of 1.8 million acres truly is "the smallest area compatible with the proper care and management of the objects to be protected," as required by the Antiquities Act.

Fifty years after Stewart Udall's vision of a Canyonlands National Park, Greater Canyonlands remains one of the last untouched frontiers of the West, one of the largest areas in the lower 48 United States wild enough to offer a once-in-a-generation opportunity to proclaim an environmental legacy and to protect this beloved landscape.


Green River
I-70
Arches
National Park
Green River
Moab
24
Hanksville
Canyonlands
National Park
191
Dirty Devil River
Glen Canyon
NRA
Colorado River
Monticello
Manti-La Sal National Forest
95
Blanding
Natural Bridges NM
Greater Canyonlands Region
National Park Service Lands
BLM Lands Proposed for Wilderness in ARRWA
US Forest Service Roadless Lands
Highways/Paved Roads
Major Dirt/Gravel Routes
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GREATER CANYONLANDS NATIONAL MONUMENT: AN OPPORTUNITY, A LEGACY

INTRODUCTION

Greater Canyonlands remains one of the last untouched frontiers of the West, one of the largest areas in the lower 48 states wild enough to offer a once-in-a-generation opportunity for the President of the United States to embrace a true environmental legacy and protect this beloved landscape as a national monument.

The boundaries of the Greater Canyonlands region include nearly 1.8 million acres, an astonishing landscape of high plateaus; the essential sky-island watershed of the Abajo Mountains; stunning geologic formations; 12,000-year-old sites left by mammoth hunters; an incomparable archaeological record of Ancestral Puebloan life; and unmatched natural beauty. Preserving Greater Canyonlands makes sense now, as it did to Secretaries of the Interior Harold Ickes and Stewart Udall when each first imagined preserving millions of acres of the area's redrock country decades ago.

Today, Greater Canyonlands faces unprecedented threats. Energy development can have huge impacts, but exploding off-road vehicle (ORV) use poses problems no less serious (Gregory, 2008). National monument designation would not exclude ORV use but instead would direct riders away from the most fragile areas, protecting both diverse recreation uses and an irreplaceable ecosystem. Proclaiming a Greater Canyonlands National Monument would knit together the interlocking land management designations in a complementary system to protect the most threatened resources (rare plants, Puebloan ruins, and rock art, especially); permit native plants and wildlife to migrate freely in response to climate and environmental changes; ameliorate conflicts among ORV users and other recreationists; create a vital buffer for Canyonlands National Park; and facilitate a more comprehensive management approach based on watersheds and water conservation.

Greater Canyonlands is a coherent—but startlingly vulnerable—expanse filled with scientific, cultural, and recreational riches, one of the last intact large landscapes in southern Utah's redrock wilderness; a landscape worthy of decision makers' attention and visionary action.

Greater Canyonlands is comprised of a matrix of public lands. First is Canyonlands National Park, a crucial preserve established in 1964 that encloses the core of canyons and mesas at the confluence of the Green and Colorado Rivers. Glen Canyon National Recreation Area, Natural Bridges National Monument, and Manti-La Sal National Forest add layers of protection to significant reaches of this canyon country. Unfortunately, illogical hard-to-manage straight-line boundaries define each of these preserves and create conflict with surrounding Bureau of Land Management (BLM) public lands, reflecting compromises forged among diverse stakeholders: government, conservationists, and resource developers over the last seventy years.

THE COLORADO PLATEAU AND GREATER CANYONLANDS LANDSCAPE

The Colorado Plateau, host to the Greater Canyonlands, has the geographical weight of the better known Rocky Mountains or the Appalachians, the Sierra Nevada or the Great Lakes. A few Canyon Country icons—Grand Canyon, Zion, Monument Valley, Delicate Arch—are considered common culture, pillars of the continental landscape we call the Colorado Plateau. Beyond these icons, Greater Canyonlands boasts even more spectacular landmarks: Labyrinth Canyon, Lockhart Basin, the Six Shooter Peaks, White Canyon, Fiddler Butte, Robber's Roost, and the Dirty Devil River.

Geologist John Wesley Powell first explored these canyons between the Rockies and the deserts when he dared to run the Green and Colorado rivers in 1869 and 1871. He found an arid unmapped multi-tiered Sachertorte of flat-lying rocks dissected by the Colorado River and its tributaries. And so he named this re-

drock country for the river and its landforms (Powell, 1875; Stegner, 1954).

From the mouth of the Colorado River at the sea, the Southwest rises northward in steps—from desert basin, to desert mountain, to the Colorado Plateau, and finally, to the Rockies themselves. Keystone to this diverse landscape is the Colorado Plateau, ringed by dry mountains, standing as an island above the deserts. Its rocks are old, its canyons still new, and its geology laid bare to even the least observant eye.

Rocks define the Colorado Plateau as both a physical and an ecological landscape. Despite its aridity, ecologists have not traditionally included the Plateau within the North American Deserts. However, with increasing impacts of climate change, their maps may change as increasing aridity accelerates desertification (Schwinning et al., 2008.). While many Plateau species have connections to the Rocky Mountains or the Great Basin Desert, the Greater Canyonlands is a biologically distinct place. With its rivers confined in deep canyons, isolated springs provide a unique resource. The Plateau has developed unique and diverse communities of endemic (and threatened) animals and plants uniquely adapted to its terrain.

In the heart of the plateau, Greater Canyonlands protects critical watersheds along the Colorado and Green rivers, as well as the Dirty Devil and San Rafael rivers. This place of cliff, canyon, and valley, of spire and castle, of lush and improbable hanging gardens, of echoing alcoves and amphitheaters, harbors pockets of life and refuges for rare species. The mosaic of physical and chemical environments created by two-dozen distinct rock layers nourishes nearly a thousand species of desert flora and a rich array of wildlife, from black bears on Elk Ridge, to mountain lions and desert bighorn sheep at Hatch Point, to peregrine falcons in Labyrinth Canyon.

The central veins of the Green and Colorado rivers flow southward—defining Greater Canyonlands' network of drainages. The Green loops for 50 miles through the sinuous bowknot curves of Labyrinth Canyon—recommended to Congress by the BLM as worthy of Wild and Scenic designation (BLM, 2010). Significant tributaries—the San Rafael River, oasis-like Tenmile Creek, and Barrier (Horsehoe) Creek—cut deep gashes in the surrounding benchlands before joining the Green in this reach.

The Colorado runs across Greater Canyonlands from northeast to southwest—from near Moab southward into the Canyonlands basin surrounding Canyonlands National Park and on to the confluence with the Green and the whitewater of Cataract Canyon (McKnight, 1940; Baker, 1948). Indian Creek, Salt Creek, and Dark Canyon join the Colorado from headwaters on the flanks of Elk Ridge and the Abajo Mountains (Gregory, 1938; Witkind, 1964). Greater Canyonlands ends near Hite, Utah, where the Colorado meets the Dirty Devil River (flowing through one of the most rugged and remote landscapes in the American West) and White Canyon (after its descent from Natural Bridges National Monument) (Thaden et al., 1964).

Geology

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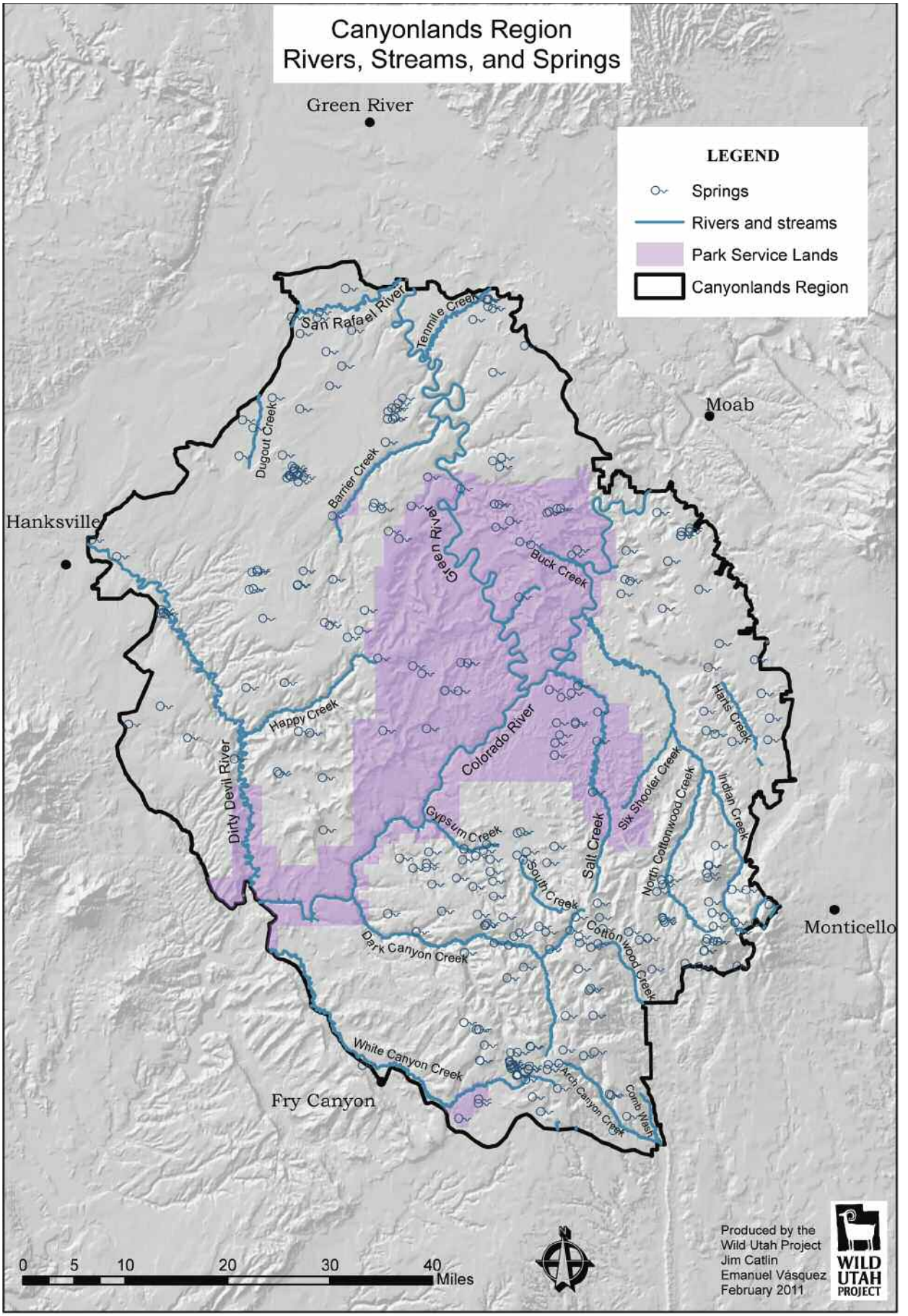
Canyonlands Region
Rivers, Streams, and Springs
Green River
LEGEND
Springs
Rivers and streams
Park Service Lands
Canyonlands Region
San Rafael River
Tenmile Creek
Dugout Creek
Barrier Creek
Moab
Hanksville
Green River
Buck Creek
Happy Creek
Dirty Devil River
Colorado River
Gypsum Creek
Salt Creek
Six Shooter Creek
North Cottonwood Creek
Indian Creek
Harts Creek
South Creek
Cottonwood Creek
Monticello
Dark Canyon Creek
White Canyon Creek
Arch Canyon Creek
Comb Wash
Fry Canyon
0 5 10 20 30 40 Miles
Produced by the
Wild Utah Project
Jim Catlin
Emanuel Vásquez
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WILD UTAH PROJECT

the central Colorado Plateau. Beginning with the Paradox Basin's salt deposits from the Pennsylvanian Period, Greater Canyonlands offers compelling clues to a sequence of continentally important geological stories. Rocks from the Permian Period add thousands of feet of cliffs and canyons eroded from the Cutler Formation, including the Cedar Mesa Sandstone's needles and fins that give the region much of its character (Condon, 1997).

Mesozoic rocks contain rich paleontological resources—though Greater Canyonlands remains largely unexplored by paleontologists (James Kirkland, Utah state paleontologist, personal communication, 2012). The wall of Jurassic sandstone (Wingate Sandstone cliffs and Navajo Sandstone domes) that rims the Canyonlands Basin and Dirty Devil canyons creates one of the most dramatic landscapes in the world. (Fillmore, 2011)

Canyonlands National Park preserves only a small portion of the core of this landscape. A Greater Canyonlands National Monument would complete a conservation vision that dates from the 1930s and offers remarkable geological and geomorphological research opportunities. Mesa by mesa, the land steps downward to the rivers, from the Island in the Sky and the Abajo Mountains, from the San Rafael Desert and Hatch Point. This descent through time contains evidence critical to understanding the erosional mechanisms of the Colorado Plateau.

THE ANTIQUTIES ACT AND CONSERVATION IN SOUTHERN UTAH

Canyonlands National Park

The National Park Service first surveyed southern Utah in 1935 and looked broadly at the Canyonlands Basin, Glen Canyon, the Waterpocket Fold, Cataract Canyon and the canyons of the San Juan River. The first Escalante National Monument proposal in the next year recognized the extraordinary character of this immense, unimpaired landscape. The proposed monument contained 6,000 square miles and included the entire Greater Canyonlands region.

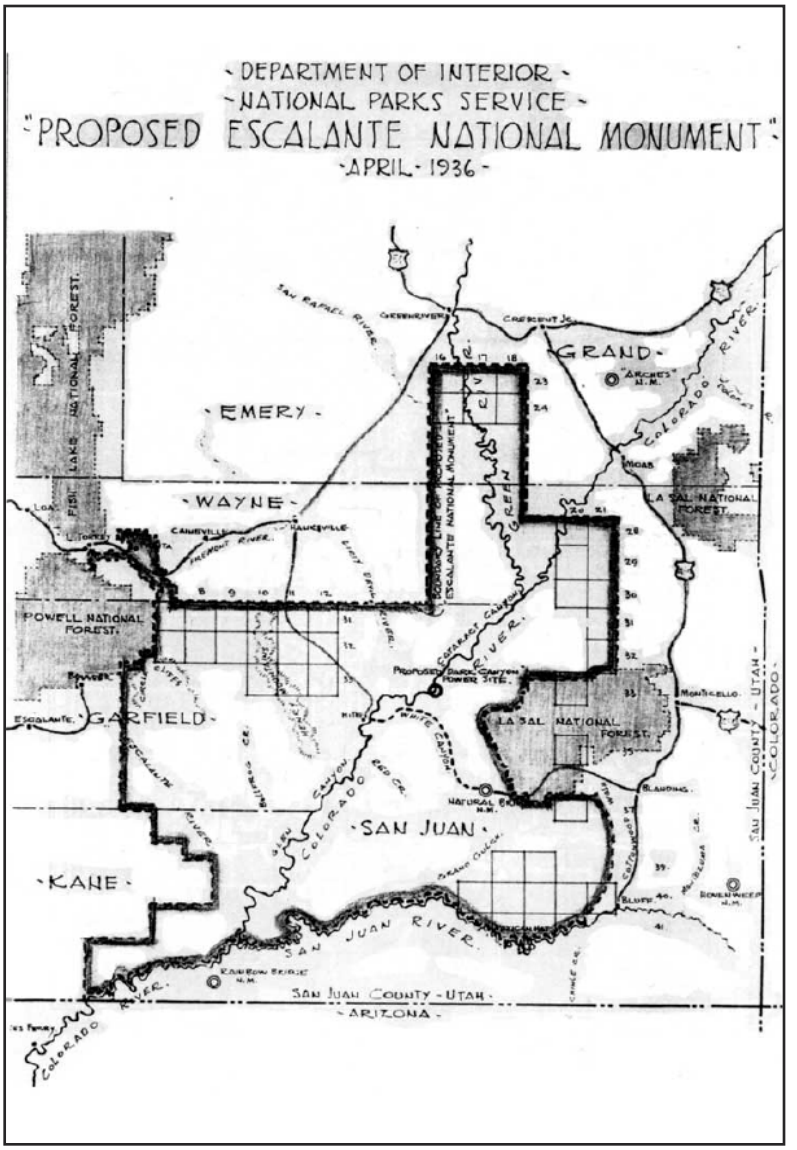
This description by M. R. Tillotson, NPS regional director in Santa Fe, in a report on the 1935 proposal (Newell, 1977), applies just as accurately today to Greater Canyonlands:

> *There is probably no single section of the entire scenic southwest which offers a greater variety and a more interesting array of spectacularly scenic effects than does the area under consideration. It is a land of deep canyons, narrow gorges, terraced plateaus, cliff-bound mesas, tortuous entrenched stream meanderings, large-scale buttes and temples, weirdly eroded formations, wind-swept desert-like slopes, standing rocks, high escarpments, natural bridges and colorings so gorgeous as at times to seem almost gaudy. All this on so gigantic a scale as to be difficult of comprehension. Distances are vast. Accessibility is extremely difficult—in many places practically out of the question. Canyons, virtually impassable, are everywhere . . . It would be impossible, even in a much more extensive report than this adequately to describe the country.*

Utah citizens initially supported the new conservation proposal. In April 1936, the Utah Planning Board declared that "an extension of authority, especially of the National Park Service, would be beneficial to the people of Utah." (Richardson, 1965) At the time, no more than 100 people lived in those 6,000 square miles—in Fruita and Hite. Nearly all the acreage was grazed, a livelihood for 463 families and their 26,290 cattle, 2,618 horses, 144,298 sheep and 534 goats. (West, 1936)

Despite the Planning Board's recommendation, grazing and mining interests shot down this visionary concept. Two more modest Escalante proposals of 4.5 million acres followed, one promoted in 1940 by Interior Secretary Harold Ickes. But none became law.

The grandeur of these proposals matched the scale of this "standing up country," (Crampton, 1965) yet



no protective designations existed for Greater Canyonlands when Bates Wilson arrived to work as Superintendent of Arches National Monument in 1949.

Wilson first took his pack horses into the backcountry of Canyonlands in 1951 (Wilson, 1967); he became the most dynamic proponent for creation of a park here, leading numerous jeep tours into the area for government officials, including Interior Secretary Udall in the sixties. Bates Wilson eventually earned the title, "Father of Canyonlands," and remained a passionate advocate for the region until his death in 1983.

Stewart Udall had his own vision for the park while flying over the area in 1961 (Udall, 2006). After a visit to Glen Canyon Dam and Rainbow Bridge with Bureau of Reclamation Chief Floyd Dominy, the dam-builder offered Udall a ride back to Denver in his plane. Dominy wanted to show Udall the site of his next big reservoir project just below the confluence of the Green and Colorado Rivers. Little did Dominy know that Secretary Udall saw quite another possibility when he looked down at Greater Canyonlands. Stewart Udall, Secretary of the Interior, native of the Colorado Plateau, looked out the window of Floyd Dominy's plane and said to himself, "Goodness sake, that's a national park!" (Udall, 2006).

Udall returned to Washington D.C. and asked his staff to begin working on a Canyonlands National Park plan. Negotiations followed. Utah's Republican Governor George Clyde and, especially, Senator Wallace Bennett (the single Republican member of the congressional delegation) led the charge to oppose any park boundaries that would "lock up" potential mineral resources—conflating the park proposal with discussion of the Wilderness Act also before Congress. Bennett used language familiar today to decry the "land-grab" that would lead to a "Udall-created wasteland" (Baker, 2008).

Secretary Udall countered that the stable economic future of the state lay with tourism. Two years later, the final boundary of Canyonlands National Park was a political accommodation negotiated by Governor Clyde and Senator Frank Moss (D-UT)—and far removed from Udall's original vision to protect one million acres and an uncompromised watershed within the entire Canyonlands Basin. But in that debate lay pioneering discussions of just what should be protected by a national park—adding ecosystem protection to the traditional concept of "scenery" for the first time (Baker, 2008; see also Williams, 2012).

When President Lyndon B. Johnson signed the 1964 public law creating Canyonlands National Park it contained 257,400 acres, a little over one quarter of its original proposed size. In 1971, with the addition of the Maze district, also with compromised boundaries, the park increased in size to its current 337,540 acres.

In the 1980s, the National Parks Conservation Association, working with then-Congressman Wayne Owens (D-UT), proposed legislation adding up to 750,000 acres to Canyonlands, which would have created a park similar to that originally conceived decades before. The Department of Energy's proposal to construct a nuclear waste repository in Lavender and Davis canyons just outside Canyonlands gave their work urgency. Six years of hard lobbying by NPS and others killed the ill-conceived nuclear waste dump, but the park expansion bill failed too, lacking Utah delegation support.

Resolution of the fundamental core of the problem—an artificial and unenforeable boundary—may require the action of the president.

In the late 1990s, Canyonlands Superintendent Walt Dabney introduced the Canyonlands Completion plan that would add 515,000 acres to the park. Dabney used watershed boundaries to embrace the entire Canyonlands basin, including side canyons and more of the Green River. Once again, the realities of Utah politics crushed this vision.

A University of Utah Honors College class looked at "Canyonlands completion" in 2009, interviewing citizens in Grand and San Juan counties. In their summary document, the students recommended expansion of the park along the Dabney boundaries as a "Canyonlands National Park and Preserve," to address "the fundamental core of the problem— an artificial and unenforceable boundary—while creating a management scheme to resolve concerns regarding future changes on the affected BLM lands." (Ballif et al., 2009) Greater Canyonlands National Monument could address and resolve these concerns so deeply held by the students.

A Case for the Antiquities Act

Appropriate for our cause, the history of conservation on the Colorado Plateau begins with President Theodore Roosevelt. After all, it was President Roosevelt who signed the Antiquities Act into law in 1906, granting the President of the United States the authority to protect public lands for the public good. The Antiquities Act resulted from concerns about protecting mostly prehistoric Indian ruins and artifacts, collectively termed "antiquities," on federal lands in the West, such as at Chaco Canyon, New Mexico. Removal of artifacts from these lands by private collectors, called "pot hunters" in the language of the time, had become a serious problem by the end of the 19th century. In 1902, Iowa Congressman John F. Lacey, who chaired the U.S. House of Representatives Committee on the Public Lands, traveled to the Southwest to see for himself the extent of the pot hunters' impact. His findings, supported by an exhaustive report to Congress detailing the archaeological resources of the region, provided the necessary impetus for the passage of the legislation.

The Act was intended to allow the President to set aside certain valuable public natural areas as park and conservation land. The 1906 act stated that it was intended for: " . . . the protection of objects of historic and scientific interest." These areas are given the title of "National Monuments." It also allows the President to reserve or accept private lands for that purpose. The aim is to protect all historic and prehistoric sites on United States federal lands and to prohibit excavation or destruction of these antiquities. With this act, such action can be done quickly, allowing bold action in light of a potentially immobile Congress. The Act states that areas of the monuments are to be confined to the smallest area compatible with the proper care and management of the objects to be protected. As with the Grand Canyon, some areas designated as national monuments have later been converted into national parks, or incorporated into existing national parks.

Before development interests dominated landscape conservation efforts in southern Utah, both Democratic and Republican presidents added preserves to the Colorado Plateau continuously for thirty years. In fact, Roosevelt used the Antiquities Act to proclaim Grand Canyon and Petrified Forest as national monuments. Mesa Verde became the first Plateau national park (designated by Congress) in that same year. At the request of local citizens, Roosevelt also set aside the forest reserves that would become Manti-La Sal National Forest.

Every Colorado Plateau national park or monument in Utah (except for Canyonlands) started as a national monument proclaimed by visionary presidents under the authority of the Antiquities Act:

- **Natural Bridge**s (Theodore Roosevelt: 1908)
- **Mukuntuweap** (William Howard Taft: 1909)
- **Rainbow Bridge** (William Howard Taft: 1910)
- **Dinosaur** (Woodrow Wilson: 1915)
- **Zion** (*incorporating the earlier Mukuntuweap NM*) (Woodrow Wilson: (1918)
  (*became a national park in 1919*)
- **Hovenweep** (Warren G. Harding: 1923)
- **Bryce Canyon** (Warren G. Harding: 1923)
  (*became a national park in 1928*)
- **Arches** (Herbert Hoover: 1929)
  (*became a national park in 1971*)
- **Cedar Breaks** (Franklin D. Roosevelt: 1933)
- **Zion** (the Kolob canyons) (Franklin D. Roosevelt: 1937)
  (*later added to Zion National Park*)
- **Capitol Reef** (Franklin D. Roosevelt: 1937)
  (*became a national park in 1971*)

Roosevelt's Secretary of the Interior Harold Ickes proposed a huge Escalante National Monument in the Greater Canyonlands/Glen Canyon region, and the monument just might have come to be if World War II hadn't intervened (Richardson, 1965). President Clinton referred to this unrequited dream in his speech at the Grand Canyon when he proclaimed Grand Staircase-Escalante National Monument in 1996:

> *If you'll permit me a personal note, another one, it was 63 years ago that a great Democrat first proposed that we create a national monument in Utah's Canyonlands. His name was Harold Ickes. He was Franklin Roosevelt's Interior Secretary. And I'm sorry he never got a chance to see that his dream would become a reality, but I'm very glad that his son and namesake is my Deputy Chief of Staff and is here today.*
>
> *And it was 30 years before that, 93 years ago, that a great Republican President, Theodore Roosevelt, said we should make the Grand Canyon a national monument. (Clinton, 1996)*

In the fall of 1996, with election season politics fully underway, President Clinton, against the breathtaking backdrop of the Grand Canyon designated 1.7 million acres of southern Utah's redrock cliffs as the Grand Staircase-Escalante National Monument under the Antiquities Act. Local Utah authorities scoffed at the designation, claiming in would stunt the local economy; angry ranchers demanded a repeal of the designation and catalyzed a lawsuit about "federal interference" (later struck down in the 10th Circuit Court); rumors raged that objectors burned Clinton in effigy.

Luckily, Clinton was not deterred by oppositional billboards and the outrage of a few. Instead, he recognized a long-term benefit to the entire community. What Grand Staircase-Escalante did for the local economy and environment was a boon. Not only has the protection of nearly two million acres of public land safeguarded some of our nation's most spectacular cliffs and canyons, but it also maintained responsible access for hunting, fishing, grazing, and more.

Presidents used the Antiquities Act without substantial opposition until 1943, when Roosevelt proclaimed Jackson Hole National Monument in Wyoming. Roosevelt did so to accept a donation of lands from John D. Rockefeller, Jr. for inclusionin Grand Teton National Park after Congress had refused to authorize the addition. Roosevelt's proclamation unleashed a storm of criticism about the use of presidential power to circumvent Congress and local authority. Congress finally incorporated most of Jackson Hole National Monument into Grand Teton National Park but prohibited any future use of Antiquities Act authority in Wyoming. Wyoming Governor Cliff Hansen led the charge against preservation in Jackson Hole, but by the

1960s reversed his position, stating "I'm glad I lost, because I now know I was wrong" (Wirth, 1980).

The Colorado Plaeau deserves to be understood as part of our common heritage, to be preserved as a national legacy.

On the Colorado Plateau, great leaps forward have come only once in each generation. In 1964, the bill establishing Canyonlands National Park passed Congress. And in 1971, substantially enlarged versions of Capitol Reef and Arches moved to national park status. Glen Canyon National Recreation Area, established in 1972, protects the remaining wild canyons surrounding Lake Powell, the reservoir behind Glen Canyon Dam—and extends far north into Greater Canyonlands.

The same era also saw triumphs in the Grand Canyon. Citizen lobbying prevented two dams, at Marble Canyon and Bridge Canyon, deleted from the Central Arizona Project in 1968. And, in 1975, Congress enlarged the park to include the full course of the Colorado River through Greater Grand Canyon, absorbing Grand Canyon and Marble Canyon national monuments and, with additional adjacent lands, nearly doubling the park's size to more than 1.2 million acres—a model for Greater Canyonlands (Anderson, 2000).

The Colorado Plateau and the Canyons of the Colorado deserve to be permanently protected, integrated and understood as part of our common heritage, preserved as a national legacy. Greater Canyonlands forms the unprotected core, the central jewel of that landscape.

A 12,000 YEAR HUMAN RECORD IN GREATER CANYONLANDS

The deeply incised canyons and stark sandstone mesas of Greater Canyonlands have hosted human life—families, bands, clans, and tribes—for as long as people have inhabited the New World. One thousand years ago, Greater Canyonlands teemed with residents; the canyons and mesas saw a denser population than they have since. Tens of thousands of archeological sites reveal the lives of these Ancestral Puebloan people who farmed corn, beans, and squash and decorated the cliffs with striking and mysterious artworks.

Greater Canyonlands has an archaeological legacy both visible and robust—a record of prehistory unrivaled in North America. The spare landscape and the dry climate preserve and yield traces of the past long lost in most other places. Public lands in San Juan County average 24 archaeological sites per square mile (BLM, 2010). This treasure trove of scientific knowledge can help unlock the mysteries of human adaptations to the deserts of the West. In a report on the cultural resources of Greater Canyonlands, noted southwest archaeologist Jerry Spangler summarized these resources as "a largely untapped library of 12,000 years of human history." (Spangler, 2011)

Paleo-Indian era

The Clovis complex founds Greater Canyonlands' history. Paleo-Indian people lived in Greater Canyonlands in relatively small numbers. Post-Pleistocene erosion has obliterated much of the evidence of their presence, characterized by distinctive projectile points often associated with the remains of now-extinct mammoth and other prey animals.

Two of the earliest Paleo-Indian sites in North America lie along the Green River within Greater Canyonlands. The Montgomery Site yielded Ice Age tools left by a concentration of families (Davis, 1985). A large, dense Paleo-Indian lithic scatter at the nearby Dawson Site indicated the presence of a camp near an ancient spring and playa (Byers et al., 2008). Dozens of other sites suggest that human groups moved freely throughout this canyon country.

As the Ice Age gave way to warmer climates, the Green River corridor and nearby springs remained a lush refuge for Late Pleistocene mammals—mammoths, mastodons, camels and sloths, and the massive short-faced bear and saber-toothed tigers that preyed on them. Such concentrations made easy prey for Ice Age hunters.

With the disappearance of large Pleistocene fauna during the Archaic period, humans in the Canyonlands became efficient harvesters of plants and seeds and hunters of small mammals like rabbits and deer. Technology evolved, documented by manos and metates to grind wild seeds as well as snares and throwing sticks called atlatls that amplified the power and range of spears. As the massive ice sheets melted away, the raging Green and Colorado rivers emerged as formidable barriers to social and economic exchange.

An 8,000-year interval separates the demise of the Pleistocene megafauna and their Paleo-Indian hunters and the arrival of agriculture and the flowering of farming cultures. This Archaic Period was a time of great diversity, as hunting and gathering people refined and perfected adaptations to the harsh desert environment of the Canyonlands region.

Thousands of dry caves and alcoves in Greater Canyonlands preserve evidence of dramatic adaptation of human populations to changing climates over 10,000 years—beginning with the Archaic Barrier Canyon people. Their living sites and spectacular rock art contribute unique records to North American archaeology (including a dry cave that yielded a 9,000-year old coiled basket, the oldest known in the Americas; Geib and Jolie, 2008).

Some of the most scientifically important cultural resources in North America lie in Greater Canyonlands, each with evidence that could help unravel secrets into our collective human past.

Nowhere is the layer cake of scientific evidence more complete than at Cowboy Cave in Horseshoe Canyon, where families returned each summer to the predictable harvest of wild plants, leaving behind remnants of their tool kits, fantastic baskets and mats, animal figurines (perhaps for hunting magic), and mysterious and striking ghost-like red images painted on the canyon walls. The stratigraphy of Cowboy Cave deposits starts 15,000 years ago, with dung left by mammoth, bison, horse, camel, and sloth, and runs through ten millennia of human occupation (BLM, 1991). Excavations at the cave yielded an incised pebble from an 8,700-year-old level, the oldest rock art in Utah with a known date, and unfired clay artifacts dated to 7,400–5000 B.C., the earliest clay artifacts on the Colorado Plateau (Jennings, 1980).

A great explosion of humanity and cultural richness occurred in the region about 2,000 years ago. The introduction of agriculture, ceramics, and the bow and arrow from the south enabled people to more successfully adapt to life in the arid canyons. Early Southwestern farmers built subterranean pithouses and wove exceptionally fine textiles. Populations grew rapidly, as the Anasazi and Fremont cultures became established and dominated the region. This period produced an unparalleled concentration of archaeological sites in Greater Canyonlands, "some of the most scientifically important cultural resources in North America, each with evidence that could help unravel secrets into our collective human past" according to Spangler (2011).

Ancestral Puebloan populations

At about 900 A.D., the Colorado River suddenly ceased to be a barrier. A massive migration of Ancestral Puebloan farmers swarmed into Utah, penetrating hundreds of miles from their ancestral homelands. Most of the archaeological evidence in the Canyonlands comes from this interval between A.D. 900 to 1300: scores of cliff dwellings along the Colorado River corridor; "forts" along the Green River—defensive outposts or early warning stations; and diverse rock art styles that signify distinct cultural identities. (Spangler, 2011)

Fremont and Anasazi/Ancestral Puebloan populations blended here in a unique hybrid. Greater Canyonlands lies at the heart of this unprecedented change, and sites found along the Green and Colorado rivers and their tributaries hold secrets that explain the rise and ultimate collapse of this network of ancient farming communities that cultivated corn where no corn can be grown today.

As suddenly as the Anasazi and Fremont cultures appeared in the region, even more abruptly their ways of life and their archaeological presence disappeared. In the late 13th century, burgeoning popula-

"Farmhouse Ruin" in the Greater Canyonlands region. © Scott Braden/SUWA.

tions encountered drier, hotter conditions, resulting in inconsistent crop yields, hunger, social strife, general chaos, and rapid shifts from farming lifeways—and even abandonment of much of the region. Greater Canyonlands holds the key to understanding these centuries when Ancestral Puebloan and Fremont cultures met, mingled, and collapsed.

Similar shifts occurred throughout North America at the same time, resulting in broad and deep changes to the Native cultural landscape just prior to the entry of Europeans. Deciphering the details of this great tragedy in the remote Canyonlands may shed light on how this widespread catastrophe devastated farming cultures across the continent, and perhaps yield insight into how modern populations might react to and deal with climate change.

The inheritors of Ancestral Puebloan culture—the modern Pueblo people—live far to the south in Arizona and New Mexico villages. The Diné, the Navajo people, live nearby in today's Navajo Nation. Ute and Paiute reservation communities flank Greater Canyonlands. All these native peoples retain a keen interest in seeing their wild resources and ancestral sites preserved.

The Hopi have rich oral traditions that tell of Hopi clan migrations throughout the Southwest, including southern Utah (Schroeder, 1985). Archaeological evidence places Hopi ancestors originally within the San Juan region of the Southwest. Sometime during the end of the 1200s, a prolonged drought forced these people to move away from the area towards the north, west, south, and east. The Hopi believe they have cultural affiliations with the occupants of these living and rock art sites and maintain ceremonial connections to this prehistoric homeland.

Prior to 1500, Utes left cultural markers in the San Juan region. Utes place religious and traditional importance on many land features throughout southeastern Utah.

The earliest known Navajo site in San Juan County is a hogan in White Canyon, west of Bear's Ears, dating to 1620. The Navajo identify the Colorado River watershed, including the Green River, as a place of religious and traditional importance based on creation stories (Molenaar, 2003). Navajos mention three important mountains in Utah in their ceremonies and myths—two of which lie in Greater Canyonlands: DzilDiloi (the Abajo Peaks) andShashJaa (the Bear's Ears) (Gilpin, 2001; Pachak et al., 1992).

Navajo connections to Greater Canyonlands remain strong. Utah Navajos have been mapping and recording these connections in the Dine Bikeyah project (Maryboy et al., 2012).

European influx

Europeans entered this landscape in the late 1700s, when Spanish explorer-priests rode north from New Mexico. The two branches of the Old Spanish Trail skirted Greater Canyonlands just to the north and south, defining and acknowledging the region's ruggedness and remoteness by avoiding it. Mountain man Denis Julien left the first Anglo-American inscriptions along Canyonlands rivers in 1836.

In the 1850s, the Mormon Church sent the first group of pioneers to this corner of southern Utah—the Elk Mountain Mission to the Moab Valley. The 1880 Hole in the Rock expedition brought the San Juan Mission of Mormon settlers to the nearby towns of Bluff and Blanding, just east and south of Greater Canyonlands. Prospectors, trappers, and cowboys followed.

John Wesley Powell passed through in 1869 and 1872 on his epic journeys down the Green and Colorado rivers through Greater Canyonlands and beyond. Powell and his men bestowed on this landscape some of the most lyrical and evocative names found anywhere in the West: Buttes of the Cross, Labyrinth Canyon, the Dirty Devil River. (Powell, 1875)

The remote and undeveloped nature of Greater Canyonlands protects historical sites that span the full history of this boom-and-bust West. As the nineteenth century turned to the twentieth, Butch Cassidy and the Wild Bunch used Robber's Roost and nearby canyons along the Dirty Devil as hideouts, a key stop along The Outlaw Trail (Warner, 1940; Baker, 1989). Old mining sites record the mostly busted dreams of prospectors from the late 19th century through the post-World War II uranium boom.

Vulnerable Resources

On any hike or drive through Greater Canyonlands, visitors can encounter traces of ancient cultures. Rich archaeological resources blanket the area: ingeniously built cliff dwellings contemporary with those of Mesa Verde still cling to canyon walls. Great houses, great kivas, and Chaco roads connect to Chaco Canyon, 150 miles away in New Mexico. Turkey pens and granaries that held their last stores of corn a millennium ago perch on inaccessible ledges. World-renowned rock art panels depict hunting scenes and village life—along with symbols whose meanings remain indecipherable.

The remote and hidden alcoves and overhangs of Greater Canyonlands offer tremendous research potential for future archaeologists. These resources remain vulnerable, as the fragile baskets and other perishable artifacts draw looters who destroy archaeological deposits for personal gain—though remoteness and lack of vehicle access have prevented serious vandalism. Protection of the full reach of Greater Canyonlands is necessary for proper care of the region's historic and prehistoric treasures—both discovered and undiscovered.

Archaeologist Winston Hurst says of Greater Canyonlands, "It just is unacceptable to me to have a powerful archaeological record out there that's being devoured by all kinds of destructive elements without trying to learn what it is capable of telling us about the human experience over time" (Hurst, 2008).

GREATER CANYONLANDS ECOLOGY

Greater Canyonlands encompasses high biodiversity, outstanding wildlife habitat, and rich ecological assemblages. The huge variety of geology and soil types coupled with elevations that range from 3,790 feet to 11,368 feet have resulted in a high diversity of ecotypes, from salt desert shrub to lush grasslands to alpine conifer forests (ArcGIS elevation analysis, USGS 2009).

Vegetation and soil crust

Greater Canyonlandssupports 960 species of plants—57 percent of all plants known to the Colorado Plateau Ecoregion (Albee et al., 1988). Indeed, the Canyonlands Floristic Province possesses greater plant diversity than any other floristic region in Utah (Cronquist et al., 1972; Davidson et al., 1996). Climate, position along plant migratory routes, and distinctive geologic history explain the high local rates of endemism (Welsh, 1978).

Rigorous conditions limit the number of plants capable of establishment and reproduction in any given area (Davidson et al., 1996). This results in small populations of unique plants that have evolved in relative isolation. Many of these species are so rare that they are easily imperiled by human actions such as uncontrolled off-road vehicle use and invading non-native species. And so, 21 federally listed Endangered and Threatened plant species survive here, including the dwarf bearclaw poppy, clay phacelia, and clay reed mustard (UDWR NHP, 2001). These species often have low reproductive potential, restricted geographic ranges, or substantial variation in population size, all of which makes them highly vulnerable to human disturbance.

Greater Canyonlands possesses another unusual ecological characteristic: numerous steep-walled and virtually inaccessible mesa tops that remain unimpaired by human activities, including livestock grazing (a near ubiquitous impact on plant communities elsewhere in the West). This isolation has resulted in multiple refugia with relict vegetation, where natural processes have continued unaltered by humans since the Pleistocene.

As witnesses to the past, these relict areas (Bowknot Bend in Labyrinth Canyon, for example, whose 1,080 mesa-top acres have been designated an Area of Critical Environmental Concern by the BLM; BLM, 1988) establish a baseline against which to measure human impacts on species composition, community dynamics, and biogeochemical cycles. Experiments already conducted in these special places include studies on grassland cover and species composition (e.g. Jeffries, 1987; Ambos et al., 2000). The Block, near Fiddler Butte, and Bridger Jack Mesa, above Indian Creek, present prime opportunities for new research.

Fragile biological soil crusts play a critical role throughout Greater Canyonlands. These crusts increase the stability of otherwise easily erodible soils, increase water infiltration in a region that receives limited precipitation, and increase fertility of xeric soils often limited in essential nutrients such as nitrogen and carbon (Johansen, 1993; Belnap et al., 1994).

In Greater Canyonlands, natural processes have continued unaltered by humans since the Pleistocene.

Destruction of crusts increases wind and water erosion of surface soils (Allison Jones, personal communication with Howard Wilshire, 2012) and triggers rapid loss of the underlying topsoil (Webb, 1983). This destruction of cryptobiotic soils can reduce nitrogen fixation by cyanobacteria, and set back the nitrogen economy of these nitrogen-limited arid ecosystems by decades (Belnap and Sharpe, 1995; Miller et al., 2001; Barger at al., 2005; Goldstein et al., 2009). A severe loss of nitrates threatens plants in nitrogen-poor arid environments and may eventually lead to desertification (Belnap, 1995).

Once crusts are destroyed, native ecosystem structure can deteriorate further when bare ground becomes available for colonization by exotic weeds (Belsky and Gelbard, 2000). Breaking up the physical and microbiotic soil crusts increases surface roughness, which favors cheatgrass germination (Tisdale and Hironaka, 1981). Intact cryptobiotic crusts reduce or prohibit weed establishment by preventing germination by weed seeds (Eckert et al., 1986; Mack, 1989). Even small reductions in crusts can lead to diminished productivity and health of the associated plant community, with cascading effects on plant consumers (Davidson et al., 1996).

The premier soil crust scientist, U. S. Geological Survey ecologist Jayne Belnap, conducted much of her research in Greater Canyonlands. Belnap says, “No matter what thread we pulled— soil fertility or soil sta-

bility or biodiversity—there was always a huge link between that ecosystem process and the soil crust. That's when I became convinced that the crusts were the key to many processes that we consider important in deserts" (Belnap, 2009). Belnap notes that damage from a bootprint, a bicycle track, or a vehicle tire can be irreversible: "The black lichens come back in 20 years, 30 years. But those colored lichens on soil crusts? They just don't come back" (Belnap, 2009).

Disturbance of soil crusts in Greater Canyonlands increases wind-deposited dust on snowpack in the Colorado Rockies. The dark-colored dust on the snow surface absorbs heat, which melts the underlying snowpack up to a month earlier than normal (Painter et al.,2006). Reduction of water quantity, combined with sediment entering the system from upriver, will further decrease water quality in the entire Colorado River Basin downstream (Belnap and Campbell, 2011). The Colorado River system is the water source for 27 million people in seven western states and Mexico. It is used to irrigate 3.5 million agricultural acres in the desert Southwest and provides water for large private industries, military bases, cities and wildlife.

The list of communities that depend on the sacred Colorado River is long. In the Upper Colorado River Basin, Colorado, Wyoming, Utah and New Mexico rely upon water from the Colorado River. In Colorado, the cities of Denver, Colorado Springs and more than 40 surrounding communities tap the river for resources. The headwaters of the Green River, a major tributary of the Colorado River, are in Wyoming and support 30% of the Wyoming's income and 13% of its people including those living in Rock Springs and Cheyenne. In Utah, two-thirds of the people are or will be served by water from the Colorado River as the Central Utah Project brings resources to supplement Salt Lake City and communities in 12 counties. In Utah, five national parks have rivers that are part of the Colorado River System.

Disturbance of soil crusts in Greater Canyonlands increases wind-deposited dust on snowpack in the Colorado Rockies.

A faster melting rate, prompted by dust on snow, can also mean an increase inflooding and less opportunity to store water in downstream dams. Increased temperatures associated with climate change will indirectly lead to increased wind erosion and dust emission on the Colorado Plateau (Munson et al., 2011). When the peak snowmelt occurs earlier, there is about a 5% reduction in water availability, which is more than 250 billion gallons. This is enough to supply Los Angeles for a year and a half; it is half of what Arizona takes down through its Central Arizona Project; and twice what the city of Denver uses annually for its water supply. Five percent is a huge amount of water lost to the Colorado River and those that depend upon it for life in the desert!

Wildlife

The highly diverse plant communities of Greater Canyonlandscreate habitat for rich wildlife communities. Many hundreds of species of birds, mammals, fish, and reptiles live here. This species list includes 27 animals on the State's Sensitive Species list, and seven species on the federal Threatened/Endangered/Candidate Species list, including the bald eagle, Mexican spotted owl, southwest willow flycatcher, yellow-billed cuckoo, Colorado pikeminnow, humpback chub, bonytail chub and razorback sucker (UDWR, 2005). Biological hot spots for both wildlife and plants include the river canyons of the San Rafael, Dirty Devil, Green, and Colorado rivers.

Most fish and wildlife species rely at some point in their life histories on healthy, free-flowing watercourses and riparian areas. Greater Canyonlands contains over 750 miles of perennial watercourses, most of which support riparian vegetation, including over 300 miles of the Colorado River (AGRC, 2005). While normally dry, the complex network of intermittent streams and washes leading to these rivers shelters oases with shallow groundwater and lush communities of cottonwood trees and their associated understory plant and animal life.

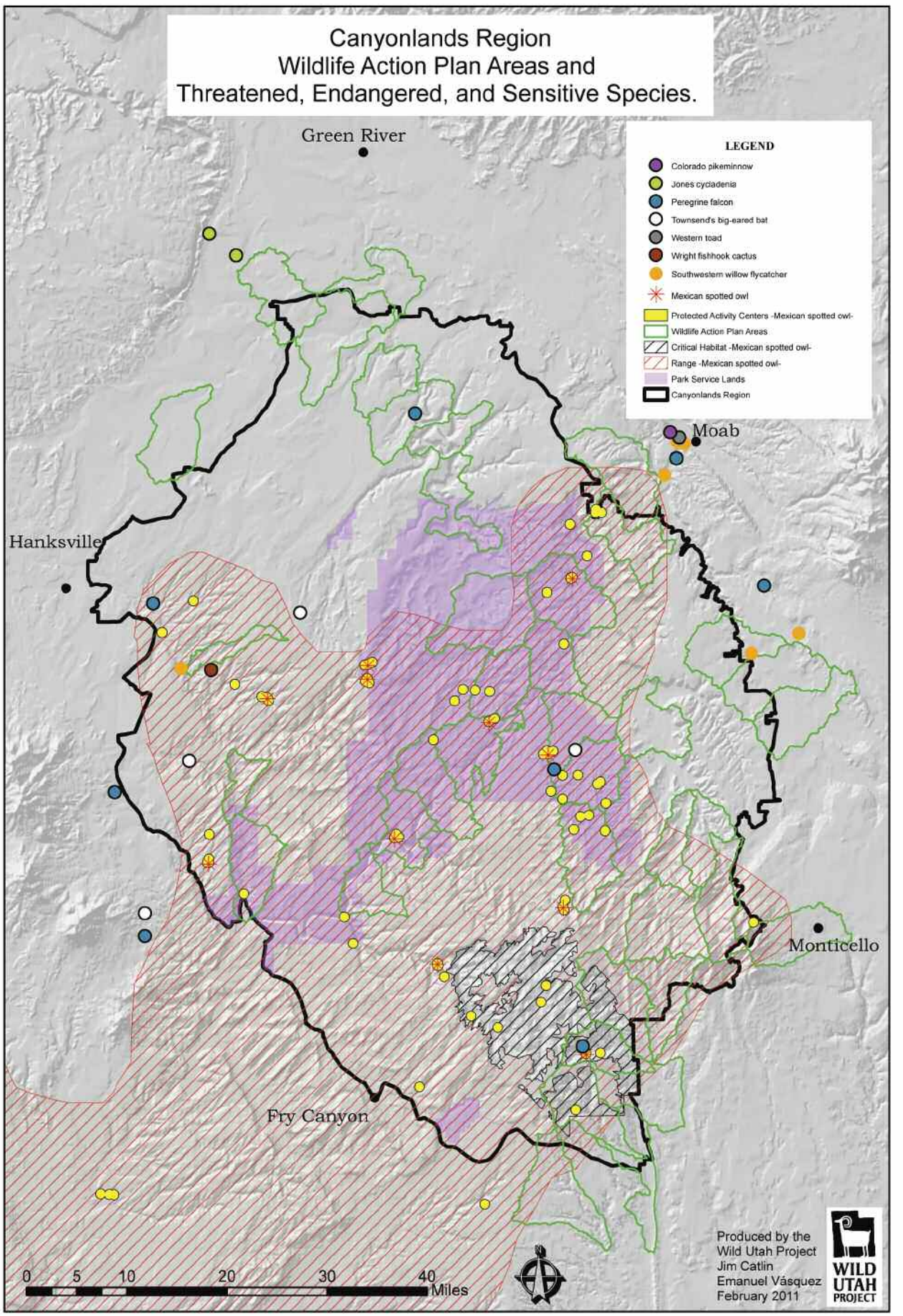
Stream-riparian ecosystems are among the most biologically diverse, productive, and threatened habitats in the American Southwest (Johnson, 1991; Stromberg, 1993;Minckley and Brown, 1994). Riparian habitats on the Colorado Plateau support diverse and unique assemblages composed of both distinctive species and of species more typical of surrounding uplands (Stacey, 1995; Naiman and Decamps, 1997; Sabo et al., 2005). Riparian ecosystems within Greater Canyonlands act as important migration corridors for larger species such as deer, mountain lions, and bears (Belnap, 1997). Riparian corridors connect to outlying wetland pockets that provide auxiliary nurseries for a variety of invertebrates, amphibians, and larval and immature native fish (Wolz and Shiozawa, 1995; Davidson et al., 1996).

Riparian ecosystems also offer refuges and stopovers for Neotropical migrant birds within otherwise dry and inhospitable habitat (Moore, 1990). Stream corridors attract recreational users, generating both knowledgeable conservation advocates and potential disturbancefrom motorized and non-motorized recreation,dams, and water diversions. Isolation from other riparian habitat hinders recovery, since recolonizationacross upland barriers is so difficult.

In Greater Canyonlands, nearly 300 perennial springs provide water that's vitalin a landscape that averages as few as five inches of precipitation yearly (ArcGIS overlay and analysis of springs, AGRC, 2010; BLM, 2010). Some of the most spectacular biotic assemblages and the rarest species in Utah are associated with these springs and seeps (Rushforth et al., 1976; Johansen et al., 1983). Isolation makes recovery from disturbance difficult. Like riparian woods, these seeps, springs, and hanging gardens provide important layover habitat for Neotropical migrantsand essential foraging and breeding habitat for resident vertebrates—especially amphibians.

The State of Utah's "Wildlife Action Plan" for Utah's sensitive wildlife recognizes the outstanding values of Greater Canyonlands and has delineated ten separate wildlife "Focus Areas" here (UDWR, 2005 and subsequent updated version). The Utah Division of Wildlife Resources chosethese areas as high priority for protection because they harbor particularly high densities of state sensitive species, while at the same time

Beef Basin provides important elk and mule deer habitat in the Greater Canyonlands region. © Ray Bloxham/SUWA.


Canyonlands Region
Wildlife Action Plan Areas and
Threatened, Endangered, and Sensitive Species.
Green River
Moab
Hanksville
Monticello
Fry Canyon
LEGEND
Colorado pikeminnow
Jones cycladenia
Peregrine falcon
Townsend's big-eared bat
Western toad
Wright fishhook cactus
Southwestern willow flycatcher
Mexican spotted owl
Protected Activity Centers -Mexican spotted owl-
Wildlife Action Plan Areas
Critical Habitat -Mexican spotted owl-
Range -Mexican spotted owl-
Park Service Lands
Canyonlands Region
0 5 10 20 30 40 Miles
Produced by the
Wild Utah Project
Jim Catlin
Emanuel Vásquez
February 2011
WILD UTAH PROJECT

containing good mixtures of the top ten most important wildlife habitats identified by the Division, such as aspen stands, mountain shrub, grasslands, and riparian areas.

Several Wildlife Focus Areas within Greater Canyonlands stand out. The Abajo Mountains Focus Area contains 100 percent of all Yavapai mountain snails known to exist in Utah as well as healthy populations of northern goshawk. The Elk Ridge Focus Area provides critical habitat for Mexican spotted owl, three-toed woodpeckers, and four species of state-listed bats. Indeed, Greater Canyonlands encompasses most of the critical habitat for the Mexican spotted owl (USFWS Critical Habitat Mapper). The Hanksville Desert Focus Area contributes high percentages of intact grassland habitat, as well as significant habitat for flannelmouth sucker, which is a Conservation Agreement species—the target of multi-agency management cooperation to beef up population size (UDWR, 2012).

The 500-strong San Rafael Pronghorn Herd, one of the largest in the state, covers 589,000 acres, almost all of which lies east of Highway 24 in Greater Canyonlands. Pronghorn prefer habitat in low rolling wide-open expanses, exactly the character of the San Rafael Desert northeast of Hanksville (BLM, 1988).

Crucial mule deer habitat includes the mesas above Indian Creek east of CanyonlandsNational Park, Beef Basin, lands in White Canyon surrounding Natural Bridges National Monument, and areas east of Comb Ridge. Extremely low road densities in the southern part of Greater Canyonlands favor elk. Essential elk habitat can be found in parts of Beef Basin, near Bridger Jack Mesa, upper Dark Canyon, and Arches Canyon. Bighorn sheep rutting and lambing habitat includes Lockhart Basin, Dark Canyon, and White Canyon—some of the most important bighorn sheep habitat in the region. (BLM, 2010)

Conservation of large, unroaded tracts of habitat yields high rates of return in preserving biodiversity and sustaining critical ecological processes.

Greater Canyonlands contains prime raptor habitat, as well—nest sites, foraging areas, and roosting sites. Riparian habitat supports the greatest diversity and number of prey species, thus providing the greatest food supply for raptors. Raptors using the area include bald eagles (wintering habitat along the Green and San Rafael Rivers). Ferruginous hawks, a candidate species, often nest in Greater Canyonlands (on the ground) and favor open terrain in the San Rafael Desert. Swainson's hawks pass through seasonally as they migrate between northern nesting areas and wintering areas in South America. (BLM, 1988)

Most of the State's identified Focus Areas in the Wildlife Action Plan overlap with large tracts of roadless lands (ArcGIS overlay, WUP, 2008). In fact, the Utah Wilderness Coalition identified 16 Bureau of Land Management wilderness units that lie (entirely or partially) within the Greater Canyonlands ecoregion.

The science of conservation biology has conclusively shown through empirical research that conservation of large, unroaded tracts of habitat yields high rates of return in preserving biodiversity and sustaining critical ecological processes (Noss and Cooperrider, 1994; Trombulak and Frissell, 2000, and references therein). The potential large-landscape conservation of a Greater Canyonlands National Monument would protect rare and susceptible native plant associations and wildlife from the impacts of plant collectors, hunters, and poachers who access by road; noise that affects animal behavior; off-road vehicles that illegally degrade habitat by crossing pristine areas between roads; aggressive exotic weeds that tend to colonize undisturbed habitat along roads; and pollution and erosion caused by roads and affecting watersheds. Safeguarding the diverse and abundant animal and plant life of the Greater Canyonlands region protects an ecosystem unparalleled in the United States.

ECONOMICS: GATEWAYS TO GREATER CANYONLANDS

Research shows that local economies flourish following the creation of new national monuments. This has been true for every national monument of over 10,000 acres designated since 1982 (Rasker, 2011). In

2011, Headwaters Economics looked at the productivity and performance of communities adjacent to 17 national monuments in the West. In every instance, employment, real personal income, and real per capita income all grew after designation. In no case did creation of a national monument lead to an economic downturn in these gateway communities. For example, in the region of Grand Staircase-Escalante, Garfield and Kane counties, those closest to the monument saw a direct increase in personal income as well as a 38% growth in jobs since the 1996 designation (Rasker, 2011).

In the wake of public lands' protection, locals and visitors that enjoy Utah's spectacular sites fuel the state's economy. Research also demonstrates that the outdoor recreation economy contributes approximately $5.8 billion annually to Utah's economy, supporting 65,000 jobs across the state (Outdoor Industry Foundation, 2006). Even broader, a 2012 report by the Outdoor Industry Association reveals that spending on outdoor recreation in the Western U.S., people who cash in on an opportunity to see beautiful vistas like those in Greater Canyonlands, generated $15.41 billion in federal tax revenue, and $15.38 billion in local and state tax receipts in 2011 (Outdoor Industry Association, 2012).

The gateway communities bordering Greater Canyonlands have chosen two distinct paths toward development/enhancement of their economies.

Just 31 miles off Interstate 70, Moab (Grand County) has capitalized on neighboring Canyonlands and Arches (designated national parks in 1964 and 1971, respectively). Moab now closely follows the national models of gateway communities and counties that benefit from protected landscapes. Most of the activities and resources that both tourists and residents love about Moab would not be possible without Arches and Canyonlands national parks. The outdoor recreation industry forms the foundation of the Moab economy, supporting additional growth in construction, health care, and other services as the area becomes increasingly attractive to second-home owners and retirees.

In contrast, Hanksville (Wayne County), Green River (Emery County), andBlanding and Monticello (San Juan County—the poorest county in Utah) all lie strategically close to protected landscapes and meet the minimum infrastructure requirements for gateway communities. But their community leadership has supported traditional resource-based industry to fuel their economies(Archie et al., 1989).

At a San Juan County hearing,Walt Dabney, former superintendentof Canyonlands National Park, noted that when it comes to designating federal lands, political forces too often dilute the original conservation vision. With Greater Canyonlands, said Dabney, we still have the chance to "do it right"—to increase protection for a significant ecological resource along geographical boundaries.

In the same way that Moab began to build its recreation economy as the uranium industry died out, Hanksville, Green River, Monticello, and Blanding can take advantage of the expanding outdoor recreation industry—and profit from their nearby protected federal lands.

In studies of "amenity-based"gateway communities, development has three phases (Howe et al., 1997):

- First, *natural resource-based development*—ranching, mining, or energy.
- Then, *tourism*—once "map presence" is established, a national focus like the designation of a new national monument attracts tourists.
- And finally, *lifestyle community*—innovative or entrepreneurial tourists decide that living next to a protected natural area meets the needs of their ideal lifestyle or financial bottom line. They move to a gateway community to live and/or work.

Rural communities adjacent to protected public lands are more economically successful than those that depend on large-scale energy development for their financial security. With the creation of a Greater Canyonlands National Monument, we provide neighboring communities an opportunity to thrive in a rural landscape and develop resilient local economies.

GATEWAY COMMUNITIES SURROUNDING GREATER CANYONLANDS

Moab (population: 5,100)

Moab has benefited from the protection of nearby Arches and Canyonlands national parks. The town—in an unusually open valley along the Colorado River, with slickrock wildlands in every direction—has become a major regional and international destination for travelers. The designation of a Greater Canyonlands National Monument will draw increased attention and visitation to the area.

One hundred and twenty small businesses in Moab depend on tourism. National monument designation will help protect the prime recreation areas that patrons of these businesses come to Utah to enjoy.

Green River (population: 950)

North of Canyonlands, east of the San Rafael Swell, and home to numerous commercial river guide companies permitted to run Desolation, Labyrinth, and Cataract Canyons, Green River lies less than three hours from Salt Lake City—a potential lure for travelers driving on Interstate 70 between California and Colorado.

Green River's current economy is made up of truck stops, motels, a few restaurants (including the usual franchises inside gas stations), commercial river company warehouses, the melon industry, and farms. Green River is the only town near Greater Canyonlands with daily Amtrak service.

A Greater Canyonlands National Monument would help Green River grow as a true gateway community. The John Wesley Powell River History Museum located here could expand to include broader interpretation of the natural and human history of the region.

Hanksville (population: 215)

Currently, Hanksville—the small town at the junction of Utah State Highways 24 and 95 just east of Hanksville—is a major "gateway" to Lake Powell and Glen Canyon National Recreation Area. This tourist stop consists of gas station/convenience stores, a restaurant, a burger shack, and a motel.

A visitor center in Hanksville could highlight and interpret Greater Canyonlands and provide education about the proper use of ATVs and OHVs around Factory Butte, just to the west. An intensively-used BLM-managed OHV area, Swing Arm City, lies between Hanksville and Caineville in the soft grey Mancos Shale badlands. With controversial impacts on viewsheds and on two species of Pediocactus (one threatened, one endangered), these badlands need more attention from our public lands managers.

Blanding (population: 3,400)

San Juan County's largest town, Blanding, lies at a crossroads: Utah Highway 95, which forms the proposed southern boundary to Greater Canyonlands, joins U.S. Highway 191 just south of town. In Blanding, Edge of the Cedars State Park features a massive ancient Puebloan site and houses the most significant artifact collection near Greater Canyonlands. And Blanding has a strong connection to the White Mesa Ute and Navajo Indian reservations just to the south.

Blanding made news in 2009 when federal agents conducted a sting operation to counter illegal trafficking in prehistoric artifacts. The town has a reputation for devotion to local control and self-determination. National monument designation would increase tourist traffic and open up Blanding to growth associated with outdoor recreation. Designation would bring more exposure (and possibly, financial support) to the Edge of the Cedars State Park, which has been in the crosshairs in recent legislative efforts in Utah to save money by closing state parks. The Edge of the Cedars museum could expand to include a Greater Canyonlands visitor center.

Monticello (population: 2,000)

Just 14 miles from the south entrance to Canyonlands National Park, Monticello (the San Juan County seat) has consciously chosen not to embrace tourism as an economic boon. Existing gas stations, restaurants, and motels cater to locals and truckers. U.S. Highway 191 leads south through Monticello into Arizona and New Mexico, while U.S. Highway 491 begins in Monticello and heads east into Colorado.

Though little exists now to encourage tourists to linger in Monticello, the Canyon Country Discovery Center planned by the Four Corners School of Outdoor Education on 48 acres north of town broke ground in 2011. With strong local partners, the Discovery Center will become a major interpretive center for Greater Canyonlands. And with monument designation, Monticello likely will become a full service gateway community.

Greater Canyonlands communities have more predictable futures with a national monument than without it. Designationbrings opportunities for community partnerships and education, and potential resolution to historical land use conflicts.Designating a Greater Canyonlands National Monument may be the key to a vibrantand stable economic future for neighboring towns. .

THREATS TO GREATER CANYONLANDS

Greater Canyonlands faces numerous regional threats that would permanently despoil its unique historic, environmental and cultural qualities.

Mining and Energy Exploration

Oil and gas drilling, tar sands exploration, and potash and uranium development in and around Greater Canyonlands pose a continued threat to the region's integrity, its cultural resources, and the recreational activities that form the stable basis of Southeastern Utah's economy.

Many of these proposed industrial developments would be visible from the rims of the inner Canyonlands basin and would carve up these wildlands, harming its air and water quality, fragmenting wildlife habitat, and degrading the region's spectacular scenery.

The monument area is surrounded by several million acres that have been identified for future development by extractive industries. Such developments are more appropriate outside of the culturally significant and recreationally important Greater Canyonlands region.

Roads

Previous resource management plans during the Bush Administration opened a sprawling network of dirt tracks in Greater Canyonlands to motorized use—2,500 miles on BLM lands alone. The BLM field offices often allow extensive ORV impacts. In a recent survey, nearly 80 percent of BLM managers said they could not sustainably manage their existing ORV areas (U.S. GAO, 2009). Some routes lead to park boundaries, encouraging illegal off-road vehicle use inside the national park. Thousands of jeeps, modified rock crawlers, ATVs, dune buggies, and dirt motorcycles descend on the canyons throughout the year. Organized events attract as many as 10,000 vehicles in a single week or weekend. Throughout Greater Canyonlands, ORVs have caused soil erosion, polluted water, displaced wildlife, eradicated native vegetation, spread weeds, and damaged archaeological sites.

Unfortunately, furthering the case for administrative protection of Greater Canyonlands, Utah Governor Gary Herbert has dramatically exacerbated road-related problems with unprecedented attacks on the state's public lands, including those in Greater Canyonlands. In May 2012, Herbert directed lawyers for the state of Utah to file 22 lawsuits against the U.S., asserting over 10,000 "road" claims. If successful, this litigation will prevent the National Park Service and BLM from controlling off-road vehicle use in the areas

traversed by these roads. Herbert also signed legislation demanding that the United States hand over 30 million acres of public land "on or before December 31, 2014."

Management

Greater Canyonlands hosts a quilt of management jurisdictions across the region—the U.S. Forest Service, the Bureau of Land Management, and the National Park Service. School trust lands and other state lands are also scattered within those jurisdictions. This mix results in a spiderweb of management priorities and decisions that can be inconsistent and often contradictory and incompatible. For example, four separate BLM field offices manage the public lands within Greater Canyonlands; each operates independently, with no overarching coordination. The attention and resource opportunities associated with a Greater Canyonlands National Monument would certainly help alleviate some of the challenges associated with mixed management in the region.

The federal government and independent scientists have identified Greater Canyonlands as one North American region most vulnerable to climate change (NPS, 2010); therefore mitigation of human disturbance in this region is increasingly important; a clear, unified management plan is essential.

CONCLUSION

The Obama Administration has the opportunity to create a lasting legacy on public lands through the protection of the Greater Canyonlands region under the authority of the Antiquities Act.

In an increasingly urbanized West, Greater Canyonlands serves as a key migration corridor for birds, mountain lions, pronghorn, and desert bighorn. The Canyonlands river system creates a riparian wonderland in a thirsty landscape. Not a single power line traverses this untamed expanse; few human constructions punctuate the horizons. Greater Canyonlands serves as a source of quiet renewal for backpackers, of pristine darkness for stargazers, of untold wonder and adventure for river runners, and of bold economic vitality for southern Utah. A perfect candidate for the Antiquities Act, Greater Canyonlands' ruins and rock art provide a glimpse of the cultures that came before.

The original 1962 National Park Service proposal for a grand CanyonlandsNational Park laid out a timeless argument for protection of this invaluable region:

> *The study area is the scenic heart of the Colorado Plateau Province. It contains a startling diversity of inspirational scenery, but is nevertheless a comprehensive whole. Although some of the individual features found within the area (arches, cliffs, canyons, colorful rock layers, semidesert flora and fauna) are also found in other units of the National Park System, many are not duplicated elsewhere and the total assemblage of features and their visual aspect is unique. Nowhere else is there a comparable opportunity to view a colorful, exciting, geologically significant wilderness from above, and then get down into its midst—and still not lose the atmosphere of remote wilderness.*

Incomparable. As Stewart Udall said, "*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.*"

Greater Canyonlands has come to us remarkably intact. With boldness and vision, a Greater Canyonlands National Monument will protect this landscape as a gift for this and future generations.

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