

OUT OF BALANCE

National Parks and the Threat of Oil and Gas Development







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Introduction

Last year was the centennial year of the National Park Service (NPS), a special time to celebrate those iconic places that reflect the varied dimensions of our nation's landscape, history, and culture. The centennial was an opportunity for Americans, and people around the world, to visit national parks and explore a slice of the American experience. In fact, more than 330 million people visited national parks in 2016, a record high for the third year in a row.

The strong and consistent worldwide interest in visiting America's national parks carries immense economic benefits for local communities. According to the National Park Service, national park visitors spent an estimated \$18.4 billion in 2016 while visiting national park sites. This spending reverberates, particularly in gateway communities, supporting additional businesses and resulting in diverse, reliable local economies. Overall, national parks generated nearly \$35 billion in economic activity while supporting over 318,000 jobs nationwide.

Cover: Zion National Park, Utah ©Mpetroff | Dreamstime **Left:** Angels Landing in Zion National Park, Utah ©Frank Bach | Dreamstime

In many parts of the West, our national parks exist next to or near other federal lands, including those managed by the Bureau of Land Management (BLM). The BLM manages millions of acres in the West under the principle of “multiple use,” providing for the varying uses and values of these lands so that they are “utilized in the combination that will best meet the present and future needs of the American people.”

These strong local economies deserve protection, as they are vulnerable if not given thoughtful consideration. Park visitors will not return if they do not have a positive experience, and that experience is often closely related to the environmental quality of the park. Because they do not exist as islands, cut off from their surrounding landscapes, national parks and their air, waters, wildlife, and cultural resources can be degraded by incompatible activities on adjacent lands.

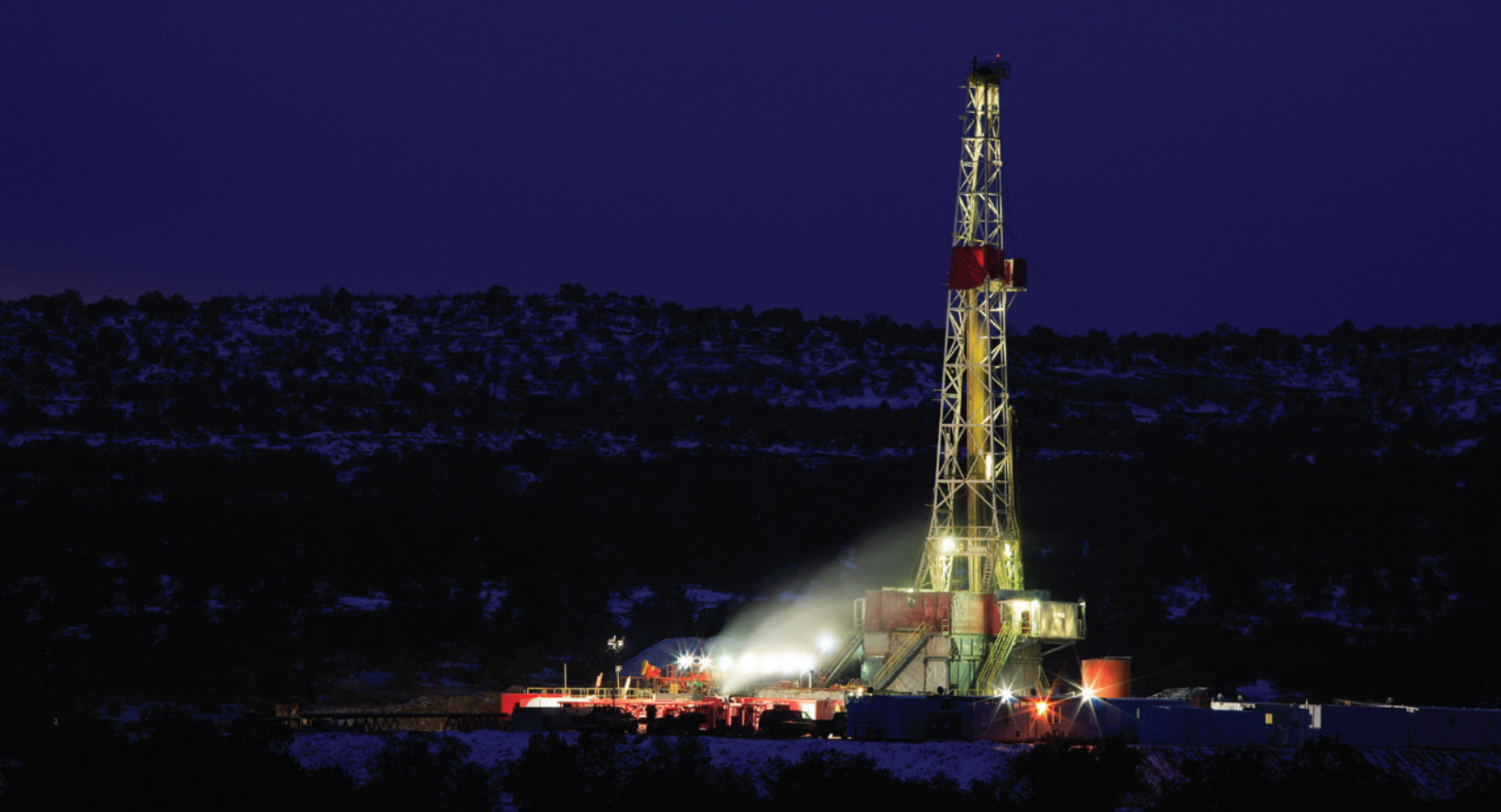
Oil and gas production and its associated infrastructure and industrial traffic can be incompatible activities when occurring on park-adjacent lands. In many parts of the West, our national parks exist next to or near other federal lands, including those managed by the Bureau of Land Management (BLM). The BLM manages millions of acres in the West under the principle of “multiple use,” providing for the varying uses and values of these lands so that they are “utilized in the combination that will best meet the present and future needs of the American people.” Oil and gas production is one of the uses managed by the BLM, along with outdoor recreation, fish and wildlife, and natural scenic, scientific and historic values.

Strong national park economies and the development of oil and gas resources are not mutually exclusive. The industries can coexist, but local communities and the BLM should work together to ensure that oil and gas leasing in sensitive areas like near national parks does not have the unintended effect of harming the park’s environment or visitation experience. There are places where the BLM has carefully conditioned oil and gas development on nearby and adjacent lands to protect park resources and they have been successful. And there have been others, some of which are described in the following report, that have not.

This report considers a set of national parks in the Southwest whose local communities are working to find a balance between steady park economies and oil and gas extraction. The current leasing and development conditions of the parks are explained, followed by looming threats. These are some of our most beloved national parks, and they’re at risk from the harmful side-effects of nearby energy development planned without meaningful Park Service or public engagement. In order to ensure that wherever leasing occurs it is “smart from the start.”



Above: Big Horn Sheep in Zion National Park, Utah ©James Phelps Jr | Dreamstime



How Does Energy Development on Adjacent Lands Harm Parks?

Without careful planning in these complex landscapes, national parks and other sensitive areas in the West can suffer harmful side-effects of oil and gas development happening nearby. The National Parks Conservation Association (NPCA) works to minimize or eliminate these impacts by supporting common sense standards for technology and safety on drilling infrastructure, and encouraging the BLM to engage with local communities and key stakeholders and work directly with the National Park Service to properly site development in areas that will reduce impacts to parks. Some of those impacts include:

Impacts to the National Park Visitor Experience

Even though oil and gas development is not occurring inside most national parks, a visitor may feel the presence of the increased development. As with any kind of recreational visit, a positive experience is critical to repeat visits and word of mouth. National parks are rightly beloved as being havens from the busy world, and management on adjacent lands should be done with care to balance those needs with other land uses. If not managed properly, visitor impacts include:

- *Viewshed Disruptions.* Hiking to a beautiful vista is one of the most fundamental joys of visiting a national park. Whether it's Angels Landing at Zion National Park or Delicate Arch at Arches National Park, scenic views are treasured park memories. However, development in those viewsheds can permanently alter the quality of those experiences. The BLM has worked successfully in some areas to take measures to minimize the impacts to viewsheds, through avoidance or stipulation.

As with any kind of recreational visit, a positive experience is critical to repeat visits and word of mouth. National parks are rightly beloved as being havens from the busy world...

Above: Drilling rig operating outside The Island In the Sky near Canyonlands National Park, Utah ©Rblekicki | BIGSTOCKPHOTO



Above: Tourists park outside the park, then take a shuttle into Zion National Park, Utah ©Steve Estvanik | Dreamstime **Below:** Arches National Park, Utah ©redhumv | IStock



- **Noise Impacts.** Oil and gas fields are industrial landscapes, and the noise can sometimes be heard for miles. Sounds from air compressors and truck traffic occurs around the clock and can be heard within parks, affecting the serene experience.
- **Night Sky Impacts.** Views of dark skies unimpaired by light pollution is an experience to increasingly fewer places. The burning off of excess natural gas, known as flaring, and industrial lighting can intrude on what can be some of the darkest night skies in the nation. The International Dark-Sky Association has recognized several western national parks, including Chaco Culture National Historical Park (NHP), Canyonlands National Park, and Hovenweep National Monument as International Dark Sky Parks.
- **Entrance Road Development.** Many parks, such as Mesa Verde National Park, have one road in and out, and park visitors frequently complain when park entrance roads become industrialized. The BLM and NPS can work together to find solutions to keep development away from or less visible on park entrance roads.
- **Connected Resources on Adjacent Lands.** National parks are not the only important resource on many western landscapes. In places like Chaco Culture National Historical Park, sacred cultural on adjacent lands are connected to the history or resources being protected at the park, and are equally important to our shared heritage. These connections should be respected and protected from fragmentation.

Air and Water Quality

The production of oil and gas using hydraulic fracturing emits more pollutants than traditional oil and gas extraction methods, including hydrocarbons, methyl mercaptan, carbon monoxide, nitrogen oxide and ozone. Additionally, high concentrations of methane and associated volatile organic compounds are often found near drilling sites. These pollutants can harm park visibility and air quality, and long-term exposure for neighboring communities can cause health problems, including neurological and respiratory issues as well as cancer.

The process of hydraulic fracturing involves pumping large amounts of water, mixed with sand and chemicals, deep into underground layers of rock. Once that chemical brine has done its job underground, much of it returns to the surface and needs to be disposed. This toxic wastewater cannot be reused except in other fracking jobs, and available disposal options—including reinjecting into the ground and transport to waste water treatment facilities—each carry a risk of spill and contamination.

Habitat Fragmentation and Wildlife Impacts

Animals do not recognize national park boundaries, and for many species that move across park borders, intense development of adjacent lands is a major problem. Species like pronghorn, elk, deer and grouse are finding their habitats fragmented by the development of well pads and associated roads and pipelines. The intense mechanical activities at well sites and the thousands of trucks on formerly quiet roads can drive animals off and increase collisions, and interrupt their natural cycles and behaviors.



How Does Drilling on Adjacent Lands Affect Gateway Communities?

Degraded air and water quality, fragmented habitats and fewer wildlife, and an industrialized park visitation experience can all work to harm the positive reputation of a particular park and discourage repeat visitors. Such impacts are troubling, because many park gateway communities rely on those park and recreational visitors for their economic stability.

The sustained growth of national park economies is key. Economists and market analysts increasingly recognize parks as economic engines for rural western economies. Parks are not subject to the same kinds of booms and busts that have always plagued the energy industry. For example, a BLM study of the economic value of the public

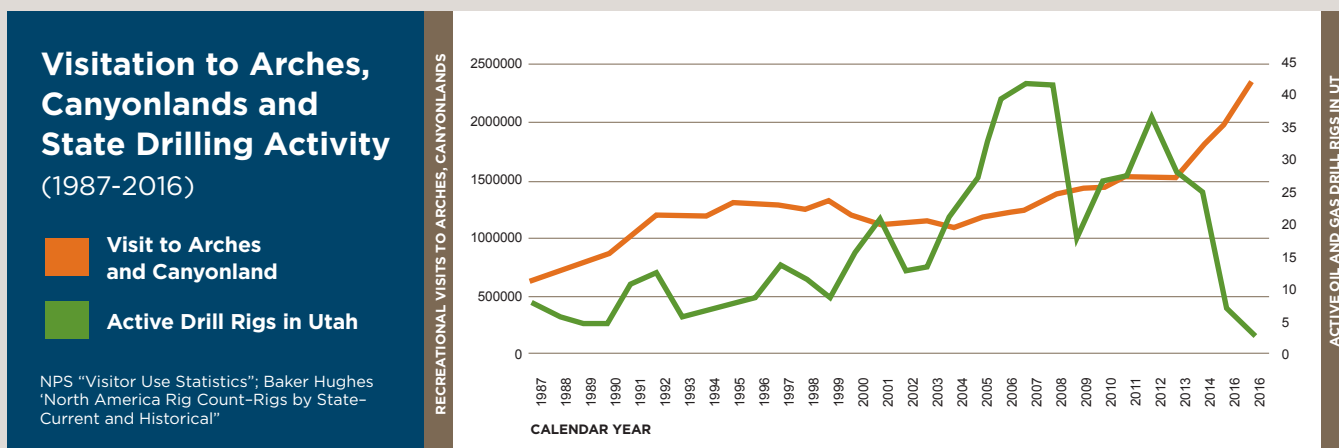
lands surrounding Moab from 2005 to 2013 concluded that the National Park, recreation and other types of local public lands visitation provides a “relatively recession-proof base of economic activity” compared to extractive industries like oil and gas.

Below is a graph illustrating the past thirty years of annual visitation to Arches and Canyonlands National Parks in Utah (in orange) as compared to the number of oil rigs operating in the state (in blue). Park visitation has shown clear, steady growth since 1987, rising from just over a half million visitors to nearly 2.5 million in those three decades. Rig counts, on the other hand, fluctuate wildly from boom to bust, with a low point of fewer than

five active rigs in the state in 2016.

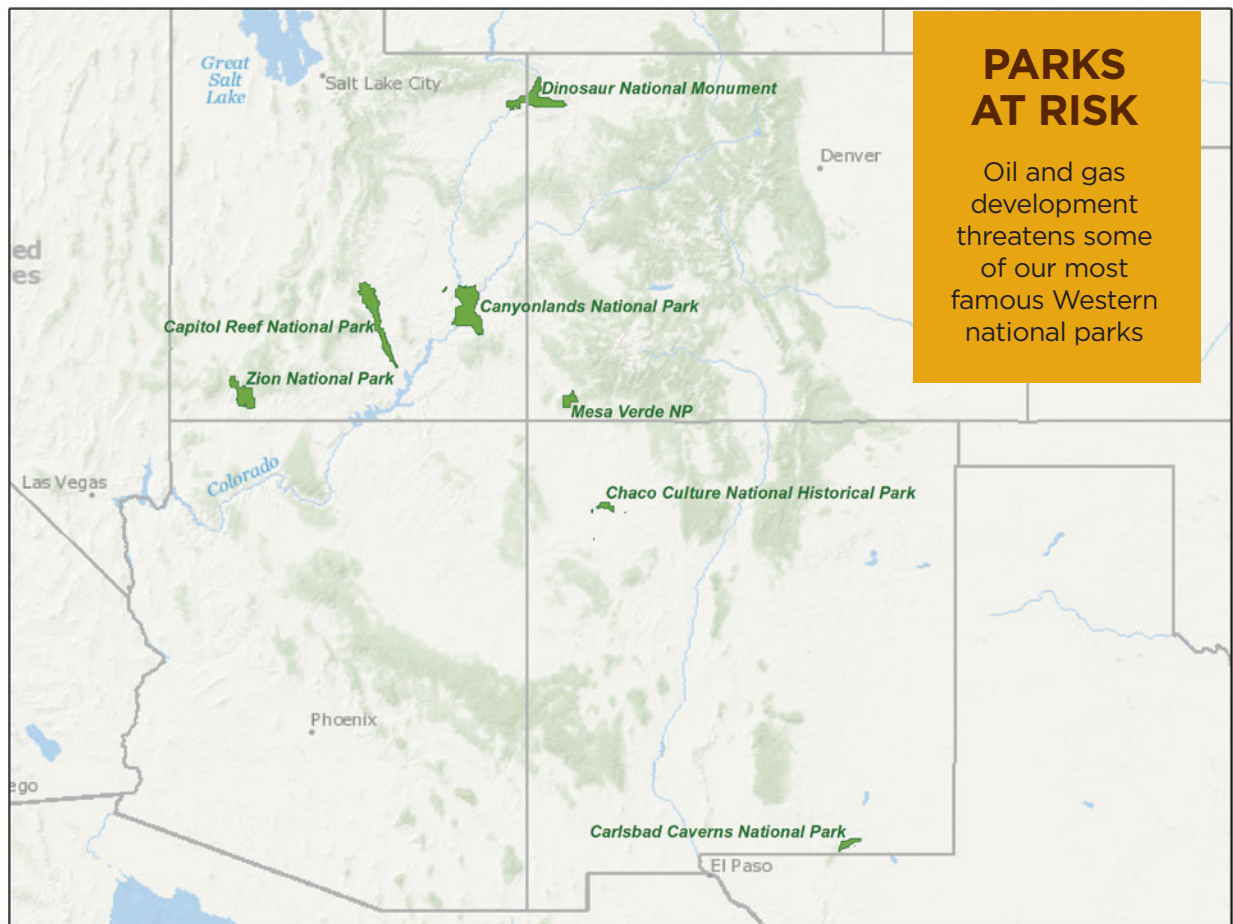
The oil and gas industry has and always will be volatile, subject to the whims of international politics, economics, and technological challenges in ways that the recreation and tourism economies are not. There is absolutely a place for both of these industries in the West, but the federal government should not permit the temporary riches of extractive industries to harm or interfere with the steady growth of the recession-proof economies that have grown up around our parks.

Above: Photographers and tourists watching sunrise at Mesa Arch, Canyonlands National Park, Utah. ©Donyanedomam | Dreamstime





National Parks at Risk from Encroaching Development



Canyonlands National Park

Created in 1964, Canyonlands National Park protects landscapes that are the very essence of Utah: red rock vistas, arches, buttes, and spires. Nearby Moab, Utah is a vibrant epicenter of regional tourism and recreation. The park protects some of Utah's most spectacular scenery, including prominent geological formations such as the Navajo Sandstone, the Kayenta Formation, and the Wingate Sandstone.

As the nearby community of Moab can attest, Canyonlands is a recreationist's paradise that draws people from all over the world. It is an especially well known destination for canyoneering, climbing, hiking, and rafting (the Green and Colorado Rivers meet within the park). Additionally, Labyrinth Canyon, a 68-mile stretch of the Green River that stretches north from the park boundary, is a calm, flat-water stretch of the Green with massive sandstone walls that display thousand-year-old petroglyphs and inscriptions left by nineteenth century explorers. Its accessibility and its historic, educational and cultural value make it an ideal place for outdoor family recreation.

Visitation to Canyonlands National Park has been steadily climbing for the last 5 years. Visitation has jumped from 450,000 visitors in 2012 to more than 775,000 in 2016. From just 2015 to 2016 the park saw an 18% increase. Utah's national parks are an enormous selling point for the state and draw people from around the world. The NPS estimates that taken together Utah's national parks generate over \$1 billion in visitor spending and almost \$1.6 billion in total economic output. While Canyonlands may not get the same visitation as its more famous Zion or Bryce neighbors, the proximity of so many national parks is part of the draw for many visitors to the state. Canyonlands itself draws almost \$47 million in visitor spending,

generating \$57.5 million in economic output and supporting over 700 full time jobs. The vast majority of visitors come from out of state.

Existing BLM Management and Threats

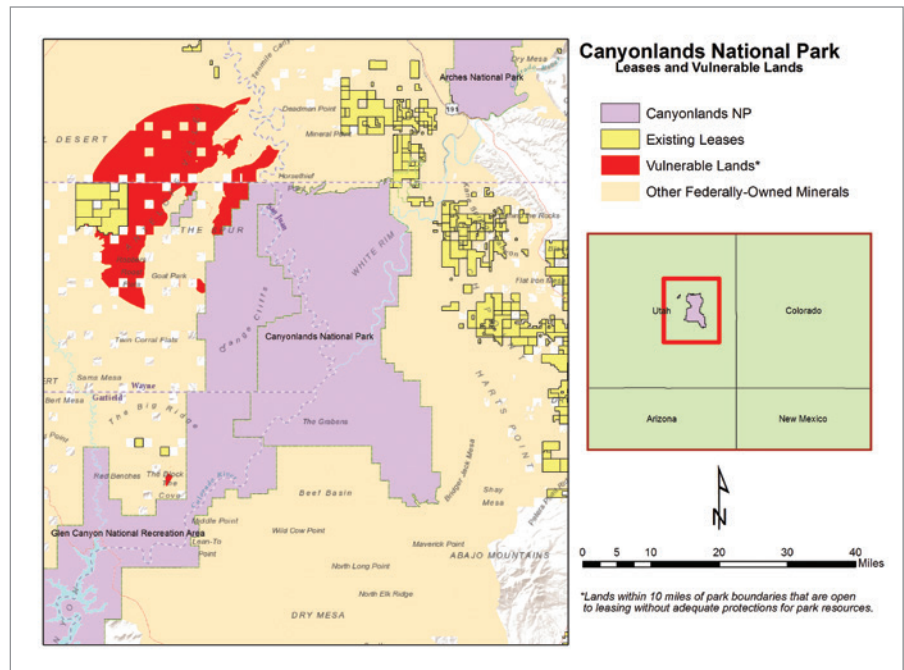
Current Conditions: On most of the federal lands around Canyonlands, particularly north and east of the park, BLM has struck a workable balance between energy development opportunities and protections for park resources. To protect iconic vistas from within Canyonlands, for example, BLM requires that operators drill horizon-



tally to access minerals beneath lands visible from key observation points within the park. There are also decibel-based noise limits on oil and gas operations near the park to protect the soundscape within its many backcountry areas. Surface operations are also prohibited along the Colorado and the eastern rim of the Green River, along Labyrinth Canyon.

Threats: There are a significant number of existing leases on federal lands north and east of Canyonlands, as well as some scattered, additional leasing in a mostly unprotected area northwest of the park, in the San Rafael Desert. New development in the San Rafael Desert could have negative impacts on the west side of Labyrinth Canyon (on the western rim of the Green River) and Canyonlands' Horseshoe Canyon Unit. While BLM is in the process of re-writing its management plan for this area, that process is still ongoing and park resources remain vulnerable to development in this area, even though lands east of the park are well-protected.

Opposite Page: Zion National Park, Utah ©Tetra Images **Left:** Canyonlands National Park, Utah ©Kravka | Dreamstime



Capitol Reef National Park

Capitol Reef was first protected as a national monument under the Antiquities Act by President Franklin D. Roosevelt in 1937. It became a national park in 1971, and contains a remarkable, world renowned landscape filled with cliffs, canyons, domes and rock bridges along a 100-mile geologic monocline. The park is home to a rich cultural history including evidence of archaic hunters and gatherers, Fremont culture, and early Mormon pioneers.

The geologic centerpiece of the park is the “Waterpocket Fold,” a 100-mile long wrinkle in the earth’s crust. Hikers can enjoy those feature and many more from the park’s 200 miles of hiking and backcountry trails, or in taking advantage of its developed, primitive and backcountry camping options. In 2015, Capitol Reef became the seventh unit of the National Park System to achieve designation as an “International Dark Sky” park.

Capitol Reef has experienced a dramatic rise in popularity over the past several



years, which is driving more business and revenue to local hotels, restaurants, outdoor retailers and outfitters. Recreational visits to Capitol Reef climbed from 660,000 in 2013 to 790,000 in 2014 and 941,000 in 2015. In 2016, Capitol Reef hosted 1,065,000

recreation visitors, an all-time record across its 80-year history. In 2015, park visitors spent an estimated \$66.6 million in local gateway regions while visiting Capitol Reef National Park. These expenditures supported a total of 944 jobs, \$24.7 million in labor income, \$3.5 million in value added, and \$76 million in economic output in local gateway economies surrounding Capitol Reef National Park.

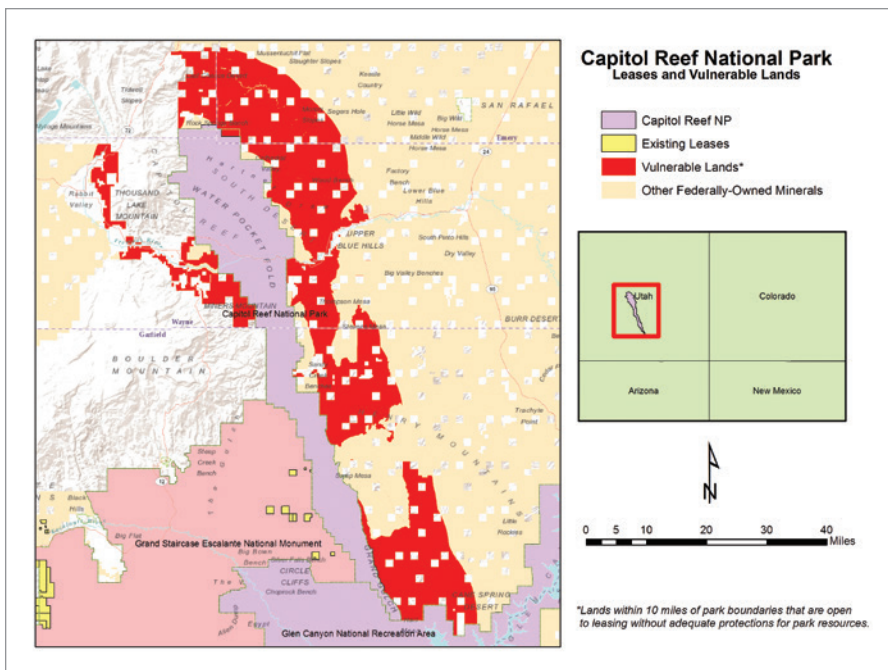
Existing Development and Threats

Current Conditions: At present, lands around Capitol Reef are mostly unleased and undeveloped, but there has been past leasing near park boundaries, and industry is now expressing renewed interest in the area. The BLM manages the federal lands that surround Capitol Reef under a 2008 management plan.

Threats: In preparing the 2008 plan, BLM considered a broad suite of park-specific protections, including protections to limit impacts from light and noise pollution, to preserve scenic values and viewsheds, and to protect connected recreation and wilderness-quality resources on neighboring federal lands. However, BLM ultimately decided against and declined to adopt these protections in its final plan.

Although past energy development around the park has been limited, the absence of protections for Capitol Reef on neighboring BLM lands is especially worrisome in light of recent leasing proposals. In 2015, BLM proposed to sell more than a dozen leases just north of the park, in the San Rafael Swell area, but ultimately deferred the sale in response to protests and objections by historic preservationists and the Park Service. Threats remain, though—BLM is now considering a proposal to lease about a dozen parcels in the San Rafael Swell as part of its December 2017 lease sale.

Above: Horseshoe Canyon’s Holy Ghost panel Canyonlands National Park, Utah ©milehightraveler | IStock



Carlsbad Caverns National Park

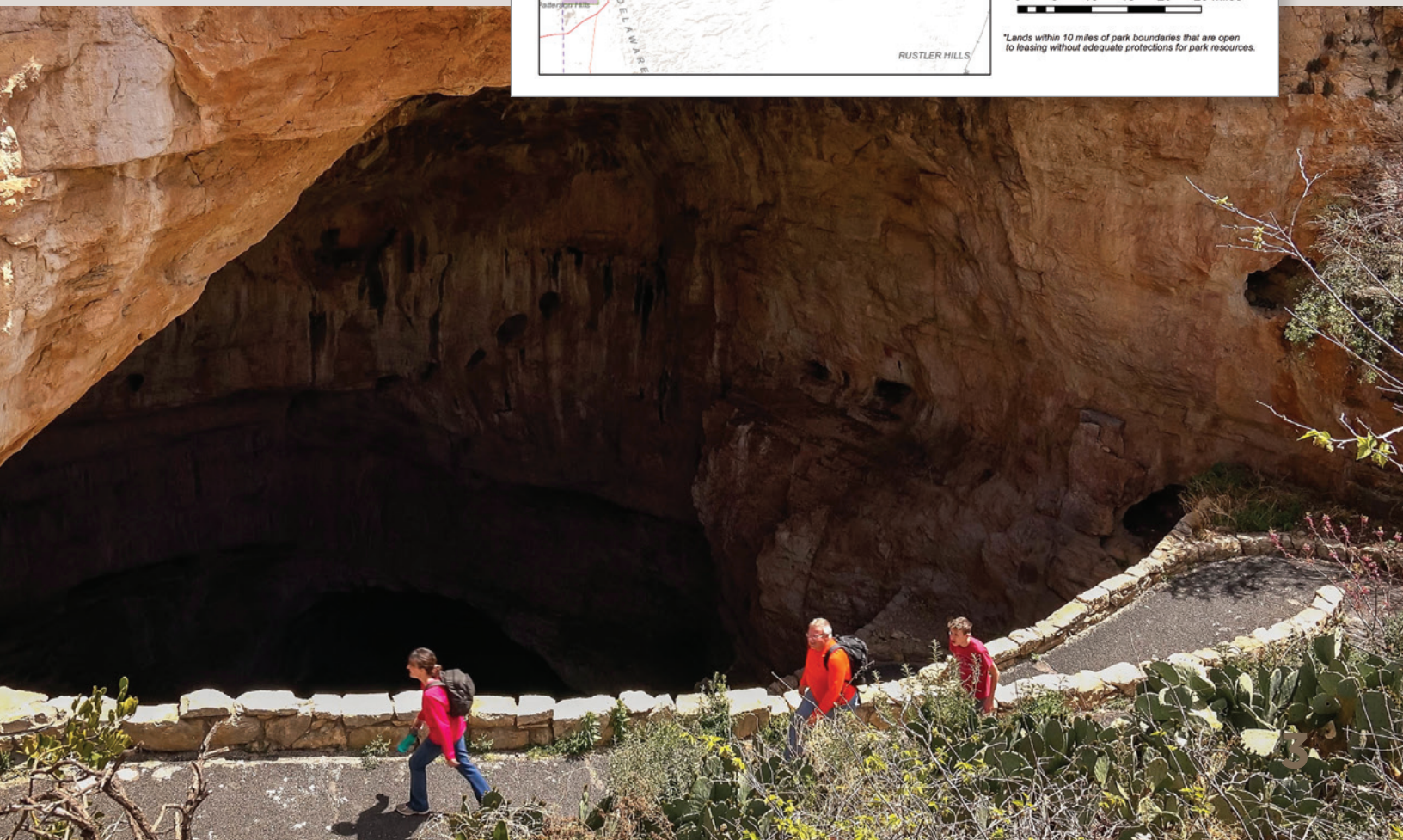
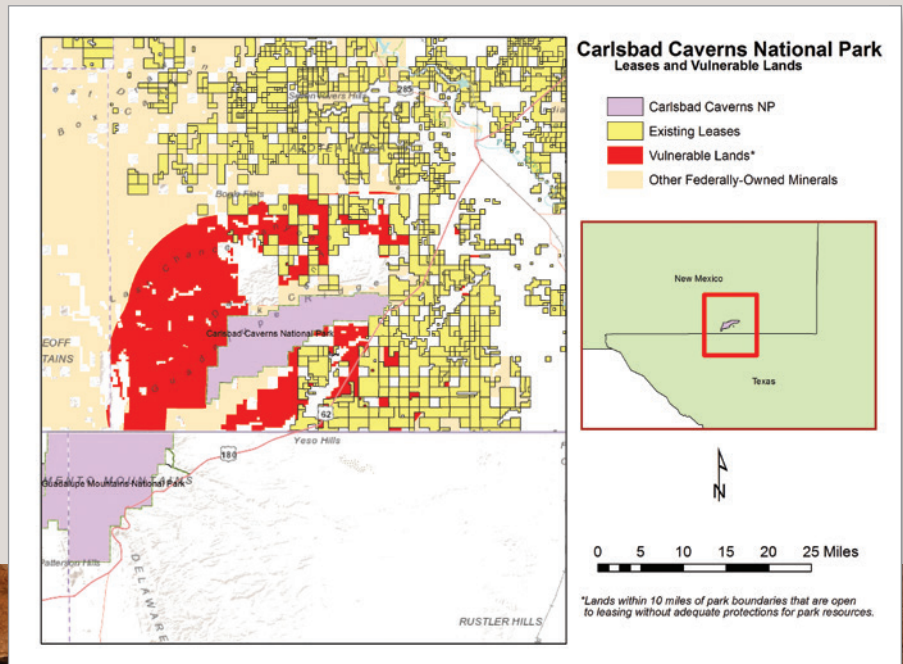
Carlsbad Caverns National Park was designated as a monument in 1923 and then a park in 1930. The caves and cavern systems underlying the park are some of the more famous and extensive in the world, and include more than 115 underground limestone caverns. Most famous are its primary, most accessible Carlsbad Cavern Cave, and the Lechugilla Cave, a 136-mile labyrinth that is still being explored and mapped.

NPS advertises the park as “a perfect spot for viewing the wonders of the night sky due to its location far from city lights,” and the park currently hosts several night sky events each year. However, due to widespread flaring in the Permian Basin, “the view from atop Carlsbad Caverns National Park” is now marred by “hundreds of lights and torches glow[ing] amidst the dark.” Carlsbad also protects some of the best remaining wildlife habitat in

the Chihuahuan Desert. Cave habitats support a wide array of sensitive cave-adapted species ranging from reptiles, amphibians, and invertebrates to birds, bats, and larger mammals. The resident bat population exceeds 400,000 and swells to nearly 800,000 during seasonal migrations. The area in and around the park also provides habitat for several species of big game, including elk, mule deer and pronghorn.

The breadth and density of oil and gas development around Carlsbad Caverns is one of the factors that has already taken a toll on the park’s popularity. In the 1980s, Carlsbad received more than 700,000 visitors every year, but from 1993 to 2016 visitation decreased from 690,000 to 470,000, more than 30%.

Below: Natural Entrance at Carlsbad Caverns National Park, New Mexico
©Crackerclips | Dreamstime





During this same 15-year period, oil and gas production in Eddy County, where the park is located, more than tripled.

Existing Development and Threats

Current Conditions: Management of lands around Carlsbad Caverns is severely tilted toward significant oil and gas extraction, and the park is already feeling the effects. The Permian Basin, in which the park sits, is one of the most developed oil and gas regions in the United States. Federal lands around the park overlap with 20 major oil and gas plays and 70% of the local BLM field office is already leased for development. Numerous existing leases, wells, roads and rigs fall directly adjacent to park boundaries.

BLM is currently in the process of revising the existing resource management plan that governs the Carlsbad Field Office. However, under the existing plan, the vast majority of lands around the park, including lands along its border, are open to leasing and oil and gas development without any protections for park resources, including its extensive system of caves. Although the existing plan does protect two small areas that make up key park viewsheds, it leaves other, additional viewsheds unprotected, omits protections for noise and light pollution and does not

limit the density of leases, wells and development on nearby lands.

Threats: The Park Service has repeatedly expressed concerns about the threat that nearby oil and gas development is having on Carlsbad. In its World Heritage site nomination in 1995, for example, the Park Service stated that “[t]he only threat that faces the park is oil and gas exploration near its borders....” Eddy County received an “F” rating for air quality from the American Lung Association due to high ozone levels associated with combustible fuels. With over 25,000 oil wells in the region, unchecked flaring is impacting, and will continue to impact, air quality, and public health if it is not mitigated.

The park’s famous cave systems are also at risk. A 2007 NPS Geologic Resource Evaluation Report elaborated specifically on how drilling could impact the park’s cave system: “Hundreds of producing oil and gas wells have been drilled north, east, and south of Carlsbad Caverns National Park. Exploratory wells have been drilled within a few thousand feet of the north and east boundaries of Carlsbad Caverns, and some of these have encountered voids at the same depth as major passages in Lechuguilla Cave (NPS 1996). At least 61 wells drilled near the park have



encountered lost circulation zones in the Capitan and Goat Seep Formations, suggesting that unexplored cave passages were intersected during drilling (NPS 1993, 1996). Substantial hydrocarbon reserves and known cave resources exist immediately north of the park boundary. It is probable that exploratory drilling will intersect openings that connect with caves in the park. Resources inside the park could be at risk of contamination from toxic and flammable gases and other substances associated with the exploration and production of oil and gas.”

Despite the density of existing drilling and development around park boundaries, and the ongoing revision to the current management scheme for lands around the park, BLM continues to offer more leases on sensitive lands near Carlsbad. Currently, BLM is proposing to lease 8 new parcels about 20 miles north of the park, some of which fall on the few remaining portions of well-preserved, wilderness-quality lands in the area.

Above Left: Fajada Butte in Chaco Culture National Historical Park, New Mexico ©Golasza | Dreamstime

Right: Stalactites in Carlsbad Caverns National Park, New Mexico ©John Blanton | Dreamstime

Chaco Culture National Historical Park

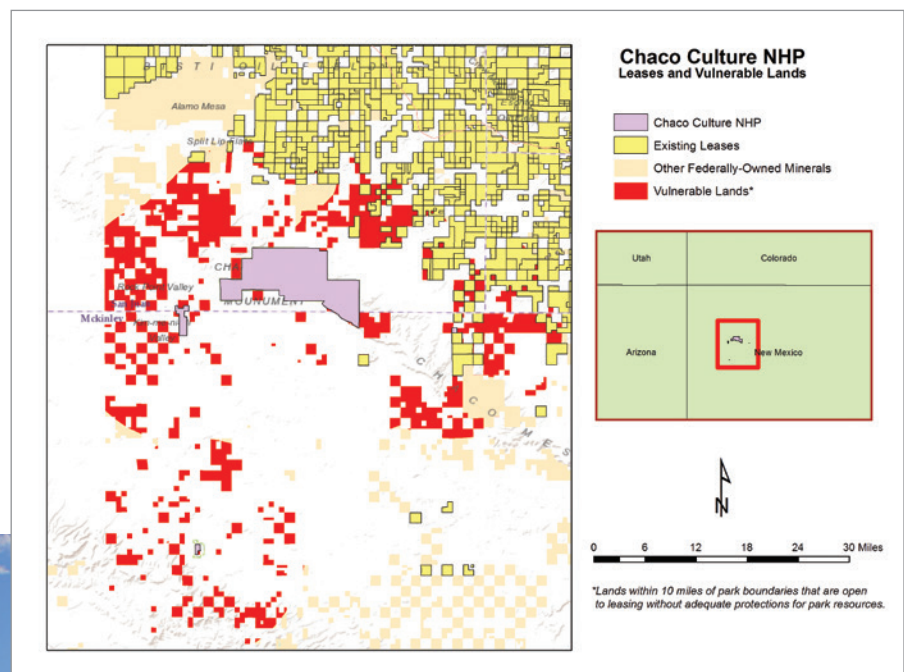
Chaco Culture NHP, and its network of connected sites, is one of the most important archaeological and historical sites in the country, recognized by UNESCO as a “World Heritage” site. The canyon that now makes up Chaco Culture NHP was the center of an ancient civilization that occupied the region for several hundred years around 1000 CE. These Chacoans are the ancestors of modern day Pueblo tribes. They left behind a rich and invaluable collection of connected cultural sites, artifacts and structures that help us to construct an important part of the Southwest region’s history, and that remain sacred to modern-day Native American peoples.

The cultural and archaeological centerpiece of the park is Pueblo Bonito, a massive, ancient “great house” made of exquisite stone masonry containing hundreds of rooms. In addition to sites and structures in the park, there are thousands of connected cultural structures and artifacts on nearby

federal lands outside park boundaries, including ancient “roads” that connect the various sites. The park offers astronomy classes and interpretive programs that teach visitors how the Chacoans designed elaborate ancient paths, roads, structures, and even entire villages to align with solstices, equinoxes, and other astronomical phenomena. The Park Service added an observatory to the park in 1998, and in 2013 Chaco became the fourth U.S. national park designated as an International Dark Sky Park by the International Dark-Sky Association.

Recreational visits to Chaco have declined significantly over the past twenty years, from 113,000 visits in 1997 to 54,000 in 2016, according to park records. The decrease in visitation coincides with a significant increase in oil and gas leasing, drilling and development in the San Juan Basin surrounding Chaco—this development is already affecting Chaco’s popularity. However, visitation to Chaco has recovered some in recent years, as

Below: Kin Kletso, Chaco Culture National Historical Park, New Mexico
©Wilsilver77 | Dreamstime





visits increased from 30,000 in 2013 to 38,000 in 2014 to 39,000 in 2015 and 54,000 in 2016. In 2015, park visitors spent an estimated \$2.2 million in local gateway regions while visiting Chaco. Half of this money went to nearby hotels and restaurants, many of which are in Farmington and Bloomfield, north of the park.

Existing Development and Threats

Current Conditions: BLM's Farmington Field Office, which surrounds Chaco Culture Canyon NHP, is one of the most densely leased, drilled and developed areas in the country. BLM has already leased the vast majority of federal minerals in the Field Office, and only a small area around the park remains undeveloped. Complicating matters, land ownership around the park is a checkerboard of federal, state, private and tribal lands, meaning that protecting Chaco and its resources from future impacts will require cooperation and coordination among tribal governments, many

different agencies, landowners, stakeholders and property owners.

Although BLM is in the process of writing a new management plan for federal lands around Chaco, it is currently managing the area under a plan finalized in 2003. Like many of the plans highlighted in this report, the 2003 plan opened almost all federal lands around Chaco Canyon—including lands directly adjacent to the park and its entrance road—to leasing and development, without specific protections for park resources. The only mitigation for cultural sites connected to those in Chaco Canyon is to prohibit development on small islands around each site, rather than in any comprehensive, landscape-level plan.

Nearby communities also face significant public health risks and impacts related to methane leaks and groundwater contamination from nearby hydraulic fracturing. Traditional use areas, sacred sites, livestock grazing and the livelihoods of local

Navajo communities are under threat.

Threats: Rigs, roads, pipelines and other infrastructure already surround many of the connected cultural and archaeological sites outside the park (many of which are designated “UNESCO World Heritage” sites). To access these sites, visitors often drive through a web of oil and gas development and park at developed drilling areas like pump-jack stations. And although BLM has paused drilling in a 10-mile radius of the park while it completes its new management plan for the area, it continues to lease federal lands and minerals near the park outside of this protected area—in January, for example, BLM leased 4 additional parcels about 25 miles northwest of Chaco Canyon. Some of these lease sites are visible from the highest points in the park.

Above: Kiva Ruins at Pueblo Bonito, Chaco Culture National Historical Park, New Mexico ©Kojihirano | Dreamstime

Dinosaur National Monument

Most famous for its hundreds of paleontological sites and a world-renowned collection of fossils in Dinosaur Quarry, this park on the border of Utah and Colorado is home to much more than just its namesake bones. The Green River, a tributary to the Colorado River, meets with its own largest tributary, the Yampa River, in the heart of the park, helping to support more than 1,000 native plant and animal species throughout the area. The monument is also popular with white-water rafters, who flock to the Yampa as well as Echo Park, an iconic stretch of the Green River just downstream of the confluence. It also has numerous established and backcountry trails and campgrounds.

Dense nearby oil and gas development is already driving down visitation and revenue to Dinosaur NM, which has seen a decline in visitation of over 40 percent from 1999–2014. Recreation visits have significantly declined since the 1990s, when oil and gas development began rapidly increasing on federal lands around the monument. In 1997,

According to a recent analysis by the BLM, nearby oil and gas development is already driving down visitation and revenue to Dinosaur. From 1999 to 2014, visitation to the monument fell more than 40 percent, while oil and gas production in Uintah County more than tripled. In 2012, ozone levels around Dinosaur were worse than those in New York City. Still, visitors to Dinosaur in 2015 spent more than \$17 million in local gateway communities, which supported more than 200 jobs in northwest Colorado and northeast Utah, in towns like Vernal, UT, and Rangely and Craig, CO.

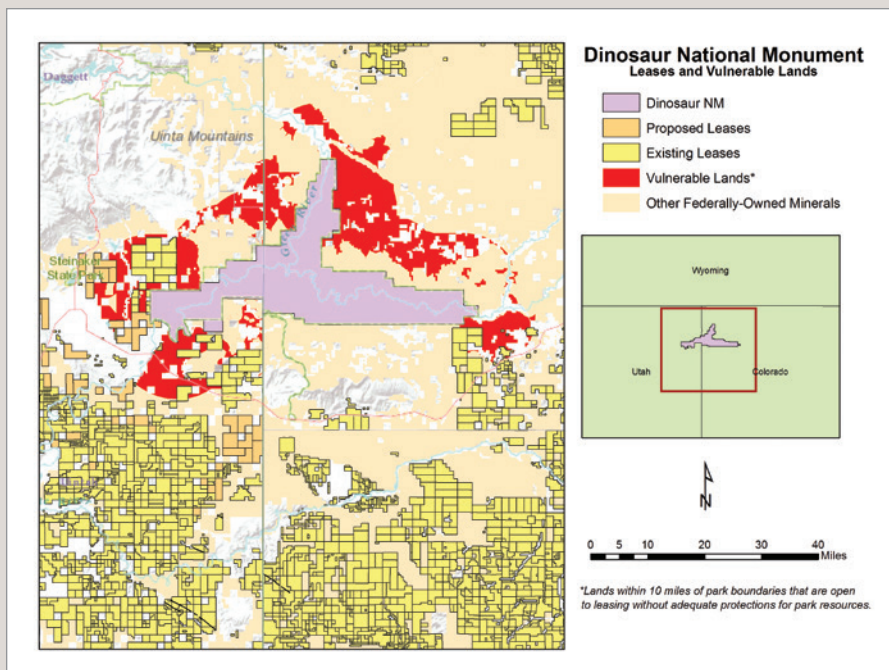
Existing Development and Threats

Current Conditions: Dinosaur NM falls within the Uintah and Piceance basins where, like Chaco and Carlsbad, there has been significant industry interest in nearby federal lands oil and gas development. Also like Chaco and Carlsbad, lands around Dinosaur NM, both in Utah and Colorado, are already heavily leased for development. As of April 2016, there were more than 7,000 oil and gas wells on federal lands around the western boundary of Dinosaur in the Uintah Basin area.

BLM manages federal lands around Dinosaur differently in Colorado and Utah. In Colorado, in a 2015 plan for lands southeast of the monument, BLM adopted comprehensive, robust and innovative protections for Dinosaur. The 2015 plan requires that operators working near monument boundaries work directly with the Park Service to coordinate development across multiple leases in a way that protects monument viewsheds, limits noise, and minimizes impacts from drilling and development on the visitor experience and surrounding landscape. It also prioritizes leasing and development in lower-conflict areas away from Dinosaur’s boundary.

However, north of the monument in Colorado and on its western side in Utah, protections for Dinosaur are significantly weaker. In Utah, BLM requires that operators minimize noise and light pollution, but lands directly along the monument boundary and its entrance road are open to leasing without monument-specific protections (like required coordination with the Park Service). On lands north and directly east of Dinosaur, BLM manages oil and gas without any monument-specific protections whatsoever, even for light or noise. In 2013, BLM proposed to lease several parcels just east of the monument along the Yampa River, a popular whitewater rafting area, resulting in dozens of protests and objections from the Park Service and local stakeholder groups.

Threats: The western side of the monument in Utah is also vulnerable to new leasing and development. As part of its December lease sale, BLM is considering a proposal to lease parcels that overlap the Monument’s Quarry Entrance in Utah. In addition, the protections in place on both sides of the monument do little to guarantee that further degradation of air quality, already approaching non-attainment status.



Mesa Verde National Park

This World Heritage Site in southwestern Colorado has more than 5,000 known archeological sites and 600 cliff dwellings dating to the ancestral Pueblo culture that occupied the area between AD 550 and 1300. Among the largest and most famous cliff dwellings are the Spruce Tree House, Balcony House and Cliff Palace. Ongoing research by local archaeologists (e.g., Crow Canyon Archaeological Center) also shows extremely high densities of related archaeological, cultural and religious resources on federal lands that border the park.

Mesa Verde also offers “easy bicycle rides and a variety of hiking trails to archaeological sites, as well as expansive views and scenic overlooks.” Colorado’s Governor Hickenlooper is currently working with the Park Service and local counties to establish a 20-mile multi-use trail system—the “Paths to Mesa Verde” trail - that would connect MV to nearby towns, schools, and existing trails.

Recreational visits to MV have hovered around half million annually since the



1970s. Last year, in 2016, there were 584,000 visitors to the park, an increase from the 547,000 visitors in 2015. In 2016, visitors to Mesa Verde spent more than \$60 million in local gateway regions, spending that supported 883 jobs. Much of this spending went to local hotels (\$20.4 million) and restaurants (\$10.9 million), found in nearby Mancos and Cortez.

Existing Development and Threats

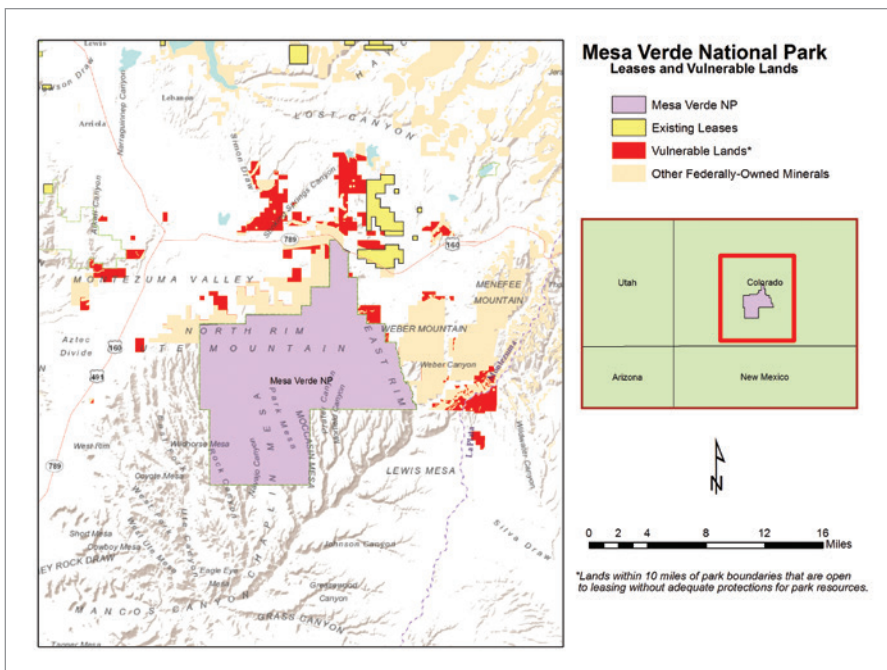
Current Conditions: Federal lands around Mesa Verde have experienced a long history of oil and gas development, beginning in the 1920s. Today, there are more than a thousand existing wells

and hundreds of existing leases in the area, some of which are just a few miles from the park boundary. These lands are managed under a recently-adopted BLM management plan finalized in 2015.

Threats: Unfortunately, unlike other more modern plans like those around Canyonlands and southeast of Dinosaur NM, the new plan failed to adopt basic protections for the park. It allows surface development (rather than requiring horizontal drilling) within key viewsheds and observation points and omits protections for night skies and soundscapes. It also left areas with high densities of cultural sites and artifacts connected to those within Mesa Verde open and available for new leasing and surface development without adequate cultural resource protections. Increased oil and gas leasing under the plan could also contribute to already-significant air quality issues in this park, whose designation under the Clean Air Act affords it the highest levels of protection.

In response to public outcry over the 2015 plan, last year, BLM agreed to re-write the plan for a subset of federal lands around Mesa Verde. However, development on existing leases around the park can and will continue in the meantime, and it is unclear yet whether BLM will fully and successfully resolve the short-comings in the existing plan this next time around.

Above: Mesa Verde National Park, Colorado ©Sumikophoto | Dreamstime



Zion National Park

Southwest Utah's iconic Zion National Park offers outstanding hiking, climbing, cycling, camping, backpacking and canyoneering opportunities. As one of the most visited parks in the country, recreation is a singularly important resource to Zion, its surrounding lands, and the entire state of Utah. Visitors travel from all over the world to visit Zion, it's featured in prominently and advertised by the Utah Office of Tourism, and it is the lifeblood to rapidly growing communities that provide lodging, services, and outfitting to the millions of people that pass through every year.

The current boundaries of the park contain two large canyons: Zion and Kolob. Together these areas include nine separate formations that tell the story of over 150 million years of sedimentation primarily from the Mesozoic. During that time-period warm and shallow seas, ponds and lakes, streams, and vast deserts covered the area and left behind sediment. The region then uplifted some 10,000 feet as part of the creation of the Colorado Plateau starting 13 million years ago.

Visitation to Zion has risen more than 67% over the past decade (2006–2016), from 2.6 to 4.3 million visitors. It is now the sixth most visited national park in the country. In 2016, park visitors spent more than \$244 million in local gateway regions, expenditures that supported 3,382 jobs and \$126.2 million in labor income in local gateway communities like Springdale and Virgin.

Existing Development and Threats

Current Conditions: Like the federal lands around Dinosaur NM, BLM manages federal lands around Zion under two separate, distinct management plans. While these plans do recognize some of the key values of

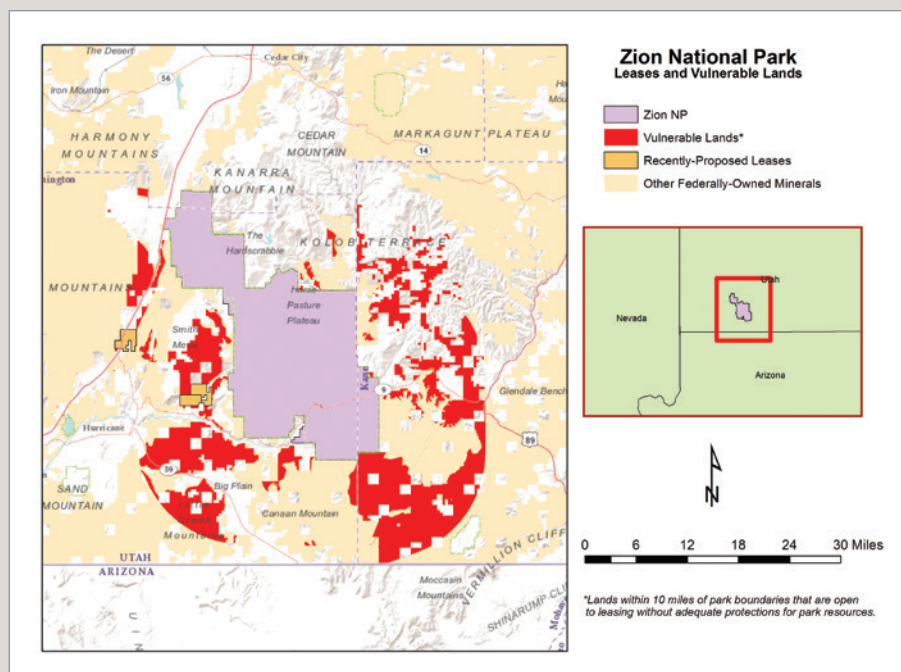
the park and the importance of the tourism and recreation economy to local communities, and even protect some connected cultural, recreational and wilderness resources on adjacent lands, they lack key park-specific protections for Zion. Neither plan conditions new oil and gas development with protections specific to Zion and



its resources. Neither requires that nearby development be coordinated with the Park Service. And both plans allow leasing directly along park borders, including within key viewsheds and along park entrance roads.

Threats: In the past, there has been very little oil and gas exploration and development around Zion and its boundaries. However, BLM proposed leasing several parcels along the western boundary of the park as part of its September 2017 lease sale. The parcels intersect a local mountain biking trail (the “Flying Monkey”) and they bracket Kolob Terrace road, which receives intensive use during summer months, when many tourists use it to access the upper plateaus of Zion National Park. The potential sale of these parcels was strongly opposed by the Park Service, Washington County and the cities of Springdale, Virgin and Toquerville, which all depend on the park for large shares of local revenues. In June 2017, the BLM heeded the will of local communities and removed the parcels from the September lease sale.

Left: Narrows, Zion National Park, Utah ©Gelyngfjell | Dreamstime





How to Protect National Parks from the Impacts of Development on Adjacent Lands

The key to striking appropriate balance between oil and gas leasing on federal lands and national park protections is for the BLM to listen a variety of local voices and carefully plan before taking action.

Diverse economies are strong economies, and that means finding ways for oil and gas development and national park gateway communities to coexist on the landscape. As shown above, when oil and gas development is given free reign it can disrupt steady and reliable park economies. At the same time, oil and gas development brings additional benefits and has long been a part of BLM's management.

The key to striking an appropriate balance between oil and gas leasing on federal lands and national park protections is for BLM to listen to a variety of local voices and key stakeholders before taking action. Historically, BLM opened almost all of federal lands to oil and gas leasing without constraints and protections for non-energy resources, like neighboring national parks. Older BLM management plans rarely distinguished between areas appropriate and inappropriate for new oil and gas development or conditioned development to reflect local interests and the specific qualities and characteristics of their planning areas. To prevent irresponsible leasing decisions under these plans, interested stakeholders had to constantly monitor, protest and litigate against BLM leasing decisions.

Above: Dinosaur National Monument, Utah ©Zrfphoto | Dreamstime



In December 2008, for example, under one of these antiquated, guidelines-free management plans, BLM offered 77 oil and gas leases on federal lands near and along the boundaries of Arches and Canyonlands national parks. The sale prompted immediate public outcry from park visitors as well as the local businesses, residents and communities around Moab. As a result, in 2010, the Interior Department and BLM broadly reformed the oil and gas program to create a more balanced approach to energy leasing, one that emphasized local input and more careful and thoughtful planning and leasing decisions. These reforms encouraged BLM to carefully consider and account and plan for the impacts of oil and development on other, non-energy resource, like our parks.

Over the past 7 years, these reforms have significantly improved BLM oil and gas management decisions, including in some areas highlighted in this report, like the area east of Canyonlands and southeast of Dinosaur National Monument. Management of these lands takes into account neighboring park resources important to gateway communities. In the best examples, BLM prepared these plans by gathering diverse stakeholder input from those likely to be impacted by nearby development—industry, recreationists, the National Park Service, conservationists—and, through a detailed, collaborative process, decided together where oil and gas development is appropriate and what constraints are necessary to protect neighboring resources.

If adopted elsewhere, many of these same principles and ideas would greatly benefit the threatened parks highlighted in report and the communities that depend on them. Keeping these past lessons in mind, in making future oil and gas management and planning decisions around parks, BLM should:

- Engage with National Park Service staff in order to preemptively identify at-risk resources, sensitive areas, or other opportunities to avoid impacts to park resources;
- Actually consider the leasing potential of areas near national parks and in other sensitive areas, and balance the benefits of development with the potential impacts to existing economies;
- Engage with local businesses and elected officials to receive input from the local perspective on where areas should and should not be leased, and under what conditions leasing should proceed;
- Conduct a Master Leasing Plan or similar collaborative planning process to fully ensure local voices are heard and that NPS and other affected agencies have a chance to find solutions that allow leasing with the least possible impact.

Particularly around parks with ongoing planning efforts—like Carlsbad Caverns and Chaco Canyon—BLM should look to these principles and other modern plans that have applied these principles, to strike an appropriate balance between energy development and protections for park resources. Of course, federal lands management, particularly for oil, gas and energy resources may change dramatically under the Trump Administration, and early indications cast doubt upon whether the BLM will continue to foster collaborative landscape planning, or will instead make it easier for oil and gas companies to lease and drill without accounting for sensitive park resources and neighboring communities.

NPCA will continue to work hard to promote collaborative leasing in order to find a balance between park protection and sensible development.

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SINCE 1919, NPCA has been the leading voice of the American people in protecting and enhancing our National Park System. NPCA, its members, and partners work together with the National Park Service to protect the park system and preserve our nation's natural, historical, and cultural heritage for generations to come.