

The National Landscape Conservation System: A Model for Long-Term Conservation of Significant Landscapes

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Abstract—The Bureau of Land Management administers over 256 million surface acres, more than any other U.S. public agency, the vast majority of which is in the western half of the United States. A land protection system was initiated in 1970 with the creation of the King Range National Conservation Area. In 1976, the Federal Land Policy and Management Act (<http://www.blm.gov/flpma/>) changed the BLM's mission from land disposal and management for resource production to uses that included protective designations including Wilderness. In 2000, the BLM responded to the growing concern over management of protected areas with creation of the National Landscape Conservation System (NLCS) (<http://www.conservation-system.org/conservationsystem/>). Wilderness Areas, Wilderness Study Areas, National Conservation Areas, National Monuments, Wild and Scenic Rivers and National Scenic and Historic Trails are all components of the NLCS. In 2009, legislation codified the NLCS, and gave it permanence under the law. Pure, unmodified wilderness occupies one end of the spectrum. At the other end of the spectrum, National Monuments, National Conservation Areas and similar designations can be found, containing recreational and interpretive developments to facilitate public understanding and appreciation of protected landscapes. These different protective designations provide a range of opportunities and experiences to the public and to generations to come. When a decision must be made on how to proceed with conservation of natural areas, the NLCS provides a helpful example of a range of possible designations.

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Introduction To The Bureau Of Land Management

With over 256 million surface acres, the Bureau of Land Management (BLM) is responsible for managing more public land than any other agency in the United States. The vast majority of this land is located in the arid western third of the United States and in Alaska. These lands include canyons, deserts, cacti of the American Southwest, the open landscapes of the short grass prairie, the isolated tundra, the wide open landscapes that surround western towns, and the isolated retreats that often form the image of the American West.

The public lands managed by the BLM are those Federal lands left over from the early years of western expansion. In the country's first 150 years, our national policy was to dispose of Federal lands in an effort to build a strong nation, raise funds, and encourage settlement of new territories. Lands were sold or given to settlers, homesteaders, veterans, towns, colleges, private corporations, and states. Some of the land was set aside to become National Parks, National Forests, Wildlife Refuges, Indian Reservations, or Military Bases. During the disposal era, over 1.1 billion acres of public lands were transferred out of Federal ownership.

The disposal era ended for the BLM in 1976 with passage of The Federal Land Policy and Management Act. This law changed the course of BLM management in numerous ways, including directing that public lands be retained in Federal ownership. The lands that remained are the 256 million acres that are now managed by the BLM. BLM-managed public lands are a priceless legacy and long-term investment for the American people. Prized originally for their commodity values, today the public lands offer much more: unparalleled recreation opportunities, wildlife reserves, opportunities for scientific study in relatively undeveloped landscapes, and in the increasingly crowded American West, one of the last guarantees of open space.

Wilderness Protection

In 1964, the Wilderness Act became law, creating the National Wilderness Preservation System. These wilderness lands have the highest level of protective management on the nation's public lands. In 1964, the BLM was not included in the wilderness legislation, but in 1976 The Federal Land Policy and Management Act gave BLM wilderness stewardship responsibilities for the first time,

directing the agency to inventory, study, and report on its remaining roadless areas with wilderness characteristics. BLM became the fourth and final Federal agency to receive wilderness stewardship responsibilities under this legislated wilderness system. In 1991, Congress received BLM's recommendations for new wilderness designations. Today, BLM manages 222 Wilderness Areas totaling 8.7 million acres.

Wilderness Study Areas (WSAs) consist of an additional 545 areas totaling 12.8 million acres. These are undeveloped lands that BLM believes meet at least the minimum qualifications of wilderness (roadless, usually larger than 5,000 acres, in a natural condition, with outstanding opportunities for solitude or a primitive and unconfined type of recreation). Future Wilderness Area designations may come from some of these WSAs or from other undeveloped lands identified by the public.

Other Special Values

Congress began to recognize the need to protect some of the natural, historical, and cultural resources on these public lands through legislation nearly 40 years ago, and took a major step in creation of a BLM land protection system in 1970 by establishing the King Range National Conservation Area on California's northern coast. At numerous times in the following decade, Congress expanded the areas protected under national designations. The 10.6 million acres within the California Desert National Conservation Area were set aside in 1976. The Steese National Conservation Area, which contains 1.2 million acres in east-central Alaska, was designated in 1980 to protect wild and scenic rivers, crucial caribou calving grounds, and Dall sheep habitat. Additional protective designations were passed into law for the rugged lava flows on New Mexico's El Malpais "badlands" (1987), the rich wildlife and riparian area along Arizona's San Pedro River (1988), and other areas throughout the West. In total, Congress has created 16 National Conservation Areas in eight western states.

In 1996, BLM was entrusted with the responsibility of managing its first National Monument with the presidential designation of the Grand Staircase-Escalante National Monument in Utah. Grand Staircase-Escalante National Monument was designated to protect the area's objects of historic or scientific interest including geologic treasures, world class paleontological sites, extensive archeological resources, and outstanding biological resources. Since then, the BLM's responsibilities to manage protected lands have continued to expand. Congress or the President has since created an additional 15 National Monuments in seven additional states.

In addition to Wilderness Areas, Wilderness Study Areas, National Monuments, and National Conservation Areas, Congress used several additional protective designations to recognize the natural values of other landscapes including Wild and Scenic Rivers and National Scenic and Historic Trails. This explosion in land protection led to numerous changes in the BLM. The agency began to gradually change from an agency responsible for disposing public land and managing for resource use and consumption to an agency with an additional new mission: the long-term conservation

of public lands. New employees were hired with skills in wilderness management, outdoor recreation planning, archaeology, and other specialties that were needed to manage and protect these new resource management responsibilities.

These new land designations, ranging from classic wilderness preserves to generally natural landscapes that occasionally included developed recreation and interpretive sites, created a pattern of special areas where the overriding objectives became long-term conservation, restoration of the land, and protection of biological diversity. Wilderness Areas are managed to strictly prohibit any activities that might impact their untrammeled, undeveloped and natural qualities. In the National Monuments and National Conservation Areas, a set of common management prescriptions emerged: withdrawal from disposal, more intensive management focused on providing visitor services and interpretation, and restoration priorities. Many of the areas are also withdrawn from mineral entry. The designations can be viewed as a spectrum of protected lands—with undeveloped wilderness at one end and, at the other end, those designations including some developments that enhance public understanding and enjoyment of the protected landscapes.

During development of these conservation designations, Congress and the BLM learned that not one type of designation was appropriate for all situations and no single designation was adequate to protect all the landscapes that deserved protection. In some cases, wilderness was the most appropriate designation. In other situations, a National Conservation Area designation did a better job of protecting an area's values while allowing certain existing uses. In some cases it is appropriate to have more than a single designation for a special landscape. This most often occurs when a Wilderness Area, Wild and Scenic River or National Trail is located within a National Conservation Area or National Monument.

National Landscape Conservation System

BLM manages its Wilderness Areas under established manual and regulatory guidance; however, the expanding collection of other special areas did not have an organized management approach. In 2000, the BLM responded to the growing concern over management of many of these protected areas with creation of the National Landscape Conservation System (NLCS) (<http://www.conservationssystem.org/conservationssystem/>). The NLCS brings into a single system BLM's most protected landscapes. By putting these special lands into a single system the agency hoped to improve management of these treasured areas, improve public benefits that flow from a well-managed system of conservation areas, and increase public awareness of their scientific, cultural, educational, ecological, and other values. The NLCS includes the BLM's National Monuments, National Conservation Areas, Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, and National Historic and Scenic Trails.

The BLM manages these treasured landscapes of the American West with a set of common principles that emphasize conservation, protection and restoration:

- The conservation of natural values is of primary concern.

- Areas are managed in partnership with surrounding communities. In developing management plans, the BLM is working with local communities, particularly with regard to amenities such as food services and lodging. The BLM does not provide food, lodging, or intensive visitor services within the areas. Instead, visitors are encouraged to see the landscape in the context of the history and tradition of the entire region. Intensive services are provided by the surrounding communities.
- Conservation areas and monuments often include within their boundaries wilderness and wilderness study areas or wild and scenic rivers where motor vehicles are excluded. Outside such areas, the maintenance of roads and use of motor vehicles is managed to protect fragile soils, riparian areas, and other plant communities and wildlife habitat. Vehicles are restricted to designated routes.
- Valid existing rights such as existing mineral leases are recognized.
- Traditional uses such as grazing and hunting will continue, provided that these activities are consistent with the overall purpose of the area. BLM recognizes that in many instances these uses can be compatible with good wildlife management, protection of biodiversity, and enhancement of natural values.
- Many of the areas are unavailable for development under the Mining Act of 1872 and various other general lands laws that are incompatible with long-term protection of our natural environment.
- Management plans are prepared, or existing plans reviewed and updated, to reflect the importance of the conservation principles for which the place has been recognized.

Legislative Success

The Omnibus Public Lands Management Act of 2009 (P.L. 111-11) became law on March 30, and with it came the codification of the National Landscape Conservation System as a legislated system under the law, rather than as the previously existing administrative system subject to change by a future agency initiative. As a legislated system, the public visibility and public support for protecting and managing the variety of lands and designations within the System has increased, and will likely continue into the future, as population grows and competition for uses such as energy development on lands outside of the NLCS increases.

The NLCS contains some of the West's most spectacular landscapes. They are managed under a mission to conserve, protect, and restore nationally significant landscapes recognized for their outstanding cultural, ecological, and scientific values. Today the NLCS includes over 886 Federally recognized areas and approximately 27 million acres. The NLCS is diverse. It encompasses red-rock deserts and rugged ocean coastlines, deep river canyons, and broad Alaskan tundra. Many areas are remote and wild but others are surprisingly accessible. The NLCS also reveals and protects our cultural legacy. It safeguards American Indian cliff dwellings and cultural sites, and preserves the remaining traces of our Nation's historic trails and pathways.

Public interest and support has been outstanding, as evidenced by the passage of this year's legislation that not only legislatively codified the NLCS, but simultaneously added 928,000 acres of Wilderness Areas, one National Monument, four National Conservation Areas, 363 miles of Wild and Scenic Rivers, and 40 miles of National Scenic Trails for a total of 1.2 million acres of new designations. Numerous national publications including the *National Geographic*, *Audubon*, *Sunset Magazine*, *Sierra*, *Sky Magazine*, *Wilderness Magazine*, *Backpacker*, and *USA Today*, as well as many local newspapers, have celebrated formation of the NLCS and discussed some of the more outstanding landscapes protected under the umbrella of the system.

NLCS Benefits

The benefits from such a vast and varied system of protected lands are multiple, but one area is emerging that has received little attention in the past: the benefit of these lands for the advancement of scientific understanding of the natural world. The NLCS provides an important land base for scientific research and discovery that is anticipated to receive more attention from the scientific community in the future. A national symposium on NLCS-based science will be held in May 2010, highlighting important scientific research associated with these protected landscapes. Topics of interest include the discovery of new species, such as bacteria recently found in New Mexico's Snowy River Cave that may prove helpful in cancer research. In Las Cienegas and San Pedro Riparian National Conservation Areas, migration patterns of neotropical birds benefit land managers on both sides of our borders. Studies of geology in Grand Canyon Parashant National Monument and Grand Staircase-Escalante National Monument in Utah are being used as analogues to understand the formation of the Martian landscape. Paleontological discoveries abound and the history of the Cretaceous period is being rewritten from research on NLCS lands in Grand Staircase-Escalante National Monument in Utah and the Bisti Badlands Wilderness Area of New Mexico. Cultural resource research, such as the identification of prehistoric and current agave fields provide information for indigenous peoples. Studies of mountain lion populations in the urban interface at Ironwood National Monument are helping communities better understand and deal with this elusive creature.

The Future of the NLCS

In an increasingly crowded American West, NLCS lands are special. They are havens of solitude and a reminder of the American West as it appeared hundreds of years ago. The BLM is proud to be a steward of these treasured landscapes. As we continue to improve our long-term conservation management of these landscapes, we will assure the increased benefits that flow from a well-managed system of conservation areas.

Wilderness preservation is often painted in terms of "all or nothing." Either wilderness is saved or it is lost. The National Landscape Conservation System provides a working model of a spectrum of protected lands existing under a broad

legislative umbrella. Pure, unmodified wilderness occupies one end of the spectrum. At the other end of the spectrum can be found National Monuments, National Conservation Areas, and similar designations containing recreational and interpretive developments to facilitate public understanding and appreciation of protected landscapes. These different protective designations provide a range of opportunities and experiences to the public and to generations to come. When a decision must be made on how to proceed with conservation of natural areas, the NLCS provides a helpful example of a range of possible designations.

Conservation Areas

With nearly 900 units in the NLCS, it is not possible to describe them all. Summarized below, however, are a few of the areas in the System (<http://www.conservationssystem.org/conservationssystem>).

National Monuments

Agua Fria (January 11, 2000). An hour north of Phoenix, Arizona, Agua Fria's 71,000 acres host one of the most significant systems of late prehistoric sites in the American Southwest.

California Coastal (January 11, 2000). This National Monument includes all the islands, rocks, and pinnacles off the 840-mile California coast. These areas provide essential habitat for an estimated 200,000 breeding seabirds.

Canyons of the Ancients (June 9, 2000). Located in southwestern Colorado, this 163,000-acre area contains the richest known concentration of archaeological sites in the United States.

Carrizo Plain (January 17, 2001). Remnant of a once-vast grassland astride the San Andreas Fault zone, this unit's 204,000 acres in central California are a critical refuge for several endangered and threatened animal and plant species.

Cascade-Siskiyou (June 9, 2000). The convergence of geologically young and old mountain ranges gives this 53,000-acre Monument in south-central Oregon an extraordinary degree of biological diversity.

Craters of the Moon (November 9, 2000). The 272,000 acres of this remarkably preserved volcanic landscape on Idaho's Snake River Plain contain an array of exceptional features, including cinder cones and vast lava fields.

Grand Canyon-Parashant (January 11, 2000). This 808,000-acre unit contains outstanding geological and paleontological features in northwestern Arizona.

Grand Staircase-Escalante (September 19, 1996). Labyrinthine red rock canyons, high plateaus, and dramatic cliffs and terraces make up this stunning 1.9-million-acre area in southern Utah. About one third of the area is designated as Wilderness Study Areas.

Ironwood Forest (June 9, 2000). This nearly 130,000-acre area protects a unique ironwood forest and a wide array of bird and animal life in southern Arizona.

Kasha-Katuwe Tent Rocks (January 17, 2001). This area in northern New Mexico protects over 4,000 acres of cone-shaped rock formations resulting from volcanic eruptions and erosion that first built up and then wore down this landscape.

Pompeys Pillar (January 17, 2001). William Clark of the Lewis and Clark Expedition carved his name on this sandstone butte overlooking the Yellowstone River, adding to a rich record of historic inscriptions now protected as a 51-acre area in central Montana.

Santa Rosa and San Jacinto Mountains (October 24, 2000). This 86,500-acre, congressionally designated National Monument in southern California hosts over 500 plant and animal species, including the Federally listed Peninsular bighorn sheep. The mountain core is designated wilderness.

Sonoran Desert (January 17, 2001). Wide valleys separated by rugged mountain ranges offer dense forests of saguaro cactus—excellent habitat for a wide range of wildlife species—in this nearly 500,000-acre area in southwestern Arizona.

Upper Missouri River Breaks (January 17, 2001). The breathtaking limestone bluffs along this 149-mile, 370,000-acre stretch of Missouri River in central Montana remain almost exactly the same as when Lewis and Clark described them in their expedition journals. The opportunities for solitude are protected in several Wilderness Study Areas.

Vermilion Cliffs (November 9, 2000). An outstanding assemblage of deep, narrow wilderness canyons makes the nearly 300,000 acres in this northern Arizona Monument ideal for hiking and exploring.

National Conservation Areas

Black Rock Desert-High Rock Canyon Emigrant Trails (December 21, 2000). This area includes nearly 1,200,000 acres in northwestern Nevada. Ten wilderness areas provide additional protection to the rugged interior mountain ranges in the area. A National Historic Trail protects wagon ruts and historic inscriptions, largely unchanged from when pioneers moved westward through the area in the 1800s.

McInnis (October 24, 2000). From saltbush desert to the spectacular canyons of the Black Ridge Wilderness, this diverse area in west-central Colorado encompasses over 122,000 acres, including more than 75,000 acres of wilderness.

El Malpais (December 31, 1987). Over 262,000 acres of rugged lava flows in west-central New Mexico display some of the Nation's most significant geological, cultural, scenic, scientific, and wilderness resources.

Gila Box Riparian (November 28, 1990). This 22,000-acre desert oasis contains cliff dwellings, historic homesteads, Rocky Mountain bighorn sheep, and more than 200 species of birds in southeastern Arizona.

Gunnison Gorge (October 21, 1999). A variety of natural and geologic features and unsurpassed recreational opportunities are on display in western Colorado's Gunnison Gorge, a 57,727-acre area. This unit supports a diverse range

of uses such as whitewater rafting, big-game hunting, and domestic livestock grazing. The inner gorge is designated wilderness.

King Range (October 21, 1970). West of Arcata California, 35 miles of remote coastline comprise the 60,000-acre King Range, the nation's first National Conservation Area.

Las Cienegas (December 6, 2000). This area's 42,000 acres of desert grasslands and rolling oak-studded hills in south-central Arizona are home to a great diversity of plant and animal life, including several threatened or endangered species.

Red Rock Canyon (November 16, 1990). This 196,000-acre area outside of Las Vegas boasts unique geologic features, plants, and animals that represent some of the best examples of the Mojave Desert. The area offers spectacular climbing, and hiking opportunities. The most remote mountain areas within the NCA are also designated Wilderness Study Areas.

San Pedro Riparian (November 18, 1988). This 58,000-acre area in southeastern Arizona supports over 350 species of birds, 80 species of mammals, and 40 species of amphibians and reptiles.

Morley Nelson Snake River Birds of Prey (August 4, 1993). Home to the largest concentration of nesting raptors in North America, this 485,000-acre area in southwestern Idaho provides a complete and stable ecosystem where both predators and prey occur in extraordinary numbers.

Steens Mountain (October 30, 2000). Officially called the Steens Mountain Cooperative Management and Protection Area, these 425,500 acres in southeastern Oregon include volcanic uplifts, glacier-carved gorges, wild rivers, wilderness, and diverse plant and animal species.

Steese (December 2, 1980). This 1.22-million-acre area in east-central Alaska contains a Wild and Scenic River, crucial caribou calving grounds, and Dall sheep habitat.

Headwaters Forest Reserve (March 1, 1999). These 7,400 acres in northern California, co-managed with the State of California, protect old-growth redwood stands that provide habitat for threatened species such as the marbled murrelet, a seabird, and Coho salmon.

Wilderness and Wilderness Study Areas

BLM manages 222 Wilderness Areas totaling 8.7 million acres, and 545 Wilderness Study Areas (WSAs) totaling 12.8 million acres. Wilderness Areas are managed to protect their natural and undeveloped character as well as their outstanding opportunities for solitude and primitive and unconfined recreation. Wilderness Study Areas are managed to protect their wilderness characteristics until Congress makes a determination whether or not to classify them as Wilderness Areas. They represent an array of America's most pristine and spectacular wilderness landscapes remaining on the public lands.

Wild and Scenic Rivers

The NLCS includes 67 Wild and Scenic Rivers accounting for a total of over 2,400 river miles. These offer unparalleled opportunities for recreation on free flowing rivers throughout the American West.

National Scenic and Historic Trails

BLM-managed portions of the National Scenic and Historic Trails are also part of the NLCS. Ten Historic Trails totaling over 5,300 miles, including those followed by Lewis and Clark and pioneers heading to Mormon Country, commemorate the nation's cultural heritage. An additional five Scenic Trails, including the Continental Divide and Pacific Crest Scenic Trails, offer over 660 miles of some of the country's most spectacular mountain settings.

The content of this paper reflects the views of the authors, who are responsible for the facts and accuracy of the information presented herein.
