

Land Management

Bureau of

U.S. Department of the Interior

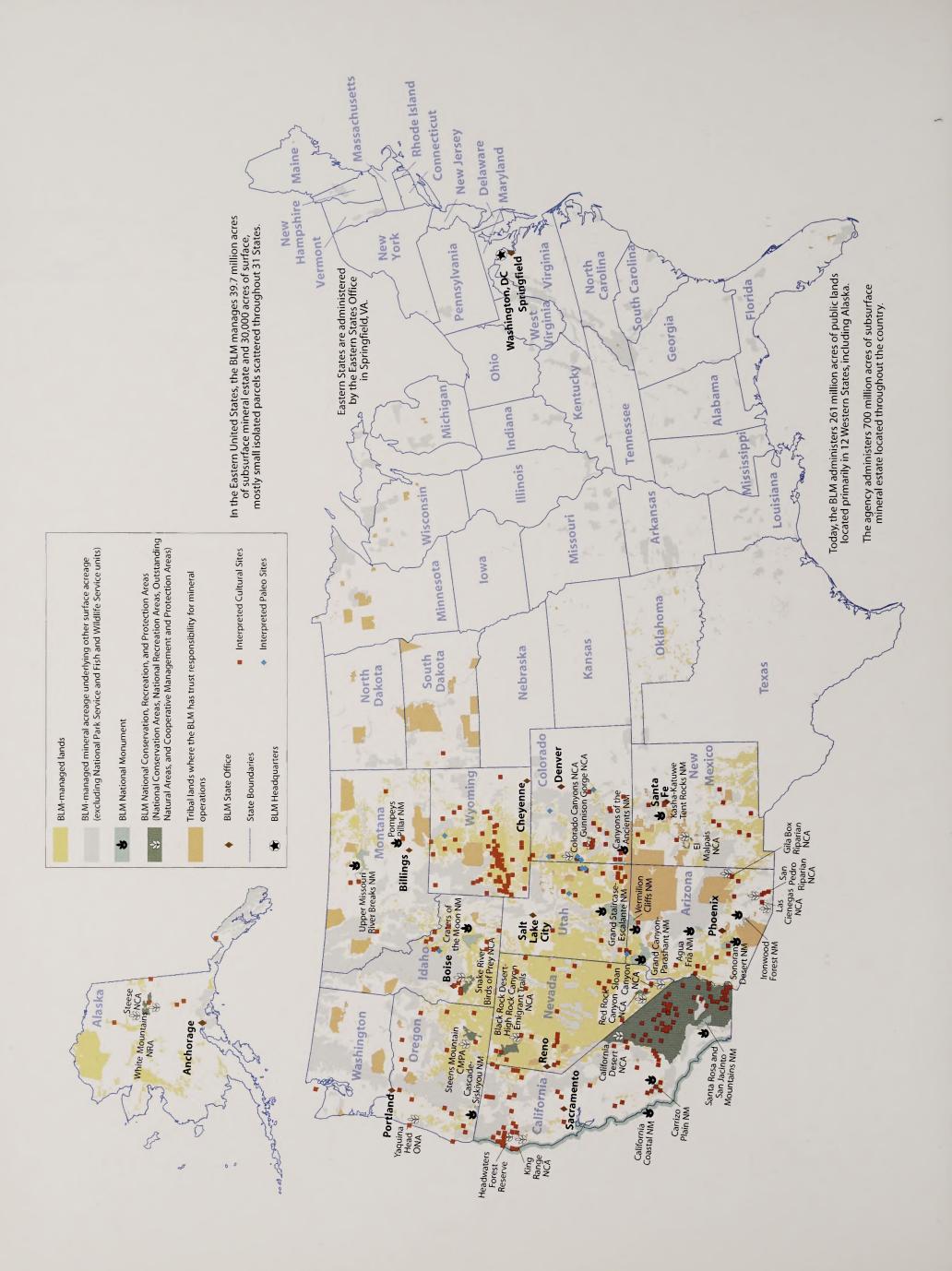
America's Priceless Heritage:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Cultural and Fossil Resources on Public Lands

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Wyoming
November 2003



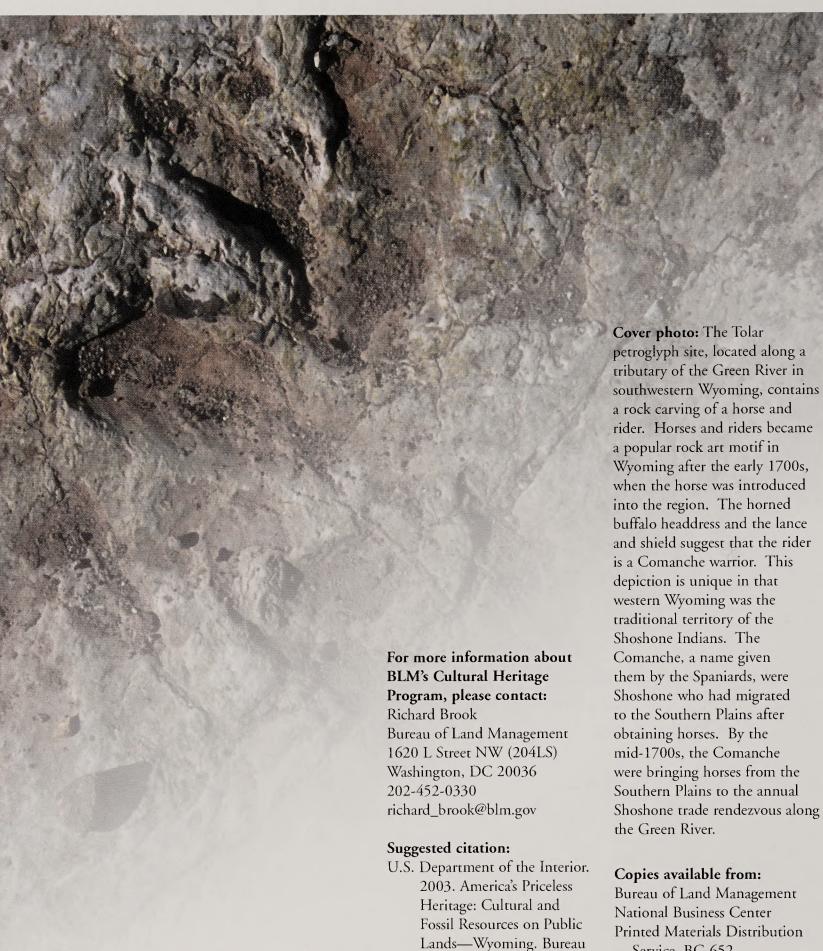
America's Priceless Heritage:

Cultural and Fossil Resources on Public Lands



U.S. Department of the Interior Bureau of Land Management November 2003

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Preface:

An Invitation to the Reader

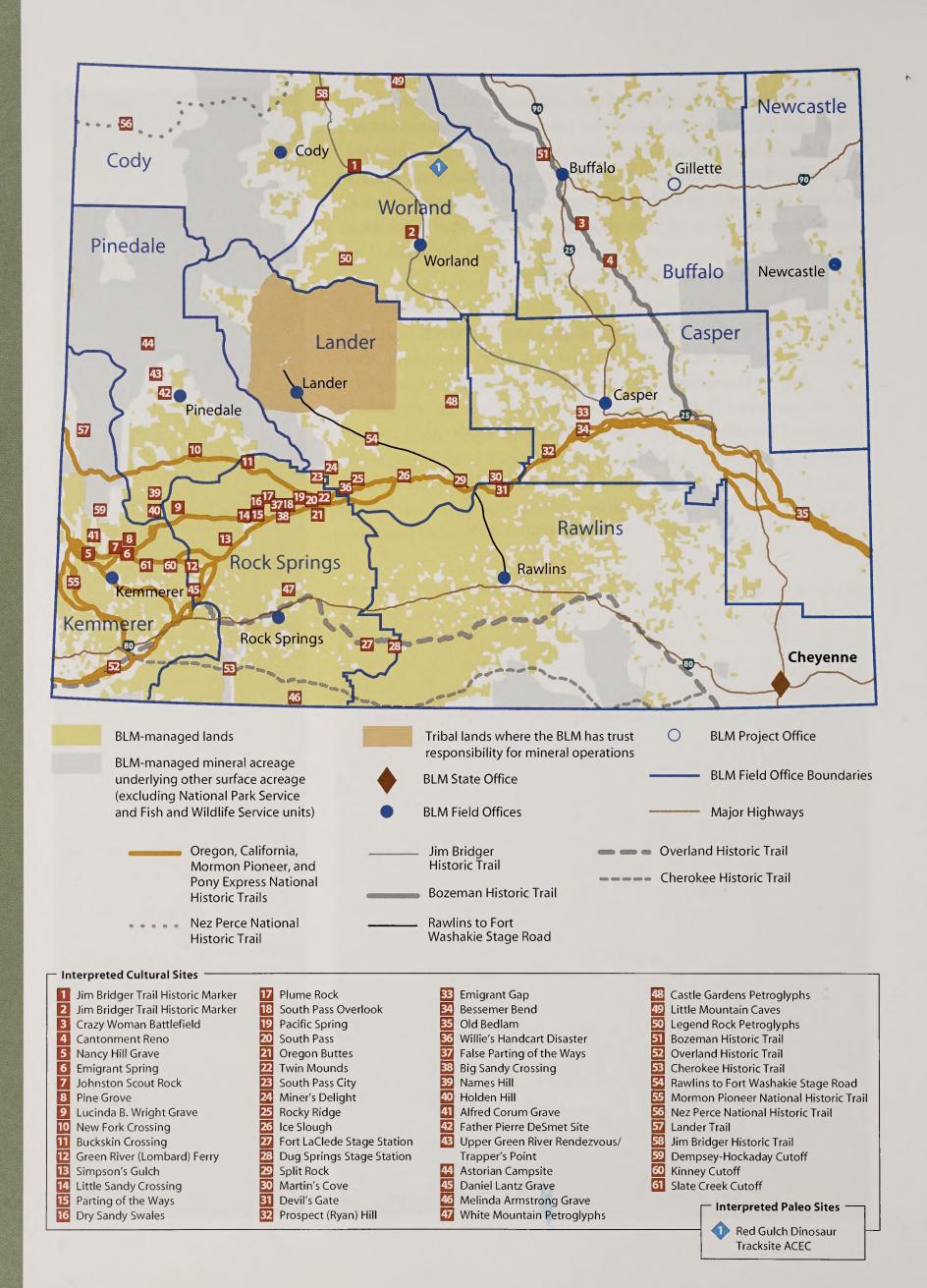
The Bureau of Land Management (BLM) is responsible for managing 261 million acres of public land—about one-eighth of the United States. Most of these lands are in the Western United States, including Alaska, and they include extensive grasslands, forests, high mountains, arctic tundra, and deserts. BLM also manages about 700 million acres of subsurface mineral resources, as well as numerous other resources, such as timber, forage, wild horse and burro populations, fish and wildlife habitat, wilderness areas, and archaeological, historical, and paleontological sites.

BLM administers the public lands within the framework of numerous laws, the most comprehensive of which is the Federal Land Policy and Management Act of 1976 (FLPMA). FLPMA directs BLM to follow the principle of "multiple use," which means managing the public lands and their various resource values "so that they are utilized in the combination that will best meet the present and future needs of the American people." This multiple use mission requires BLM to address quality of life issues, including providing clean air and water; providing recreational opportunities; protecting wildlife; and safeguarding cultural and fossil resources; as well as providing for a sound economy through the production of energy, food, and fiber and by sustaining local communities and their heritage.

Given the scope of its multiple use mission, BLM affects more Americans on a daily basis than any other land management agency. The Bureau constantly faces the challenge of ensuring a balance of land uses among perspectives that are occasionally, if not often, competing. BLM recognizes that people who live near the public lands have the most direct connection and knowledge of them, as well as a commitment to their stewardship. At the same time, the Bureau maintains a national focus because these lands belong to all Americans, whose appreciation of them continues to increase.

BLM's central challenge is to *balance the demands of growth and* the imperative for conservation. America is entering into a new era of conservation to achieve a healthier environment and a more secure economy—what Secretary of the Interior Gale Norton







WYOMING

Statistical Overview

Acres of public land	18.4 million acres
Acres inventoried for cultural properties (FY 2002)	84,623 acres
Acres inventoried for cultural resources (to date)	2,257,709 acres
Cultural properties recorded (FY 2002)	1,676 properties
Cultural properties recorded (to date)	35,752 properties
Cultural Resource Use Permits in effect (FY 2002)	72 permits
National Register of Historic Places listings (to date)	30 listings
National Register of Historic Places contributing prope	erties 39 properties
Section 106 class III undertakings (FY 2002)	2,653 undertakings
Section 106 data recovery, projects (FY 2002)	32 projects
Section 106 data recovery, properties (FY 2002)	38 properties
Interpreted places	62 places

Cultural Resources

1. Program Summary

BLM manages 18.4 million surface acres of land in Wyoming. Of this, BLM has inventoried approximately 2,257,709 acres (12.3 percent) and has identified over 35,000 cultural heritage properties. Some 7,384 (21 percent) of these properties have been determined eligible for inclusion on the National Register of Historic Places. Currently, there are 30 sites in Wyoming that are listed on the National Register of Historic Places, including

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Petroglyphs near Medicine Lodge Creek, Hyattville, Wyoming.





Horseman rock art.

In Wyoming,
BLM manages
over 1,400 miles
of historic
trails and
expansion-era
stage and
freight roads.

three multiple properties and two National Historic Landmarks. BLM meets its education and public outreach responsibilities through numerous partnerships with public, academic, and private institutions, and as cosponsor of the annual Island in the Plains Conference on Black Hills prehistory and history.

The State displays a unique portrait of prehistoric cultural resources representing some of the earliest and most diverse hunting and gathering cultures in North America, ranging from 13,000 years ago up to the Indian horse cultures of the historic period. Associated with these hunting and gathering cultures is a complete timespan of Native American rock art ranging from dated Paleo-Indian petroglyphs and pictographs up through horse culture iconography of the historic period.

Wyoming, with its harsh high sage desert, rolling plains, and rugged mountains, has historically been known as a place to pass through or exploit for its natural resources rather than as a region desirable for settlement and population growth. The State has more emigrant trails and transportation corridors than any other part of the country. In Wyoming, BLM manages over 1,400 miles of historic trails and expansion-era stage and freight roads. There are over 315 miles of Oregon, Mormon Pioneer, California, and Pony Express Trails on public land in the State of Wyoming, all of which are demarcated with trail monuments and interpretive signs for the benefit of the public. Additionally, there are numerous trail-associated emigrant camp areas managed by the BLM.

Late 19th and 20th century resource extractive industries and ranching are reflected by a landscape dotted with early mines (gold and coal), oil field camps and townsites, timber and tie camps, and sheep and cattle ranches. Some of these sites are interpreted for public visitation.

2. State Cultural History

Wyoming has a diversity of ecological niches and topographic relief ranging from grassy plains, sage desert, buttes, seasonally dry arroyos, and riverbeds to foothills, dissected mountain slopes, canyons, mountain conifer forests, and high-altitude alpine tundra. Never a friendly place for agriculture, this harsh land always favored hunters and gatherers since it supported a variety of grazing and browsing animals as well as seeds, roots, tubers, berries, greens, and fruit.

Paleo-Indians hunted large herbivores, such as mammoths, horses, camels, and giant bison, that roamed the lush grasslands at the end of the Pleistocene (Ice Ages). Archaeological evidence solidly documents this early period beginning about 10000 B.C. and lasting until the early Archaic, which appeared with warmer and drier climatic conditions around 6500 B.C.

Extinction of the large Pleistocene mammals and the increasing diversity of plant communities led the early Archaic people to focus on smaller game and a variety of different plant resources. These diversified subsistence strategies are reflected in the archaeological record by a proliferation of different technological traditions such as projectile point styles and the increasing use of ground stone tools to process plant foods. In eastern Wyoming, bison kills still occurred, but they were infrequent. In western Wyoming, several sites document reliance on antelope. An important development was the construction of house pits, which indicated that people had more substantial house structures than archaeologists had earlier suspected.

About 2300 B.C., a wetter climate led to environmental conditions similar to those of today. Human groups of this middle Archaic period adapted to these changes by increasing their reliance on large mammals for food, especially bison, but also deer and antelope.

The late Archaic, beginning about 1000 B.C., is a time of a marked increase in communal bison hunting, including the use of elaborate wood corrals as traps. Most late Archaic house structures identified to date are tipi rings rather than house pits.

The late prehistoric period, beginning about A.D. 500, is distinguished by technological innovation and a significant surge in population. The bow and arrow and pottery appear at archaeological sites from this time, and in southwestern Wyoming, there is a distinct change in house types. People continued to follow Archaic subsistence practices based on seasonal movements through the basins and foothills in response to availability of floral and faunal resources. Yet intensive use of seeds implies a notable change in subsistence strategy, which appears to be accompanied by increased social complexity. In eastern Wyoming, communal bison driving continued to be a dominant subsistence strategy throughout the late prehistoric and into the historic period.

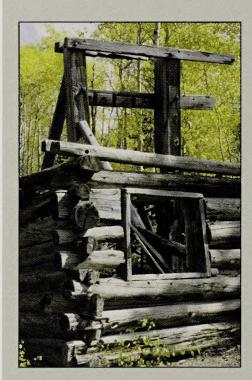


Pronghorns are true American natives found nowhere else in the world. In Wyoming, home to the world's largest herd of pronghorn, the animals outnumber the people.

In western
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With the discovery of gold near South Pass in 1867, hundreds of miners traveled to the area.



A structure at Miner's Delight, South Pass, Wyoming.

Sometime around 1700, the first European trade goods reached the tribes in this region. The introduction of horses produced significant cultural changes on the Plains. The greater mobility changed hunting strategies, led to increased raiding and warfare, and enabled people to transport greater loads in moving camp. The need to provide grass and water for horses changed settlement strategies. The exact date for the arrival of horses is not clear, but the Shoshone and Crow both had significant numbers of horses by the first half of the 18th century.

Between 1800 and 1840, the fur trade sent explorers and trappers into the area, greatly increasing Indian contact and connection with Euro-Americans. In 1840, Marcus and Narcissa Whitman traversed the area, opening the Oregon Trail. The year 1846 saw the beginning of the Mormon (members of the Church of Jesus Christ of Latter-Day Saints) emigration to what they referred to as the land of "Zion"—the valley of the Great Salt Lake in Utah Territory. By 1860, the Bozeman and Bridger Trails diverged from the Oregon Trail, accommodating the many westward immigrants. Soon the transcontinental telegraph, Overland mail, and eventually, transcontinental railroad (in 1868) all followed the initial route across Wyoming, providing lifelines between the settlements of the west coast and the populous East. Military installations, placed at regular intervals, protected the route.

The railroad finally provided the impetus needed for the development of cattle and sheep industries in Wyoming. With the discovery of gold near South Pass in 1867, hundreds of miners traveled to the area. Historic sites document this era at Sweetwater Mining District, South Pass and Atlantic Cities, and Miners Delight.

3. Cultural Resources At Risk

Numerous factors are affecting cultural sites in Wyoming, including:

 Artifact collecting and impacts from tourism at the Bozeman Trail/Crazy Woman battle site/Cantonment Reno, Keyhole bison jump, and numerous other sites. Casual collecting damages sites by completely altering urface data to the point where the manifestations of hundreds of hunter-gatherer sites have literally been stripped away.

- Casual use from recreation, which affects sites such as the Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails.
- Weathering and erosion, as at the Wardell buffalo trap, Holden Hill emigrant inscriptions, and other sites.
- Natural erosion at Johnston Scout Rocks emigrant inscriptions.
- Vandalism and theft, as at the Bridger antelope trap
 where remnants of a juniper fence trap are being
 removed for firewood, and at various petroglyph sites,
 including the Castle Garden petroglyph site.
- Illegal excavations at various sites. The Amee Eaton buffalo kill site has been 80 percent destroyed from illegal excavations and artifact collecting.

4. Major Accomplishments

- Completed the Rocky Gap interpretive site along the Oregon-California Trail.
- Completed Wyoming's Project Archaeology supplement, Discovering Archaeology in Wyoming; provided annual Project Archaeology teachers' workshops.
- Initiated a 4-year data recovery project at the multicomponent Bozovich site under a cost-share partnership with Western Wyoming Community College, the Wyoming Archaeological Society, and rancher Joseph Bozovich.
- Coordinated trail activities and events for the Mormon Pioneer National Historic Trail sesquicentennial wagon train.
- Completed a rock art condition evaluation and stabilization project in partnership with the U.S. Army Corps of Engineers to assess the condition of rock art sites, experiment with stabilization methods, and develop a rock art management manual for Federal agency managers.



A petroglyph with graffitti on Legend Rock in Bighorn Basin, Wyoming.

The Amee Eaton
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5

Because Wyoming was traditionally occupied by nomadic hunting-andgathering bands, numerous tribes, both within the State and in surrounding States, have historical connections to the Wyoming landscape.

- Completed a large land exchange in the Newcastle Resource Area, which will add 1.5 sections of land to the Whoopup Canyon Area of Critical Environmental Concern and bring additional petroglyph panels and associated archaeological sites into Federal protection.
- Developed interpretive sites for Pilot Butte, South Pass Overlook, Lombard Ferry, and Simpson's Hollow along the Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails. Also replaced trail markers along approximately 100 miles of trail segments.

5. Ethnic, Tribal, and Other Groups to Whom BLM Cultural Resources Are Important

Because Wyoming was traditionally occupied by nomadic hunting-and-gathering bands, numerous tribes, both within the State and in surrounding States, have historical connections to the Wyoming landscape. These include the Eastern Shoshone and Northern Arapaho in Wyoming (Wind River Indian Reservation); the Nez Perce (Colville Confederated Tribes) and Shoshone Bannock in Idaho; the Crow, Blackfeet, and Northern Cheyenne in Montana; the Oglala Nation (Pine Ridge), Rosebud Sioux, Cheyenne River Sioux, and Lower Brulé Sioux in South Dakota; the Standing Rock Sioux and Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) of North Dakota; the Northern Ute (Uintah and Ouray Tribes) of Utah; the Southern Cheyenne, Southern Arapaho, Pawnee, and Comanche Tribes located in Oklahoma. Because BLM also administers public land and is responsible for conducting surveys of Indian reservations in Nebraska, it also occasionally consults with the Winnebago, Santee Sioux, Omaha, Ponca, Iowa, Sac, and Fox Tribes.

Other ethnic groups occasionally consulted include the Chinese, the Japanese, and the Basque. While they are not specifically an ethnic group, the Mormons (Church of Jesus Christ of Latter-Day Saints), who have strong historical ties to and own land along the Mormon Pioneer Trail, are commonly consulted. Because significant events associated with the historical formation of their religion occurred along the trail (Martin's Cove disaster, Willie's handcart disaster, Rock Creek disaster, and the Sixth Crossing of the Sweetwater River disaster and rescue), and because of the numerous grave sites associated with

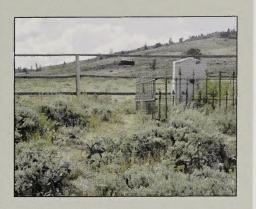
Mormon families, many areas of the trail are treated as traditional cultural properties due to annual church pilgrimages.

6. Existing Partnerships

- The Wyoming State Historic Preservation Office, through cost-share assistance agreements, for automating current and backlogged cultural resource records and for promoting Wyoming Archaeological Awareness Month and Project Archaeology.
- Two facilities, through cost-share assistance agreements, for BLM collections inventory and curation facilities improvement.
- Academic institutions, through multiple cost-share assistance agreements, for data recovery work, ethnohistoric studies, artifact analysis, and research.
- Over 20 separate organizations, including various Stakes of the Latter-Day Saints Church, the Oregon-California Trails Association, the U.S. Forest Service, and the National Park Service, to establish permanent trail markers along the Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails.
- Various museums, through ongoing partnerships, to display, exhibit, and interpret BLM cultural resources.
- The U.S. Army Corps of Engineers to conduct leadingedge research on the effects of lichen on rock art and methods to mitigate damage.

7. Economic Benefits

• BLM's largest tourism draws in Wyoming are derived from the historic trails system, American Indian petroglyphs, historic mining sites, and ongoing archaeological excavation projects. By far, however, the trails receive the most attention. In Wyoming, BLM has established an extensive and significant interpretive program on the main routes of the National Historic Trails. Best estimates based on figures from the Wyoming Department of Tourism and various chambers of commerce studies are that Wyoming receives about



An old graveyard located at Miner's Delight, South Pass, Wyoming.

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Paleontologists

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themselves,

but also about

ancient

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- 1,000,000 visitors per year using trails-related sites. These figures have increased since the BLM's National Historic Trails Interpretive Center opened in Casper in 2002.
- Petroglyph sites receive less publicity, but still manage to draw considerable visitation, with various sites drawing an estimated 29,000 visitors per year.
- Historic mining sites are also an attraction for cultural tourism in Wyoming. Approximately, 90,000 people visited historic mining sites last year, of which 61,000 of them went to the South Pass Historic Mining District.
- Visitors are also attracted to public lands by both recreational caving and hunting. Almost all of the caves for which recreational visitation data are kept are also prehistoric archaeological sites. BLM's Recreation Management Information System data for fiscal year 2000 show that Horsethief Cave alone received almost 700 visitors. Many other caves and rock shelters show recent use by hunters for campsites. On the west slope of the northern Bighorn Mountains, where most of the archaeological cave sites and rock shelters managed by BLM are situated, it is estimated from Recreation Management Information System data that this area receives close to 55,000 backcountry visitors.

Paleontological Resources

1. Program Summary

Within the 18.4 million surface acres that the BLM administers in Wyoming, there are approximately 40 active Paleontological Resource Use Permits each year. As a result, it is estimated that about 400 people are involved in the collection and analysis of fossil material and data annually from these activities. Paleontologists work to answer complex questions, not only about the fossils themselves, but also about ancient environments, the position of drifting continental plates, and the relationships of plant and animal groups to each other over time. Researchers are finding paleontological clues in Wyoming that will help them answer these questions, and they are also discovering spectacular fossils that form centerpieces in museum displays, giving many visitors glimpses into the ancient life.

Wyoming has several areas designated for special management to protect fossils that represent important geologic or evolutionary events. In Wyoming, BLM has an active monitoring program and works closely with researchers and others in the field. As a result, the BLM has initiated or taken part in several law enforcement cases involving unauthorized activities relating to paleontological resources.

2. State Paleontological History

Wyoming has a worldwide reputation as a source of fossils that range from almost a half billion years old to Ice Age fossils that are only a few thousand years old. Rocks of every geologic era, period, and epoch are represented. For much of geologic time, Wyoming was part of a central landmass that accumulated thick sediments on what were, through time, ocean floors, rain forest rivers, large lakes, and savannas. The primary force shaping its present landscape was the uplifting of the mountain ranges, ending about 60 million years ago. The general shift to patterns of erosion rather than deposition has today created bare exposures and rapidly eroding slopes that are perfect places to find fossils.

3. Paleontological Resources at Risk

Among the paleontological resources at risk are four Areas of Critical Environmental Concern, which comprise about 9,300 acres. These areas highlight representative fossil resources, such as sites where dinosaur bones were collected in the 1870s and more recent dinosaur quarries like the "Big Al" *Allosaurus* site and the Red Gulch Dinosaur Tracksite near Greybull. These and many other areas containing fossils are vulnerable to a broad range of impacts, including vandalism and unauthorized collection. Law enforcement support is inherently difficult due to the number of personnel and expanse of areas under BLM's jurisdiction.

4. Major Accomplishments

- Recovered a nearly complete skeleton of an *Allosaurus* in 1992, which was initially discovered by a commercial collector that strayed across the BLM boundary.
- Dedicated the Red Gulch Dinosaur Tracksite in 2002, where visitors can closely examine hundreds of dinosaur tracks.

Wyoming has a worldwide reputation as a source of fossils...



A paleontologist works carefully to uncover the fossil remains of a young adult *Allosaurus* dinosaur. "Big Al," as the fossil has been named, is the most complete carnivorous dinosaur ever found in Wyoming. It is a unique specimen because the bones were fully articulated, or attached, in its life position.



Dinosaur tourism has become a big industry in the West

- Integrated geographic information system (GIS) technology for use in predictive strategies for fossil occurrences.
- Began stabilization efforts at the Petrified Tree
 Environmental Education Area (EEA) to preserve a
 15-foot-tall, in-place petrified tree and related fossil
 material.

5. Existing Partnerships

- The South Dakota School of Mines and Technology to assess the condition of the Petrified Tree EEA, recommend and oversee stabilization measures, and develop interpretive information.
- The University of Colorado Museum and others to develop a regional overview of the paleontologic resources in southwestern Wyoming.
- The University of Wyoming, the South Dakota School of Mines and Technology, and the University of Colorado Museum to house and care for fossils from public lands in Wyoming and to provide paleontological expertise.

6. Economic Benefits

Dinosaur tourism has become a big industry in the West. Well-organized groups such as Earthwatch and Elderhostel conduct tours that bring the public to parts of Wyoming that other visitors don't normally come to see. This provides opportunities for out-of-the-way communities to benefit economically.



