

Canyons of the Ancients

Our First Two Years As a National Monument

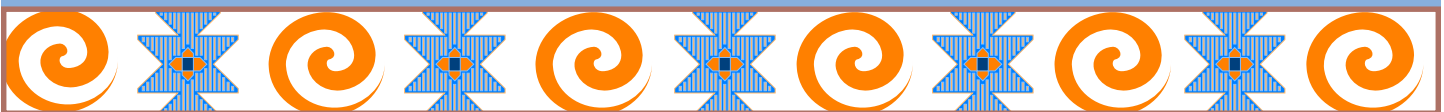
Spring, 2003

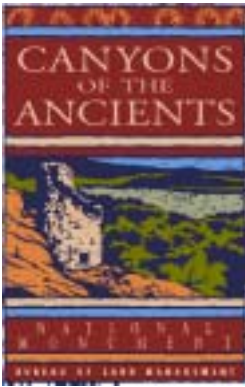
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Canyons of the Ancients

Our First Three Years as a
National Monument
Spring 2003



A New Kind of National Monument

Canyons of the Ancients National Monument encompasses 164,000 acres of federal land administered by the Bureau of Land Management (BLM) in the Four Corners region of south-west Colorado.

The Monument was established June 9, 2000, to protect cultural and natural resources on a landscape scale. Unique archaeological and historical resources made this wide-open, high-desert country a popular candidate as one of BLM's new National Monuments.

Canyons of the Ancients contains the highest known archaeological density in the nation. Portions of the Monument have more than 100 archaeological sites per square mile - some individual sites cover 10 acres or more. The total number of cultural sites is estimated in the tens of thousands.

The Monument has been used or inhabited by humans, including the Northern Ancestral Puebloan culture (or Anasazi), for 10,000 years, and continues to be a landscape used by humans today. Multiple uses – including recreation, hunting, livestock grazing, and energy development – have taken place for years on these BLM lands.

The Resource Management Planning process now underway will decide how these uses will continue within the boundaries of the National Monument. The planning process will offer expanded opportunities for direct citizen participation through a Monument Advisory Council and other local collaborative groups.



Photo Courtesy Cortez Journal

The popular Sand Canyon Trail in Canyons of the Ancients.



The National Landscape Conservation System

Unlike the traditional National Monuments managed by the National Park Service (like nearby Hovenweep National Monument), Canyons of the Ancients is managed by the BLM as part of the agency's National Landscape Conservation System.

Canyons of the Ancients is one of 15 National Monuments administered by BLM. These Monuments were designated under the authority of the Antiquities Act of 1906, to protect objects of scientific and historical interest on federal lands.

Nationwide, BLM manages more than 42 million acres in National Monuments, National Conservation Areas, and other areas designated for their scientific and ecological characteristics. This makes up about 15 percent of BLM's total land base of 261 million surface acres, located primarily in 12 Western states. BLM lands, once remote, provide growing communities of the West with open space that gives the region much of its character.

- Ann Bond, BLM External Affairs

For information on Canyons of the Ancients
National Monument:

www.co.blm.gov/canm/index.html

For information on NLCS:

www.blm.gov/nlcs/index.html

PLANNING FOR THE FUTURE

The *Outdoor Museum* Concept

Since Canyons of the Ancients was proclaimed a National Monument three years ago, we've given much thought to the values that this rugged mesa-canyon



Photo Courtesy Denver Post

LouAnn Jacobson discusses her passion for cultural resources.

National Park. Hewitt's plan, which was never implemented, was to place excavated artifacts in exhibits at cliff dwellings.

In the 1970s, Fred Blackburn, then a ranger for the Grand Gulch Primitive Area in southeast Utah, proposed leaving artifacts in place for responsible visitors to find in remote cliff dwellings. However, the danger of theft sometimes necessitated artifacts be removed for safekeeping in museums.

During the 1990s, Natural Bridges National Monument implemented the *Outdoor Museum* concept as an official agency-sanctioned practice. In order to preserve the integrity of fragile sites, white boxes are provided that contain messages asking visitors not to disclose the location of the sites.

We have been able to document more than 6,000 archaeological and historical sites in the Monument; there may be 20,000 to 30,000 sites in total. A majority of these are rubble mounds that were once homes of Puebloan ancestors. Most visitors wouldn't recognize these as cultural sites, especially when compared with the dramatic sites at Mesa Verde and Hovenweep. However, even rubble mounds have significant research value for archaeologists and religious and cultural value for Native Americans.

The goal of our planning process is to balance the need to protect sites from vandalism and overuse with meeting the public's enthusiasm for visiting heritage resources. We want to provide visitors with a remote, self-discovery experience. This is a significant challenge for us. More than 20 years ago, archaeologist/author Bill Lipe made this prediction:

"We are moving into an era of managed remoteness, of planned romance. I think that is probably how it has to be if we are to preserve the qualities of the area at all in an increasingly mobile and exploitive society. The challenge is to have an effective management that does not itself overwhelm the values it is designed to protect. We shall see..."

(Lipe, William D. 1980 "Grand Gulch: Three Days on the Road from Bluff" in *Camera, Spade, and Pen*, Marnie Gaede, editor, The University of Arizona Press.)

- LouAnn Jacobson, Canyons of the Ancients National Monument Manager

Planning Begins

A multi-year planning effort currently underway will result in a long-term Resource Management Plan (RMP) for the Monument.

It will reflect public involvement from interested parties inside and outside Colorado, in addition to tribal, state, and local governments.

A Notice of Intent to prepare the RMP was published in the April 2002 *Federal Register*. The BLM, Forest Service, and planning contractor, Jones & Stokes Associates, met in November 2002, to assemble an Interdisciplinary Team.

Work continues on determining co-operating-agency status, organizing and developing data, and developing a public-participation plan.

The process will focus on developing management strategies for values identified in the Presidential Proclamation, including:

- Archaeological resources;
- Geological resources;
- Biological processes;
- Historic uses; and
- Current and future land uses.

In the meantime, the Secretary of the Interior and BLM National and State Directors have provided interim guidance for maintaining existing policies, designations, and allocations, except where changes are necessary to comply with the Proclamation.

During the planning process, BLM will offer expanded opportunities for direct citizen participation through a Monument Advisory Committee and other forms of local collaborative groups.

A greater emphasis will be put on local governments, volunteer groups, and businesses to provide existing and new services, and upon partnerships to manage ongoing, activities, such as grazing, recreation, and other uses.

- Steve Kandell,
Monument Planner

PUTTING THE PUBLIC IN PLANNING

How to Get Involved

To create a shared vision for the Monument, the Planning Team is using an interactive process to encourage citizen participation in developing future management direction.

A formal scoping process is underway. Over the past months, BLM has solicited comments through the mail and over the Internet.

Public scoping workshops will be held in Cortez, Durango, and Denver. Dates and locations will be announced through the local media, planning newsletters, Monument Web sites and the *Federal Register*. The deadline for submitting scoping comments will be 30 days after the last scoping workshop.

A draft plan, expected in the winter of 2003 or spring of 2004, will be followed by a 90-day comment period, and public workshops will again be held to provide information and answer questions.

Written comments can be sent to:
 Monument Planner, Canyons of the Ancients National Monument
 27501 Highway 184
 Dolores, Colorado 81323

Comments may also be faxed to:
 970-882-7035
 or e-mailed to:
Colorado_CanmScoping@co.blm.gov.

- Steve Kandell

Advisory Committee to Be Selected

In accordance with a directive from the Secretary of Interior Gail Norton, an Advisory Committee is being established to advise the Secretary and BLM on development and implementation of the Monument Plan.

The Committee's duties will include:

- gathering and analyzing information;
- conducting studies and field examinations;
- hearing public testimony;
- advising BLM on establishing priorities, goals, and objectives;
- developing recommendations for implementation of ecosystem approaches to management; and
- advising BLM on local collaborative management approaches.

Names of nominees were forwarded to the U.S. Department of the Interior this fall from the BLM Colorado Acting State Director. BLM staff are awaiting the Secretary of Interior's confirmation of nominees to serve on the Committee.

Committee members will be selected based on their knowledge or special expertise in the category of interest they were nominated for, and will serve for four years.

The 11-member committee will represent:

- Dolores County Commission (one member);
- Montezuma County Commission (one member);
- Native American affiliated tribes (two members);
- regional and local cultural-resource professionals (two members);
- grazing permittees in the Monument (one member);
- oil and gas industry (one member);
- private landowners adjacent to the Monument, resource-conservation organizations, off-road-vehicle users, commercial recreation providers, or those with statewide perspectives who have no financial interest in the Monument (three members).

For more information on the Monument planning process contact Steve Kandell, Monument Planner, 970-882-4811.

- Steve Kandell

Keep Tabs on the Planning Process

Updated information on the planning process is located on the Monument's Web site at:

www.co.blm.gov/canm/index.html

The site includes the text of the Presidential Proclamation, Interim Guidance, Preparation Plan, and a photo gallery. Soon, there will be an Internet link, from the Web site, dedicated entirely to the planning process. Through this link, the public will be able to submit comments electronically, and view and download geospatial data.

FREQUENTLY ASKED QUESTIONS

? Where can I go in the Monument?

The backcountry is open to public access, but recreation facilities are limited. Visitors are encouraged to stop by the Anasazi Heritage Center for free brochures, maps and advice on the best access points. Please be a respectful visitor:



- Ask for permission before entering or crossing private land adjacent to or within the boundaries of the National Monument.
- Be careful near archaeological sites - they are very old and fragile. Do not step on walls or trash mounds. Never try to climb through doorways.
- Leave artifacts where you find them for others to enjoy. Out of context, artifacts mean little to archaeological research.
- It is against federal law to disturb or remove antiquities. Never dig in archaeological sites. Violators face federal charges.
- Do not add anything to a site. Bringing offerings to a site confuses its original meaning and story.
- Stay on existing roads and trails. Scars on the desert landscape heal slowly and increase soil erosion.

? Where can I camp in the Monument?

Dispersed camping is allowed just about everywhere, but there are no developed campgrounds in the Monument. The only area specifically closed to camping is Lowry Pueblo, where only day use is allowed. Car camping is allowed in other areas, but campers must keep vehicles on established roads (roads are dirt or gravel) and out of areas closed to motorized use (Cross, Cahone, and Squaw/Papoose Wilderness Study Areas, Sand Canyon/East Rock area, and Mockingbird Mesa). There are no limitations on backcountry camping, but all campers are asked to *Leave No Trace*:

- Plan ahead and prepare.
- Travel on trails and camp on durable surfaces.
- Bury human waste, and pack out all trash.
- Leave what you find. Artifacts are protected by federal law.
- Use campstoves instead of campfires.
- Respect wildlife - for your safety as well as theirs.
- Be considerate - yield to others on the trail, keep dogs under control, and moderate your noise levels.



? Where can I drive a motorized vehicle or ride a bicycle in the Monument?

All types of motor vehicles must stay on established roads and trails until the planning process is completed and travel routes are designated. Additionally, motor vehicles are not allowed in closed areas (Cross, Cahone, and Squaw/Papoose Wilderness Study Areas, Sand Canyon/East Rock area, and Mockingbird Mesa). Bicycles must also stay on established roads and trails until the planning process is completed, and travel routes are designated. In addition, bicycles and other mechanized equipment are not allowed inside the Cross, Cahone, and Squaw/Papoose Wilderness Study Areas.



? Can I hunt in the Monument?

Hunting is allowed with a current and valid Colorado hunting license, subject to Colorado state law and regulation. Hunters must keep all motorized vehicles on established roads.

? Does the Monument affect private property?

Private lands are not subject to the provisions of the proclamation that established Canyons of the Ancients National Monument in June 2000. The Antiquities Act of 1906 granted the President of the United States authority to proclaim National Monuments only upon "...lands owned or controlled by the Government of the United States."

CARING FOR CULTURAL RESOURCES

Kiva Needs New Roof

Plans are underway to replace the roof on one of the kivas at Lowry Pueblo National Historic Landmark. An environmental assessment, which includes public input, was completed in December.

A new roof is needed to preserve the interior of the kiva, because the current roof is leaking. It will be replaced with a free-standing shelter that will completely cover the kiva and rooms adjoining it.

Lowry Pueblo is a 1,000-year-old Ancestral Puebloan site with 40 rooms, eight kivas, and a Great Kiva. The area includes a toilet, parking lot, picnic area, and interpretive trail, all wheelchair accessible.

Lowry was excavated in the 1930s and stabilized in the 1960s. The site was dedicated as a National Historic Landmark in 1964. The BLM and University of Colorado conducted additional work at the site in the 1970s, including constructing the first roof over the kiva. Lowry allows visitors to see an Ancestral Puebloan site in a quiet, unsupervised setting.



About 15,000 people visit Lowry Pueblo annually. New interpretive signs will be installed along its trail this summer with funding from the BLM Deferred Maintenance Program and Colorado State Historical Fund.

- Laura Kochanski, BLM Monument Archaeologist



Laws Help Protect Cultural Resources

The oldest law protecting cultural resources is the Antiquities Act of 1906, which established penalties for those who take, dig, injure, or destroy any object or antiquity situated on federal lands.

This law also sets up guidelines for federal land agencies to issue permits that allow qualified institutions to examine and excavate archaeological sites and gather objects of antiquity.

Such permits can be assigned to colleges, universities, museums, and other educational institutions. Their activities must focus on increasing knowledge of cultural resources, and any artifacts they collect must be stored in federally approved museums.

The Archaeological Resources Protections Act (ARPA) was passed in 1979 to support the Antiquities Act. It defined archaeological terms, clarified the definition of a prohibited act, and established specific penalties for those acts.

There are two types of ARPA penalties: criminal and civil. Criminal acts include excavating, removing, damaging, altering, or defacing archaeological resources on public or Indian lands, unless such activity is under permit.

ARPA defines archaeological resources as, "*material remains of past human life or activities of archaeological interest, as determined under uniform regulations.*"

Protected items include pottery, basketry, bottles, weapons, projectiles, tools, prehistoric and historic structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, and human remains.

- Toni Kelly, Dolores Public Lands Visitor Information Specialist

New Finds



A recent inventory of Sand, East Rock, Woods, and Tozer Canyons indicates these areas have been occupied or used by humans for centuries.

Woods Canyon Archaeological Consultants of Yellow Jacket, Colorado, discovered 917 archaeological sites in a survey of almost 10,000 acres of the Monument.

Prehistoric sites, such as artifact scatters, processing areas, pottery-firing kilns, field houses, and large pueblos were found. Historic campsites attributable to Native Americans and Anglo Americans were also recorded.

A report of the findings will be prepared by spring 2003. The information will help expand the Monument's archaeological database and provide information for planning.

- Laura Kochanski

CARING FOR CULTURAL RESOURCES

Vandalism Hurts Everyone

Perhaps the most distressing news we often have to publish about the Monument is information on reoccurring bouts of vandalism, unfortunately a serious and ongoing problem in the Monument.

THE PRICE OF POTHUNTING

Over the past two years, at least half a dozen incidents of illegal digging and vandalism to archaeological sites have been investigated.

Cultural sites have suffered graffiti scratched into prehistoric masonry walls and adjacent sandstone cliffs, campfires built in masonry rooms and alcove sites, and illegal digging in trash middens, rooms and kivas. Even when the perpetrators are not pothunters, their activities damage sensitive cultural sites.

"In one case, as a result of an apparent party, wall stones at a site were used to create a ring of chairs in a small cliff dwelling, a campfire built in a room in front of the rock shelter, and trash strewn around," said Laura Kochanski, Monument Archaeologist.



Clues to a rich cultural past are scrambled and stolen by pothunters at a trash midden.



Another Monument sign falls victim to vandals.

A SIGN OF THE TIMES?

This fall, vandals spray-painted graffiti on the Monument entrance sign and informational bulletin board at the south end of the Sand Canyon Trail in McElmo Canyon. Sandstone, a highway sign, and both lanes of County Road G were also sprayed with graffiti. Vandals have also been using Monument signs for target practice. Multiple

shotgun blasts at close range recently mangled a new sign near Sand Canyon Pueblo. Law enforcement officials believe the incident happened in December, 2002.

In spring 2002, another Monument sign near Burro Point was vandalized, and the register box and bulletin board at Sand Canyon Pueblo Trailhead were used for target practice.

ILLEGAL OFF-ROAD SCARS

BLM officials recently discovered extensive damage to natural resources in Risley Canyon from illegal off-road vehicle activity. Multiple tire tracks were found leaving a main road and climbing up a fragile wash bed. Large portions of juniper trees were cut off to clear a path, rocks were smeared with rubber marks from spinning vehicle tires, and tire tracks were cut through wash banks. Monument regulations prohibit motorized travel off designated roads to protect the fragile desert backcountry.

- Ann Bond

What Can Be Done?

Perpetrators of crimes face federal charges of vandalism to government property, which can carry up to a one-year prison sentence and a \$100,000 fine. Currently, two BLM law enforcement officers monitor the Monument.

"We try to avoid patrolling in a predictable pattern to increase our chances of being at the right place when someone wants to do the wrong thing," said Keith McGrath, Monument Law Enforcement Ranger. "I suspect that the signs are often vandalized at night, but the majority of use in the monument is during the daytime."

"These acts of vandalism show disrespect for Native Americans whose ancestors lived here and to everyone who values these irreplaceable natural and cultural resources," said LouAnn Jacobson, Monument Manager. "We have to spend thousands of taxpayers dollars to repair and replace signs that are continually vandalized – signs that are placed to help guide people to places in the Monument we want to share with public."

If you see suspicious or illegal activity taking place in your National Monument, call 970 882-4811.

- Ann Bond



(At left) Juniper trees were cut away to make way for vehicles along an illegal off-road route in a wash in the Monument.



(At right) Illegal off-road vehicle use has turned a fragile wash into an illegal road.

THE PAST IS PART OF THE FUTURE

Native Americans Have Close Ties

As part of the planning effort, the BLM initiated consultations with Indian tribes that claim cultural affiliation with the Monument.

In 2002, Two Rivers Consultants and SWCA Environmental Consultants submitted the results of a year-long Cultural Affiliation Survey for the Monument.

Individual meetings were held with the Laguna, Acoma, Pojoaque, Nambe, Isleta, Zia, Picuris, San Juan, Taos, Santa Domingo, Santa Ana and Santa Clara pueblos of New Mexico. Personal visits were also made to the Jicarilla Apache, Southern Ute, Ute Mountain Ute, Northern Ute, Hopi and Navajo reservations.

The consultation helps document evidence supporting tribal-affiliation claims to the Monument, and gathered tribal input for planning and management. Each tribe expressed its views on its ties to the people who lived in the area in the past.

The consultations will also help the Anasazi Heritage Center resolve cultural-affiliation issues in relation to the Native American Graves Protection and Repatriation Act. The information will be used to address the final disposition of human remains and associated funerary objects now curated at the Center.

BLM officials met with the tribes again this summer in Santa Fe to discuss the results of the cultural affiliation study and set the stage for Native American involvement in the planning process.

All tribes and pueblos received a draft of the study for review, and a final report was submitted in December.

- Susan Perlman, Two Rivers Consultants



A reconstruction of daily life at Lowry Pueblo, circa the 12th Century AD.



Photo Courtesy Dolores Star

Cattle ranching has been a part of the history of the area that includes the Monument for generations.

Local History Plays Vital Role

Sometimes it seems the *prehistory* of the Southwest overshadows the *history* of the area. But the BLM will try to balance this by collecting oral histories as part of the cultural information included in the upcoming Monument planning process.

Local interviews from selected Southwest Colorado residents will help document the role that individuals and communities have played in the economic and social development of the area from 1600 to the present.

“Oral histories - the cultural information passed down from generation to generation by word of mouth - can bring the past to life and help us plan for the future,” said LouAnn Jacobson, Monument Manager.

The effort will be part of a landscape-scale overview of historic resources to document immigration events, learn how places were named, chart social and economic development, and record hardships, successes, and important family and community events. In addition, the information will be used to help define:

- the nature and distribution of historic properties;
- National Register of Historic Places eligibilities;
- areas of special significance;
- historic uses of public and private properties;
- threats to the integrity of historical sites; and
- strategies for resource management and protection.

The oral history survey will incorporate folklore, music, and eyewitness reports of historical events that have taken place on public lands within the boundaries of the Monument. Information from adjacent areas may also be used to help characterize historic contexts.

- Ann Bond

SAVING AMERICA'S TREASURES

Storing Antiquities an Important Job

Originally built to store the one million artifacts recovered in the area now flooded by McPhee Reservoir, the Anasazi Heritage Center now houses three times as many cultural objects.

The Center serves as the repository for collections and archives not only from the Monument, but also from three BLM field offices - the San Juan, Gunnison, and Uncompahgre.

It also houses collections for the Bureau of Reclamation, San Juan National Forest, Ute Mountain Ute Tribe, Crow Canyon Archaeological Center, Anasazi Historical Society, and several contract archaeology firms.

Collections are available through public tours that allow hundreds of visitors to learn how artifacts are processed, stored,



More than three million cultural objects are stored at the AHC, occupying more than 7,000 cubic feet of storage space, with 1,800 linear feet of associated documentation.

and shared. Photos, archives, and artifacts are loaned out for exhibition at other museums, to researchers for analysis, and to educators for use in interpretive and educational projects.

The curation staff conducts artifact-identification workshops for law enforcement personnel, BLM and National Forest cultural resource staff, and site-steward volunteers. Curation is currently overseeing conversion of the entire Collections Management Database, numbering over 800,000 records, to a new system. This will allow for more efficient data input, the ability to incorporate digital images with object records, greater ease in running searches, and improved ability to import and export data.

Curation volunteers are also making progress on other projects, including artifact packing and storage, archives processing, and database entries. All contribute to establishing a baseline inventory, as well as enhancing the ability to retrieve collections for researchers.

- Tracy Murphy, Heritage Center Museum Specialist



In 2002, more than 17,000 objects - like these maps - and 90 linear feet of archives were added to the Heritage Center collection.



Saving America's Treasures

More than 80,000 artifacts from earlier excavations in the Monument are now available for educational and research purposes at the Anasazi Heritage Center, thanks to a partnership with the University of Colorado and Anasazi Historical Society, with funding from Save America's Treasures and the Colorado State Historical Fund.

The grants allow the Heritage Center to confirm the location of federal collections stored in nonfederal repositories, evaluate the condition of artifacts, and retrieve the collections. The objects are repackaged to meet current standards, making them accessible to the public for education, interpretation, and research purposes.

Over the past three years, staff have catalogued collections and research data from the Crow Canyon Archaeological Center, University of Northern Arizona (Ridges Basin Project), and Soil Systems, Inc. (Ute Irrigated Lands Project) into the database.

The grants also funded a project to process and enter thousands of artifacts into the database that had been stored at the Center for decades. These included collections from surveys of Mockingbird Mesa conducted in the 1970s and 1980s, and the Dolores Grazing District Survey in the 1960s.

- Susan Thomas, Heritage Center Curator

INTERPRETING CULTURAL RESOURCES

Heritage Center is First Stop

All visitors to Canyons of the Ancients are encouraged to visit the Anasazi Heritage Center first to pick up maps and brochures about the area before venturing into the backcountry.

The Center also serves as an interpretive center for the Trail of the Ancients Scenic Byway and Four Corners region. The main gallery features a hands-on Discovery Area, reconstructed pit house, and exhibits on archaeology, local history, and Native American life styles.



Visitors to the Heritage Center learn about Native American lifestyles from modern-day tribal members.

During the 360 days the museum was open in 2002, volunteers and interpretive staff answered questions and

provided tours to more than 30,000 visitors. Educational programs were offered to schools, colleges, and dozens of other groups.

In 2002, a new exhibit devoted to Canyons of the Ancients was installed. It includes historic and modern photographs of some of the more visible archaeological sites in the Monument and a kiva fragment from Lowry Pueblo. Display cases contain artifacts excavated from Sand Canyon Pueblo, and text panels offer commentaries by modern Pueblo people.

- Marissa Dominguez Karchut,
Museum Specialist



Students gather last summer at the Anasazi Heritage Center for an Archaeology Discovery Program.

Teaching the Children Well

Educational opportunities at Canyons of the Ancients are unlimited, but the trick is to get kids personally engaged in the resources as citizen owners. Local teachers are aided in this endeavor through a collection of experience-based lesson plans called the *Escalante Curriculum*.

The *Escalante Curriculum* offers 10 different self-guided activities and is available free to teachers and group leaders to help enhance educational visits to the Heritage Center or National Monument. The lessons are designed for fourth- through eighth-grade students visiting the Heritage Center. The activities are flexible enough to be adjusted to reflect individual abilities or grade levels.



Artwork from the Escalante Curriculum.

Activities range from touring the Heritage Center gallery to more in depth activities focusing on themes from archaeology to bird watching. As a part of the program, a college-credit workshop for teachers interested in using the curriculum is offered each summer.

Production was funded by the Colorado State Historic Fund and BLM National Fee Demonstration Project.

- Victoria Atkins, Interpretive Education Lead



Cortez area school children take notes during an educational field trip to Sand Canyon.

MAKING ARCHAEOLOGY ACCESSIBLE

Learning Comes to Life

Educational opportunities at the Monument abound. *Junior Explorer – Archaeology*, a self-guided activity booklet, is designed for families with young children. This free booklet has coloring pages, games, and activities.



Also in preparation is a new teachers' guide and student activity booklet being produced by a Montana State University program known as The Watercourse, creator of *Project Wet*. It incorporates interviews with ranchers, farmers, archaeologists, Native Americans, wild-life biologists, and artists with ties to the Monument.

Cultural Heritage of the Great Sage Plain is showing in the Heritage Center theater. This 20-minute documentary incorporates interviews with archaeologists and Native Americans.

It offers an updated interpretation of the history and landscape of the geographic area known as the Great Sage Plain, which includes Canyons of the Ancients.

For those who want to explore virtual archaeology and ancient Pueblo life on their computer, there's *People in the Past*, an interactive program about Lowry Pueblo. The program includes video interviews with archaeologists and modern Pueblo people. You can also travel back in time to daily life in the 12th Century at Lowry and walk through the rooms of the village.

You can also travel in time back to daily life in the 12th Century at Lowry and actually walk through the rooms of the village. *People in the Past* runs on either a MAC or Windows platform and is on sale at the Heritage Center museum shop (with an optional classroom activity guide).

- Victoria Atkins, Monument Interpretation and Education Lead



Data at the Fingertips

Cultural resource professionals have typically relied on paper maps, survey reports, and site records for the information they need to perform their duties.

Such valuable sources of information may never become obsolete, but Geographic Information Systems (GIS) technology will soon allow Monument archaeologists to access most of this information with a few key strokes and mouse clicks.

GIS is a computer system that allows digital maps to be integrated with information contained in a database. Although the technology is not new, in the past few years GIS has been used with increasing frequency as a cultural resource management tool.

The Colorado Office of Archaeology and Historic Preservation initiated the Monument GIS project in 2000, under contract with the BLM. This agency manages cultural resource information for the entire state, including the records of archaeological and historic sites and surveys that are being used to build the Monument GIS.

When the GIS project is complete, archaeologists will have a digital map that displays all archaeological sites and surveys within the Monument's boundaries. Most importantly, the sites and surveys on the map can be linked with a database that contains a variety of relevant information.

The GIS and associated database can both be updated as more recent data are acquired. The goal is to increase the efficiency with which cultural resources are managed and protected.

- Chris Bevilacqua, Colo. Historical Society

Brochures Benefit Visitors

By Ann Bond

BLM has produced two brochures for free distribution to help people get the most out of their visit to the Monument. One highlights four areas – Lowry, Painted Hand and Sand Canyon Pueblos, and Sand Canyon Trail. It offers a large fold-out map and information on cultural and natural resources. The brochure also includes safety tips and Leave No Trace suggestions, as well as an idea of conditions to expect in the backcountry.

A new interpretive brochure on Lowry Pueblo, the only developed recreational site in the Monument, is also available to help visitors get the most out of their visit to this National Historic Landmark. It includes background on the Ancestral Puebloan occupation, archaeological research, and tips on how to enjoy the site without damaging the architecture. Brochures for Painted Hand and Sand Canyon pueblos are also in preparation.



Free brochures are available at the Anasazi Heritage Center, San Juan Public Lands Office, and Cortez Colorado Welcome Center.

PARTNERS IN EDUCATION



Photo by Dennis Garland

Colorado Division of Wildlife Manager Robin Olterman displays wildlife hides to students at a Field Day last year.

Kids Consider Castle Rock

Each spring Montezuma County fourth graders head to McElmo Canyon to learn about the natural and cultural landscapes of CANM.

Crow Canyon Archeological Center sponsors the program at Castle Rock Pueblo, an Ancestral Puebloan site at the south end of Sand Canyon Trail.

Archaeologists, soil scientists, wildlife biologists, and educators lead students through experiential activities on soil composition, geology, and minerals.

Students consider how these factors may have influenced the lives of the pre-historic people who lived there. They also learn about Ute, Navajo, and Anglo settlements in the area.

The goal is to make children aware of archaeology's contribution to Colorado history and of how they can help preserve cultural resources. Last year, Crow Canyon charged \$3 per student to fund the project. The Colorado Historical Society and Berger Foundation helped with funding in the past.

- Elaine Davis, Crow Canyon Archaeological Center

Find out more :
www.crowcanyon.org

Lots to Crow About in the Canyon

Crow Canyon Archaeological Center has been involved for several years in excavations, research, and protection of the ancient pueblos that mark both ends of the popular Sand Canyon Trail.

In the 1980s and '90s Crow Canyon excavated Sand Canyon Pueblo, at the north end of the trail. The Center's ongoing research on social and political organization of the village has been published in journal articles and books, and a final report is forthcoming.

deducted fieldwork at the Castle Rock Pueblo, which was a much smaller settlement than Sand Canyon Pueblo but occupied at the same time.

Crow Canyon's research revealed that the occupation of Castle Rock ended with a battle, and reconstruction of the event is one of the best-documented cases of Southwestern warfare.

The artifacts, documentation and databases from Crow Canyon's excavations of Sand Canyon and Castle Rock Pueblos are curated at the Anasazi Heritage Center.

- Mark Varien, Crow Canyon Archaeological Center



The southern terminus (above) of the Sand Canyon Trail is the site of the Castle Rock Pueblo.



The northern terminus (above) of the Sand Canyon Trail is the site of the Sand Canyon Pueblo.

Crow Canyon research established that Sand Canyon Pueblo was one of the largest Ancestral Puebloan villages to be occupied in the final decades of occupation of the Mesa Verde region.

Last summer, Crow Canyon helped install new interpretive signs and reroute trails that were impacting the cultural resources at the Sand Canyon Pueblo.

Crow Canyon crews also con-



Art by Paul Ermigiotti, Courtesy Crow Canyon

An artist's reconstruction of the Castle Rock Pueblo, provided for students in the *Castle Rock Field Journal*, helps them visualize what the ancient village looked like.

PARTNERS IN PROTECTION



Site steward Bill Hayes monitors an archaeological site in Canyons of the Ancients.

Protectors of the Past

The ancient dwellings left by the Ancestral Puebloans are delicate, nonrenewable resources that face many dangers. Looters dig up sites, not just robbing them of artifacts, but forever scrambling archaeological information. Vandals scratch graffiti over petroglyphs.

Visitors unintentionally cause damage by stepping on walls, climbing through doorways, placing oily hands on fragile pictographs, piling artifacts on rocks, and trampling vegetation.

Two years ago, when the Monument was created, community leaders, business owners, educators, tribal leaders, and public land managers got together to search for possible solutions to these problems. One alternative was creation of the Southwest Colorado Cultural Site Stewardship Program, a volunteer organization funded by the Colorado State Historical Fund, San Juan Public Lands Center, and Four Corners Heritage Council.

Over the past two years, 85 volunteers have been trained as archaeological site stewards to watch over 65 prehistoric and historic sites on public lands, 45 of which are in the Monument. The stewards become the eyes and ears of the BLM, watching for damage caused by vandals or by unintentional, but overzealous, visitors.

"It's an incredible experience. We visit our site once a month, and two other stewards monitor it, as well," said Jigger Staby of Durango, who, with her husband, Paul, has been a site steward for two years.

"We've definitely seen changes at our site – erosion, rock fall, and signs of possible digging by hand. Once you're trained to look for evidence, you see it."

Site stewards attend training workshops and conferences and go out in the field with agency archaeologists. They also help with site restoration projects, such as Public Lands Day events.

- Ann Bond

Stability Saves Sites

You can't limit impacts to archaeological sites until you know where they are located and what condition they are in. That's why the McElmo Canyon Research Institute (MCRI) at Kelly Place and Crow Canyon Archaeological Center have conducted surveys for the BLM in the area over the past decade.

Much of the work was funded by a grant from the Colorado Historical Society and Service Elderhostel Program. A survey of 1,600 acres identified 73 newly recorded, and 29 previously recorded, sites. Of these, 52 were recommended as eligible for the National Register of Historic Places.

The next step has been to protect the most threatened areas. Over the past four years, Elderhostel volunteers, under the supervision of MCRI archaeologists and BLM specialists, have stabilized six sites. This involved long hikes while carrying materials, ladders, scaffolding, and tools. Kelly Place and Mesa Verde Back Country Horsemen supplied water to the workers on horseback.

Stabilization of a site is not the same as *restoration*. The aim is to preserve the site as is, not to rebuild or restore it to what it may have looked like when it was occupied. The process involves filling in cracks and spaces between stones caused by erosion of the mud mortar. The goal is to have the ordinary visitor not be able to tell the difference.

Much time was spent analyzing and identifying the type, color, and consistency of the original mortar to match the new mortar to the original, so that the sites look untouched by modern hands.

Documentation, such as maps, photographs, and drawings, will help future surveyors distinguish the original construction from the stabilized area.

- Jim Colleran, McElmo Canyon Research Institute



Photo Courtesy McElmo Canyon Research Institute

Elderhostel volunteers hike stabilization gear into the Vision House site last year.

RECREATION PROJECTS



New signs are cedar with hand-routed lettering and piled rock bases to be unobtrusive and conform to the backcountry character of Sand Canyon.

More Feet = More Impact

In the late 1980s, a few hundred people visited Sand Canyon each year. Today, some 17,000 hikers, mountain bikers, and horseback riders use the Sand Canyon Trail annually. A result of the increased use has been a cobweb of user-made trails heading off the main trail. These unsightly “braided” trails encourage damage of archaeological sites, and leave trampled vegetation and biological soil crusts in their wake.

The BLM continues to work to erase these user-made trails to prevent further damage. In 2002, Southwest Youth Corps crews blocked 20 such user-made paths with dead trees and transplanted native cactus. They then built official spur trails to allow people to access cultural sites off the main trail. Often, a single spur trail replaced several user-made paths leading to the same site.

Crews then installed new signs marking where each spur trail left the main trail. In addition, signs reading “Fragile Area, Please Stay On Trail,” were erected to remind visitors to limit their impacts.

Previously, during a cleanup day at the Sand Canyon Trailhead in McElmo Canyon, crews dismantled equipment in an old pump house and burned the structure to the ground. The well pipe was sealed to protect groundwater from contamination, and old boards, fencing, metal, and wire were removed. New “No Motor Vehicles” signs also were installed at access points to the 8,750-acre Sand Canyon Archaeological District.

- Penny Wu, Outdoor Recreation Planner

Managing Recreation

By Penny Wu

To say recreation facilities are limited in Canyons of the Ancients is an understatement - there are no developed camping facilities, no paved roads, and few signs. Lowry Pueblo National Historic Landmark, a day-use facility, is the only developed recreation site. It is also the lone fully excavated and interpreted archaeological site.

But you can also say that recreation is unlimited in the Monument’s 164,000 acres of rugged mesa-canyon backcountry. Dispersed camping and hunting are allowed just about everywhere (as long as motorized vehicles are kept on roads).

Conversely, there are 25,000 acres of Wilderness Study Areas (WSAs) and some other areas, where motor vehicles and bicycles are prohibited.

BLM has been gathering data on recreation for use in the planning process. A grant from the Colorado State Parks funded a Global Positioning Satellite (GPS) inventory of all travel routes to record:

- routes (primary, secondary, reclaimed, single track);
- surface composition (gravel, natural);
- type of use (4wd, 2wd, ATV, horse, hiking, biking);
- amount of use;
- width of route and road number (if applicable);
- whether a route accesses a destination, i.e., vista, campsite, garbage site, or range improvement.

BLM is also developing an inventory and maintenance schedule for all signs, including the new entrance signs. Portable traffic counters have been installed in both remote and heavily used areas to count foot and vehicular traffic.

Monitoring has been increased in the Cross Canyon, Cahone Canyon, and Squaw/Papoose WSAs, where motorized and mechanized travel, and construction of new roads or facilities, are prohibited. Volunteers help BLM patrol the WSAs, watching for vandalism and illegal off-road-vehicle activity, and recording visitation levels.

BLM plans to improve public access, enhance boundary and trailhead signs, and address illegal motorized access.

“No Motorized Vehicles” signs have been installed at key WSA access points.



Photo Courtesy Denver Post

Recreation staffers Rick Ryan and Penny Wu discuss visitor impacts in Sand Canyon with reporters.

CARING FOR THE LAND



Photo Courtesy Cortez Journal

SJMA volunteers help haul off moldy hay at the Little Dog Pueblo in 2002.

The San Juan Mountains Association (SJMA) has coordinated with the BLM for the past two years to hold Public Lands Day events in the Monument. This nationally observed event began in 1994 with 700 volunteers working in three locations. Today 70,000 volunteers donate time at 500 locations annually.

In fall, 2002, our local Public Lands Day was held at Little Dog Pueblo, an archaeological site on 160 acres recently acquired by the BLM. Little Dog, part of the very large community surrounding Lowry Pueblo, is listed on the National Register of Historic Places. It was first excavated in the 1930s, when archaeologists discovered dwellings of sandstone and adobe had been built on top of earlier constructed pit houses.

"This site was occupied at least three different times over hundreds of years and built upon twice," said Laura Kochanski, Monument Archaeologist.

The unique archaeological values of the site made the acquisition an important addition to the Monument, but the property needed some cleanup. A wooden tower sat on top of the midden pile, an ancient landfill of the Ancestral Puebloans who lived there. The volunteers tore down and removed the structure, trash, and a gate.

- Kathe Hayes, SJMA Volunteer Coordinator



Volunteer Mike Andrews of Durango builds fence at Painted Hand Pueblo in 2001.

'Boundary Archaeology'

An archaeologist tries to reconstruct the life and customs of past civilizations by examining the physical evidence left behind in ancient ruins. A *boundary archaeologist*, on the other hand, tries to reconstruct original land surveys by examining the written record and physical evidence left behind.

Of course, the term *boundary archaeology* is not an official title; the proper term is *cadastral survey*. A cadastral survey (derived from the Latin "cadastre," referring to a registry of lands) is the art and science of determining land boundaries. A cadastral resurvey, such as the one conducted in the Monument, reestablishes the position of the lines of an original survey, according to the best available evidence.

BLM cadastral surveyors have been exploring the Monument in search of the lost and elusive boundary markers from the Public Land Survey System, dating back to the 1880s. They have unearthed old plats and field notes in dusty filing systems, and hiked across the desert in search of marked stones and trees, pits, blazed lines, and old fence lines.

When a marker from the original survey was found, its location was noted, it was buried in place, and a new marker placed beside it. Finding these clues proved difficult, but not impossible (see photos above at right). Results will help create a boundary map of the Monument showing the exact location of federal and private interests.

In the course of the work, BLM cadastral surveyors contacted more than 30 landowners to alert them to the purpose of the survey and ask for permission to cross private lands. Surveyors personally spoke with as many landowners as possible and did not receive any negative responses. Definite and fixed boundaries will be of significant commercial value to adjacent landowners and allow the government to manage the land properly in the public interest.

The BLM Branch of Cadastral Survey is the sole agency entrusted by the federal government to determine all federal and Indian land boundaries.

(At right) A boundary stone from original surveys in the 1880s carved with historic etchings.



Photos by Randy Bloom



(At left) A brass disc on a steel pipe is set in place of an original stone monument.

- Randy Bloom, BLM Cadastral Surveyor

LAND ACQUISITIONS

Local Family Conveys Site

A 40-acre parcel of land and important archaeological site acquired by the BLM two years ago from a local Cortez family is now part of the Monument.

The Ansel Hall Pueblo covers 15 acres of the property. Its kivas, Chacoan Great House, towers, and rooms were excavated in the 1940s. Although the site has no standing walls, it has great research potential.

"It's a significant site that needs long-term protection," said Bill

Winkler, who with his wife, Merrie, conveyed the property to the BLM. "We looked after it for 50 years. It's time to assure its future."

Merrie's father, Ansel Hall, originally purchased the property, recognizing its archaeological value. The Ansel Hall Pueblo was entered in the National Register of Historic Places in 1997.

In 2000, the Winklers sold the property to the Wilderness Land Trust, a nonprofit land conservation group, which conveyed it to the BLM for appraised fair market value. The Colorado State Historical Fund provided financial support.

"Our plans are to continue the outstanding stewardship and preservation at the site by Ansel Hall and the Winkler family," said LouAnn Jacobson, Monument Manager.

- Ann Bond



(Left-right) Monument Manager LouAnn Jacobson and BLM Realty Specialist Charlie Higby receive the deed to the Ansel Hall Pueblo from Merrie and Bill Winkler, with help from Mark Pearson, Wilderness Land Trust.

Rancher Proposes Exchange

An area rancher has proposed a land trade that would allow the BLM to add a 1,000-acre ranch to the Monument. In exchange, the rancher would acquire four isolated BLM parcels next to his ranch near Pagosa Springs, which BLM has designated for disposal because of a lack of public access.

The Pagosa rancher has a contract to purchase a ranch in Yellow Jacket and Bridge canyons, which the BLM would acquire in the exchange. The ranch has been used for sheep ranching. BLM acquisition would allow public access to lands with unique natural and cultural resources, including a natural bridge.

The property is also near the McElmo Research Natural Area, an area within the National Monument designated for reptile research. Few federal cultural inventories have been done on the ranch, but significant archaeological sites have been found on nearby BLM land. If the proposal is pursued, the BLM will study benefits to the public in an environmental assessment.

- Clyde Johnson, BLM Realty Specialist



An area rancher has proposed a land trade in which BLM would acquire this 1,000-acre ranch surrounded by and adjacent to the Monument.

Laws Guide Exchanges and Acquisitions

Private lands are not subject to provisions of the proclamation that created the Monument. Locally, the BLM is interested in acquiring inholdings within the Monument's boundaries, but property owners must initiate a transaction.

The Antiquities Act of 1906 grants authority to proclaim National Monuments only on "...lands owned or controlled by the Government of the United States." The Act does not provide any authority for condemnation, so a landowner must willingly choose to exchange or sell land to the government.

"We do not pursue anything unless a seller comes to us," said LouAnn Jacobson, Monument Manager.

Most BLM land exchanges and acquisitions are processed under authority of the Federal Land Policy and Management Act, which restricts exchanges to lands within the same

state. Lands must be of equal value, although limited cash equalization adjustments are allowed. BLM must also determine that "the public interest will be well served by making the exchange."

This is determined through an environmental assessment, which includes public input on whether the transaction will enhance land management, consolidate ownership, and protect environmentally sensitive areas.

Land exchanges are considered when they will help develop more effective work units, reduce administrative costs, and meet community needs. The goal is to trade isolated tracts of BLM land that are difficult to manage or which have low resource values, and to acquire areas with recreation, open space, scenic, and natural or cultural resource values.

- Ann Bond

MANAGING FIRE'S ROLE



Photo by Robert Winslow

Crews use chainsaws to thin trees, brush, and dead material this fall at the Anasazi Heritage Center.

Reducing Fire Danger

Fire crews who spent the summer battling wildfires turned their focus this fall toward reducing the threat of future fires.

The San Juan Hotshots and Dolores Public Lands Office Fire Crew spent several weeks thinning hazardous fuels on the federal land around the Anasazi Heritage Center to protect the interpretive museum and its archaeological resources from wildfire.

"Our landscape looks pretty different but we will have a much safer environment for us and our neighbors," said LouAnn Jacobson, Monument Manager. "One of our goals was to make this a fuels reduction demonstration area so our visitors can see how a thinned area looks."

Although hand thinning is labor intensive, it proved the perfect method at the Heritage Center because it allowed archaeologists to mark cultural sites to be avoided, and thinning crews to leave clumps of vegetation for wildlife habitat.

Brush removed from under trees should help keep flames at ground level where fire is easier to control, and the additional spacing between trees will slow fire from spreading from tree to tree.

The removal of dead pinyon pines killed in the recent *Ips beetle* outbreak not only reduced the fire hazard, but also made the area look more attractive. The leftover wood was given to Center volunteers to use as firewood.

- Pam Wilson, Fire Information Specialist

Helping Burned Areas Heal

Rehabilitation in areas of the Monument where wildfires have occurred is an ongoing process. Random plots have been established so that seeding success, recovery of vegetation, presence of noxious weeds, erosion and site stability, and success of rangeland protection measures can be tracked.

Monitoring shows that if healthy native vegetation is present before a wildfire, recovery of native plants is very likely. If the pre-burn plant community was dominated by weeds and cheatgrass, however, the prognosis is not good, even with seeding.

Reseeding efforts have seen limited success in the areas of the Bridge Fire near Hovenweep National Monument, and the Pedro Fire in the bottom of Hovenweep Canyon - two fires that occurred in the summer of 1998.

Both areas were predominantly sagebrush with little understory vegetation before the fires, and are now dominated by cheatgrass, an invasive, non-native species. Herbicide treatments have prevented noxious weeds from moving in, but the threat of knapweed is nearby.

Another case in point is the Hovenweep Canyon Fire, which burned at the head of the canyon in 2000. Although the area was reseeded, most of the seed washed off the steep slopes before it could sprout. Native forbs, grasses and shrubs are resprouting today, but cheatgrass and other weeds are also present, especially in the bottom of the canyon.

This summer, volunteers removed musk thistle by hand, and other infestations were treated with herbicide. Because a good population of native plants existed prior to the fire, hopes are that the area will reestablish itself as a healthy native community with some weed management.

- Leslie Stewart, Monument Ecologist



Members of the Interdisciplinary Team who will help conduct the Monument's planning process visit the site of the Hovenweep Fire this fall to assess the success of rehabilitation in burned areas.

HELPING HABITAT



At least 16 species of reptiles and amphibians, including the rare leopard lizard above, have been found living in the McElmo Research Natural Area of CANM.

in 1982 by the BLM and Colorado Department of Natural Resources. Its ecology, plant and animal species, and soils are all unique. The McElmo RNA includes three life zones: Great Basin sagebrush, pygmy-conifer woodland, and salt-desert shrub vegetation communities. This diversity is what accounts for the proliferation of reptile and amphibian species living at the fringes of their suitable habitat.

Species known to inhabit the RNA and adjoining areas include the desert spiny lizard, king snake, coach whip snake, spade foot toad, Utah tiger salamander, western whiptail lizard, tree lizard, and yellow-headed collared lizard.

The area also harbors the rare leopard lizard and the night snake, two reptiles known only in the desert areas of western Colorado. The uncommon Utah black-headed snake and other secretive snake species may also occur in the area.

- Charlotte Thompson, Wildlife Technician

All Creatures Great and Small

Many of the Monument's treasures are hidden or hard to find, a distinction that adds to its mystery and appeal. One such gem is a resident population of diverse desert reptiles and amphibians.

The Colorado Natural Heritage Program, a nonprofit organization that tracks and ranks Colorado's rare and important species and habitats, will begin surveys this spring to document these exotic inhabitants of Canyons of the Ancients.

Research is showing a global decline in amphibians and reptiles due to pesticides, habitat destruction, flash floods, drought, and introduced predators.

"Reptiles have suffered a major decline in the Monument area within the last 30 years," says Dr. Albert Spencer, a retired Fort Lewis College zoology professor. The surveys will help determine whether local declines are due to climate changes or other impacts.

Spencer has observed nine species of snakes, five species of amphibians, and 11 species of lizards in the Monument. He is aware of several other species in nearby areas that he feels also exist within similar habitats nearby.

Part of the Monument is set aside specifically for research of rare reptiles and their habitat. The 400-acre McElmo Research Natural Area (RNA) was designated

Well Pads Reclaimed

Kinder Morgan Company recently completed reclamation of four carbon dioxide wells that had not produced gas for two decades in the Monument.

BLM requested that the company evaluate 15 wells that had not produced gas for several years. The company responded with a proposal to plug nine over the next three years, with tentative plans to reactivate the remaining six.

"These wells were part of our early exploratory program and had been temporarily abandoned for years," said Bob Clayton, Kinder Morgan Production Supervisor. "Improvements in our drilling program have reduced the necessity to drill as many wells as we originally planned. These pads are a great distance from our production facilities, so we decided to permanently abandon them."

Kinder Morgan currently has about 60 carbon dioxide wells in the National Monument. The four reclaimed sites are in the Risley Canyon area of the Monument.

"One of our goals is to monitor the condition of well locations to ensure compliance with oil and gas regulations and move forward with reclamation of abandoned wells," said LouAnn Jacobson, Monument Manager.



About 2.5 acres of Federal land were reclaimed at each well site.

Each pad was then fenced to exclude livestock grazing. The areas will remain fenced for two years or until vegetation is re-established. In addition to surface reclamation, Kinder Morgan sealed each well bore with cement to prevent the cross flow of groundwater.

- Ann Bond

WATER IN A DRY LANDSCAPE



Because the Monument is such a dry landscape, knowing the source of every drop of water is important for management.

Finding the Fountains of Life

The availability of water in the Monument's high-desert landscape has historically shaped the lives of the people, animals, and plants that have subsisted here. Because water is such a limited commodity, locating riparian habitat often leads to discovering rare plants and animals. In addition, archaeologists often discover cultural sites near water sources.

An inventory of water sources hasn't been conducted in the area since the early 1980s, so BLM is resurveying springs, seeps, reservoirs, stock ponds, and wells with Global Positioning Satellite technology. The new studies will determine whether flow rates or vegetative conditions have changed and offer current data on water developments.

Inaccessible areas overlooked earlier are being explored, and 13 new water sources previously missed have been recorded, including some large springs. Information is being collected by precipitation gauges. A precipitation gauge near Cross Canyon recorded 3.9 inches of rain between 2001 and 2002. Another near Cannonball Mesa recorded 4.2 inches of rain for the same time period. Compared to National Weather Service records collected in Yellow Jacket Canyon between 1952 and the present, the area has received only about 36% of annual average precipitation.

- Roy Smith,
BLM State
Water Rights/
Instream Flow
Coordinator



Yellowjacket Creek is one of the few perennial streams that flow through the Monument.



Assessing Riparian Health

In addition to documenting where water originates, BLM is gathering data on water that flows through the Monument.

Pressure monitors have been installed to record water levels and flow rates, and thermostats are being used to record water temperatures. The data will be collected until at least 2005.

Computer modeling will be used to identify flow rates that are needed to provide adequate fisheries habitat. Meanwhile, hydrologists are conducting surveys of fish species and populations in the creeks that drain Yellowjacket and Cross Canyons.

The condition of streams and related wetlands is assessed. Efforts to date have focused on streams where livestock permits are up for renewal.

A wetland is considered in *Proper Functioning Condition* when vegetation, landforms, and woody debris dissipate the stream's energy at high water, reducing erosion and improving water quality.

Large woody debris in the channel is important to filter sediment, capture bed load, and aid in floodplain development.

These healthy conditions improve flood water retention and ground water recharge, and help trees develop roots to stabilize banks against cutting action. The associated riparian areas also support water fowl breeding.

- Shauna Jensen, BLM/USFS Hydrologist



Pools and channels provide water depth, duration, and temperature necessary for fish, such as this indigenous flannelmouth sucker. The associated riparian areas support waterfowl breeding.

MANAGING MULTIPLE USES



The Mockingbird Mesa area of the Monument is important for production of carbon dioxide gas.

Monument Rich in Many Ways

Development of oil and gas has been taking place for several decades on the BLM land now within the Monument's boundaries.

In fact, when Canyons of the Ancients was established, 85 percent of the area was already leased for oil-and-gas development, and about a hundred existing wells were already in place.

Billions of cubic feet of carbon dioxide and natural gas are produced annually in the Monument, along with hundreds of thousands of barrels of oil. New leasing is allowed only to promote conservation of oil-and-gas resources in a common reservoir produced under existing leases, or to protect against drainage.

In addition to oil-and-gas development, there are an active building-stone quarry and two inactive mining claims. A county sand-and-gravel operation is next to Canyons of the Ancients, but not within its boundaries. The Monument Proclamation prohibits new gravel operations and mining claims.

The National Historic Preservation Act requires that BLM consider impacts of surface-disturbing activities on cultural resources. An archaeologist must assess the site, recommend ways to reduce impacts, and submit a report to the State Historic Preservation Office.

If the State concurs, a project is approved. If cultural sites cannot be avoided, mitigation is required. If mitigation is inadequate, excavation and curation are required.

- Ann Bond

Drought Affects Grazing

Because of the ongoing drought, most livestock grazing allotments in the National Monument will be rested for the rest of the 2003 grazing season.

BLM range management specialists are meeting with permittees to draw up agreements for voluntary compliance. Precipitation over the last three years has been far below normal. Last spring, most permittees in the Monument reduced their numbers of livestock voluntarily.

Drought conditions worsened over summer, and even with summer and fall rest, forage conditions still remain poor, and more rest is necessary. During periods of extended drought, perennial plants must use energy produced by their above-ground growth to maintain viable root systems.

"Overall, whether allotments were grazed or not, there's been little or no growth of perennial grasses and shrubs this season," said Michael Jensen, Dolores Public Lands Range Management Specialist. "Even if we get above-normal moisture, grazing must be reduced to restore depleted root reserves and improve plant vigor."

Twenty-one area ranchers hold grazing permits on 28 grazing allotments, covering about 95 percent of the Monument. Although 9,476 animals are under permit, *actual use* has been less than *permitted use* in recent years. As BLM permittees, ranchers must abide by grazing regulations and follow the terms and conditions of their specific grazing permit.

BLM monitors the vegetation on allotments, requires permittees to submit use records, and conducts land health evaluations. This helps determine if livestock numbers and grazing seasons are appropriate.

If monitoring indicates problems, BLM may adjust the grazing season, livestock numbers, or allotment boundaries, or cancel or not renew a permit.

- Mark Tucker, Range Management Program Leader



BLM range conservationists monitor the poor forage conditions in the Sandstone Canyon area this summer.



BLM employees responsible for managing your National Monument can be reached at the following offices and phone numbers:

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Suzan Craig, Education
Marilynn Eastin, Staff Assistant
LouAnn Jacobson, Manager
Steve Kandell, Planning
Marissa Karchut, Visitor Services
Laura Kochanski, Archaeologist
Deb Jensen, Collections
Keith McGrath, Law Enforcement Officer
Tracy Murphy, Collections
Susan Thomas, Curator
Michael Williams, Exhibits

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Michael Jensen, Range Management
Shauna Jensen, Hydrologist

DOLORES (cont'd)

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Leslie Stewart, Ecologist
Ken Reed, Forester
Richard Ryan, Recreation Technician
Penny Wu, Recreation Planner

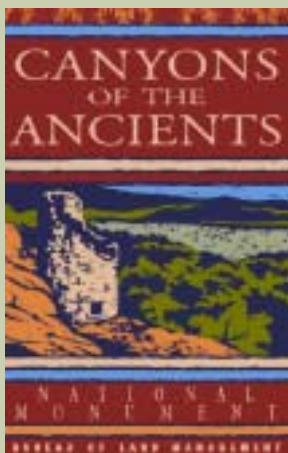
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Kelly Shanahan, Hydrologist
Mark Tucker, Range Management
Loren Wickstrom, Geologist

FOR MORE INFORMATION

We are in the process of updating the National Monument's mailing list, an important tool in the continuing effort to maintain communication with the public. Adding your name to the mailing list will help you stay informed about the ongoing resource management planning effort, and you'll be notified of the availability of environmental compliance documents. If you would like your name added to the mailing list, we ask that you fill out a short questionnaire, available by calling the below phone number or emailing us at the address below. Thank you for your interest!



Visit or write us:

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Contact us via email:

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Visit our Web sites:

www.co.blm.gov/canm/index.html
www.co.blm.gov/ahc/hmepge.htm