

National Park Service
U.S. Department of the Interior



Valles Caldera National Preserve

New Mexico



Photo by Don J. Usner

An Update Report on the NPS 1979 New Area Study

December 15, 2009



Photo by Valles Caldera Trust

Executive Summary

Background

The Valles Caldera National Preserve is an 88,900 acre unit of the national forest system located in the Jemez Mountains of north central New Mexico. The Preserve was established under Public Law 106-248, the Valles Caldera Preservation Act of 2000. The Preserve is managed by the Valles Caldera Trust, a wholly owned government corporation also established under the Act. The Trust is charged with mixing elements of both private and public administration while working to achieve the resource protection, public enjoyment, and financial self sufficiency goals of the Act. The Trust's authority is scheduled to expire by 2020, unless extended by Congress.

As the Valles Caldera Trust nears a decade of operation, U.S. Senators Jeff Bingaman and Tom Udall of New Mexico have indicated their intention to consider potential future

management options for the site. This report, initiated at the request of the senators, assesses Valles Caldera National Preserve's potential for inclusion into the national park system from the perspective of feasibility.

Potential new units of the national park system must 1) possess nationally significant resources, 2) be a suitable addition to the system, 3) be a feasible unit to manage, and 4) require direct NPS management or administration instead of alternative protection by other agencies or the private sector. Valles Caldera has been the subject of site investigations and new area studies completed in 1939, 1964, 1977, and 1979 by the National Park Service. Each study describes the Valles Caldera worthy of consideration as a new unit of the national park system.

The scope of this report is limited. Its focus is on the third criterion, the feasibility of the unit for inclusion in the national park system. The methodology for preparing this report was based on updating the existing conditions and resource evaluations presented in the latest study of the Valles Caldera prepared by NPS in 1979, and analyzing feasibility in light of changes in conditions since then. The report also addresses the criteria of national significance and suitability, applying new information that shapes our understanding of how the site meets these two criteria. It does not address the fourth criterion, the need for NPS management. The report's findings are summarized below:

Today, even though a number of changes have occurred on this landscape, including the level of resource understanding, current land management practices, and ownership, the resources of Valles Caldera still retain their eligibility for consideration as a new unit of the national park system based on the following findings:

National Significance

The national significance of the geological resources of the Valles Caldera was formally recognized in 1975 when the area was designated a National Natural Landmark. The resources of the Valles Caldera also meet the National Park Service's established standards of national significance for new national parklands for the following reasons:

- 1) The Valles Caldera is considered one of the world's best intact examples of a resurgent caldera.
- 2) The Valles Caldera possesses exceptional value in illustrating and interpreting the phenomenon of large volcanic eruptions, their deposits, and caldera resurgence.
- 3) The Valles Caldera's unique setting, consisting of a series of expansive grassland valleys and montane forests, provides outstanding scenic value and an array of superlative opportunities for public recreation, reflection, education, and scientific study.

- 4) The geologic features of Valles Caldera retain a high degree of integrity as a true, accurate, and relatively unspoiled resource.

Suitability

Valles Caldera would expand and enhance the diversity of volcanic sites already represented by other parks in the system. Moreover, Valles Caldera offers the opportunity to illustrate the connection of human history in the region that is showcased at Bandelier National Monument with the geologic history of the Valles Caldera that helped shape the surrounding mesa and canyon landscape.

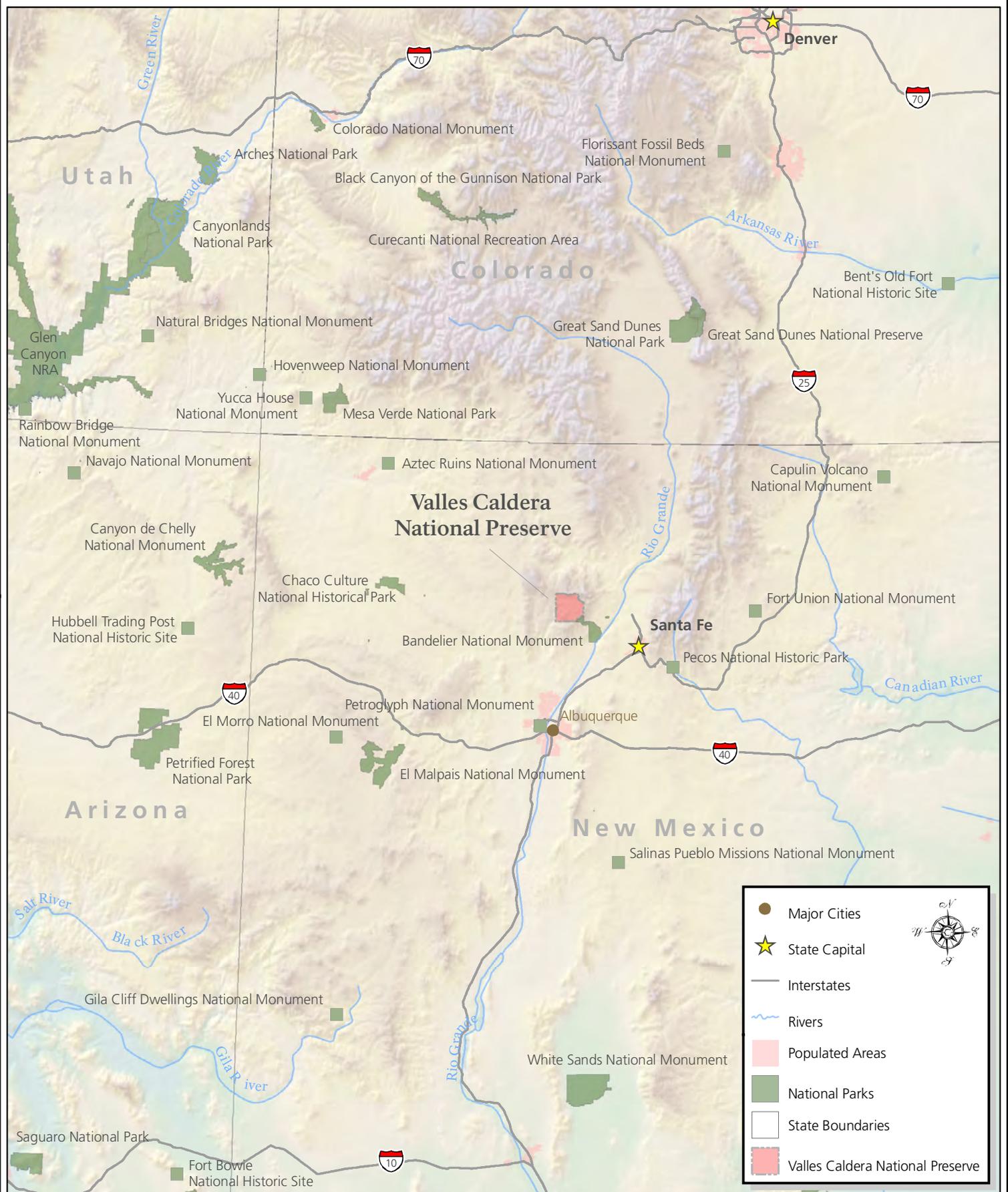
Feasibility

The 88,900 acre Valles Caldera National Preserve, contained within an approximately 13-mile wide caldera rim in north central New Mexico, is of sufficient size and appropriate configuration to facilitate long-term, sustainable resource protection and visitor enjoyment. It is now in public ownership. A majority of the land surrounding the Preserve is under management by the U.S. Forest Service; management of adjacent lands is expected to remain compatible with park values. Visitor use has been introduced, and the Preserve offers untapped potential for public enjoyment.

Over the past seven years, the Valles Caldera Trust has inventoried and established baseline resource conditions and initiated proactive measures to improve range, forest, and watershed conditions impacted by centuries of land use. These resource stewardship efforts have enhanced the feasibility of NPS management.

Conclusion

The findings of this update report indicate that the feasibility of the Valles Caldera for inclusion in the national park system has been enhanced since 1979. The national significance and suitability of the site for inclusion in the system is confirmed.

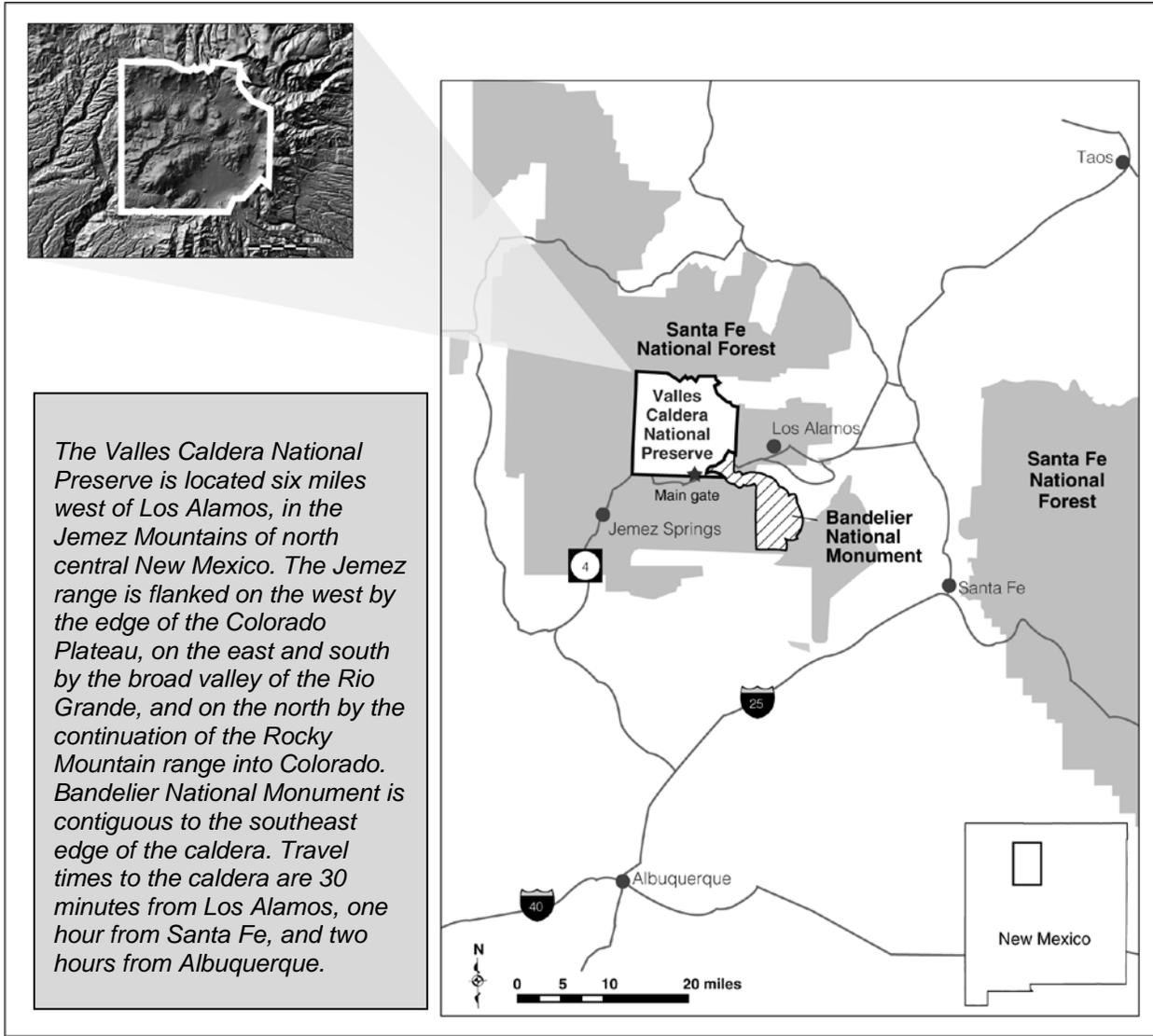


	Major Cities
	State Capital
	Interstates
	Rivers
	Populated Areas
	National Parks
	State Boundaries
	Valles Caldera National Preserve



Projection:
NAD 1983 UTM Zone 13N
File: \MIMRO09_17\MXD\VallesCaldera_Region.mxd

Data Sources: New Mexico RGIS
ESRI Streetmap
ESRI Shaded Relief



Sources: Valles Caldera Trust (main map and satellite photo); Map Resources (New Mexico).

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Introduction

Criteria for New National Parklands

Today there are nearly 400 units in the national park system. These units are variously designated as national parks, monuments, preserves, lakeshores, seashores, wild and scenic rivers, trails, historic sites, military parks, battlefields, historical parks, recreation areas, memorials, and parkways. Regardless of the many names and official designations of the park units that make up the national park system, all represent some nationally significant aspect of our natural or cultural heritage. They are the physical remnants of our past—great scenic and natural places that continue to evolve, repositories of outstanding recreational opportunities, classrooms of our heritage, and the legacy we leave to future generations—and they warrant the highest standard of protection.

Congress declared in the National Park System General Authorities Act of 1970 that areas comprising the national park system are cumulative expressions of a single national heritage. Potential additions to the national park system should therefore contribute in their own special way to a system that fully represents the broad spectrum of natural and cultural resources that characterize our nation. A potential addition to a system already containing the likes of Yellowstone, Gettysburg, Mesa Verde, or the White House, is assessed against rigorous criteria to determine whether that addition is of a character and caliber to support a "national" park system designation.

The analytical process used by the National Park Service is grounded in four requirements:

1. a potential new unit must contain *nationally significant* resources;
2. those resources are *suitable* for inclusion in the national park system because those resources are not otherwise adequately represented and/or opportunities for public enjoyment are not presently achieved;
3. NPS management is *feasible*, an analysis that focuses on practical considerations such as land ownership and configuration and the costs of managing it;
4. NPS *management* offers opportunities for protection and public enjoyment that are not matched by management in the private sector or by other government entities.

Prior Studies of Valles Caldera

Valles Caldera has been the subject of several studies that assess its inclusion in the national park system. In 1899, the area around Valles Caldera was proposed for study as a site for national park designation, and the resulting report proposed that 153,620 acres be set aside for "Pajarito National Park". The name came from the central feature in the study area, Pajarito Canyon. A portion of this area later became Bandelier National Monument, which was established in 1906.

A "Report on Proposed Jemez Crater National Park, New Mexico" was prepared in 1939. The proposal was for the establishment of a new national monument around the Jemez Crater (now known as the Valles Caldera), based on the finding that the area contained the largest known extinct volcanic crater in the world at the time. The proposed monument designation area contained about one million acres and included the greater part of the Jemez Mountains.

A 1964 area investigation report, entitled "A Proposed Valle Grande-Bandelier National Park, New Mexico", addressed factors relating to the suitability and feasibility of establishing a national park through

the consolidation of the existing monument with 30,745 acres of private land. The private land was within an area known as Baca Location No. 1.

The 1977 “*Proposed Pajarito-Valles Caldera National Park, New Mexico: New Area Study*”, was prepared as an addendum to the 1964 report. The addendum noted that NPS personnel had conducted the earlier reconnaissance and evaluation of the Valles Caldera. It concurred with the evaluation but revised the study area boundary to encompass a larger block of land held in single ownership, Baca Location No. 1. This was seen as necessary to adequately interpret the geological story and to provide permanent protection for the area’s natural and cultural resources.

The 1979 new area study, “*Study of Alternatives, New Area - Valles Caldera, New Mexico*” explored the application of a single management concept for Baca Location No. 1. The case for national significance and suitability, based on significant natural features and multiple recreational opportunities that could attract both regional and national visitation, was strongly made. The study found that the area met the criteria for inclusion in the national park system, including need for NPS management, and put forward five options for management. Alternatives included an alternative for administration by the National Park Service and an alternative for U.S. Forest Service Administration. The legislative action that was ultimately adopted in 2000 established the Valles Caldera National Preserve as a unit of the national forest system with the current management framework under the Valles Caldera Trust.

Scope of this Report

The scope of this report is limited. Its focus is on the third criterion, the feasibility of the unit for inclusion in the national park system. The methodology for preparing this report was based on updating the existing conditions and resource evaluations presented in the latest study of the Valles Caldera prepared by NPS in 1979, and analyzing feasibility in light of changes in conditions since then. The report also addresses the criteria of national significance and suitability, applying new information that shapes our understanding of how the site meets these two criteria. It does not address the fourth criterion, the need for NPS management.



Don J. Usner

Valle Grande

Existing Conditions (Valles Caldera Today)

Regional Setting

The Valles Caldera National Preserve is an 88,900 acre unit of the national forest system located in the Jemez Mountains of north central New Mexico. The Jemez Mountains, typical of the southern Rocky Mountains, contain clear mountain streams, alpine meadows, and deep canyons. The Jemez range is flanked on the west by the edge of the Colorado Plateau, on the east and south by the broad valley of the Rio Grande, and on the north by the continuation of the Rocky Mountain range into Colorado. Bandelier National Monument is contiguous to the southeast edge of the caldera. The caldera is sited mainly in Sandoval County, with small portions of the north rim lying within Rio Arriba County. Los Alamos County is directly adjacent to the east boundary of the Preserve.

The Preserve is mostly surrounded by Santa Fe National Forest lands. Santa Clara Indian Reservation, Pajarito Ski area, and Bandelier National Monument adjoin portions of the Preserve's eastern boundary.

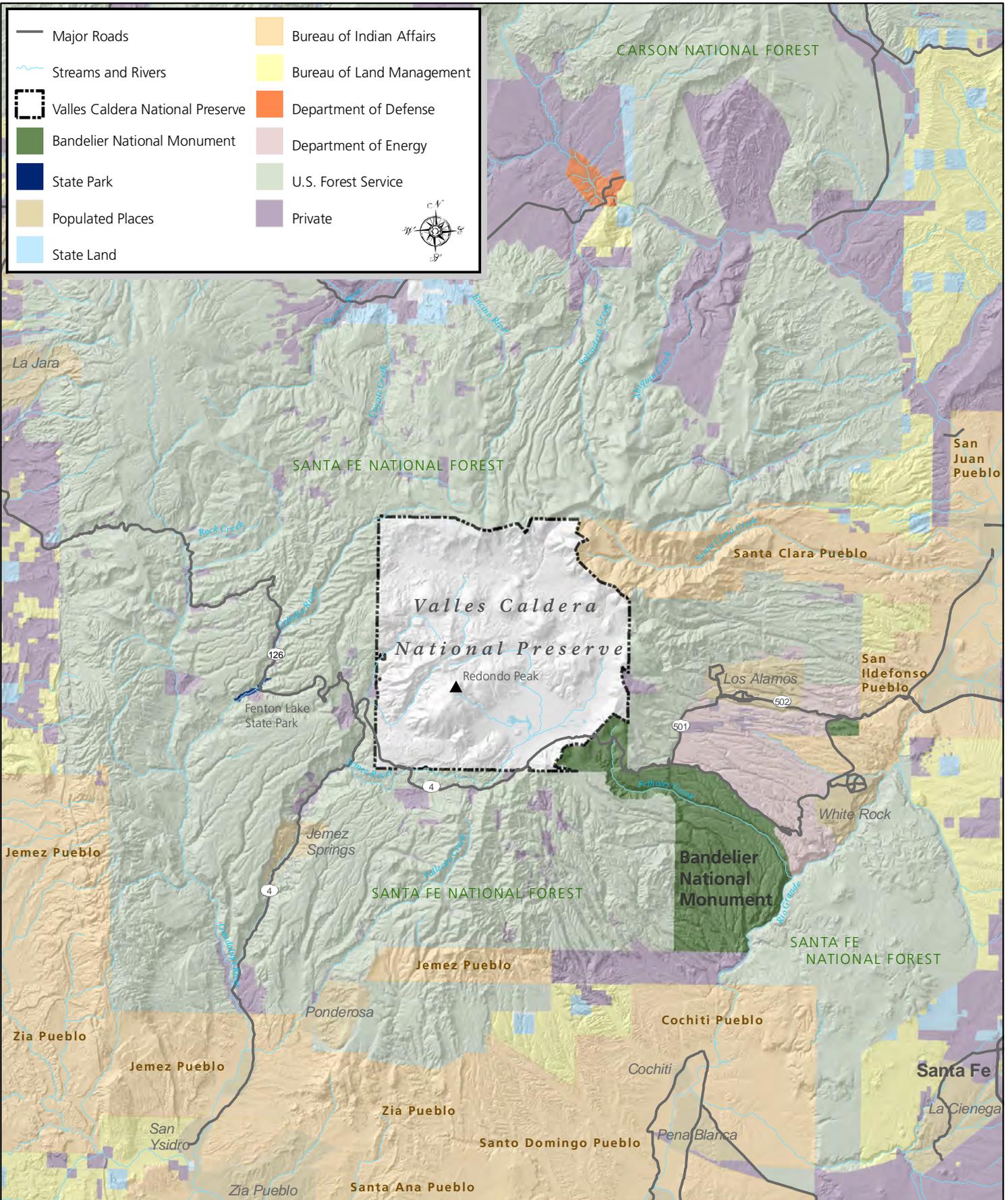
All-season vehicular access to the Preserve is provided by New Mexico State Highway 4 (NM 4), where the main entrance to the Preserve is located. The two-lane paved highway was designated part of the Jemez Mountain Trail National Scenic Byway in 1998 and skirts the southern boundary of the Preserve. The small village of Jemez Springs (population 327), also located along NM 4 is located approximately 20 miles southwest of the Preserve's main entrance. Surface travel to the caldera requires navigating a series of mesas and valleys, and travel times by motor vehicle are 30 minutes from Los Alamos (population 12,000), one hour from Santa Fe (population 62,000) and two hours from Albuquerque (population 522,000).

Establishment of the Preserve and Current Management Structure

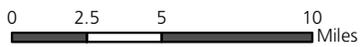
The Preserve was established under Public Law 106-248, the Valles Caldera Preservation Act of 2000. The Preserve is managed by the Valles Caldera Trust, a wholly owned government corporation established under the Act. Management of the Preserve by the Trust began in 2002 when President Bill Clinton appointed the nine-member governing Board of Trustees. The management framework is considered an experiment in public land management. The Trust is charged with mixing elements of both private and public administration while working to achieve the goals of the act, including reaching financial self sufficiency through managed uses of the Preserve.

The purposes for which the Preserve was established include protecting and preserving the scientific, scenic, geologic, watershed, fish, wildlife, historic, cultural and recreational values of the Preserve and providing for multiple use and sustained yield of its renewable resources. Specific required management programs outlined in the Act provide for:

- (1) operation of the Preserve as a working ranch, consistent with (2) through (4) below;
- (2) the protection and preservation of the scientific, scenic, geologic, watershed, fish, wildlife, historic, cultural and recreational values of the Preserve;
- (3) multiple use and sustained yield of renewable resources within the Preserve;
- (4) public use of and access to the Preserve for recreation;
- (5) renewable resource utilization;
- (6) optimize the generation of income based on existing market conditions, to the extent that it does not unreasonably diminish the long-term scenic and natural values of the area, or the multiple use and sustained yield capability of the land.



Projection:
NAD 1983 UTM Zone 13N
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Data Sources: New Mexico RGIS
ESRI Streetmap
National Elevation Dataset
Bureau of Land Management

The Trust is also charged with the goal of achieving a financially self-sustaining operation—that is, operating without federal funds—by the end of 2015. The Trust’s management authority will terminate in 2020, unless extended by Congress.

According to the Preserve’s 2008 Annual Report to Congress, the Preserve staff consists of 12 permanent full time employees. Six employees work less than full time or are employed for a limited term. In addition, the Trust employs an average of 30 temporary employees during the summer field season and 10 during the winter. The Preserve’s leased headquarters complex in Jemez Springs provides for visitor contact, staff office space, and staff housing (24 apartment units). The Preserve has recently leased a facility in Jemez Springs for science and education activities and conference use.

The Valles Caldera Trust has been funded by annual appropriations from Congress since its establishment. In FY2008, the Trust received a \$3.6 million appropriation from Congress to cover operational expenditures for fiscal year 2008. Also during this time, the Trust collected \$0.7 million in program revenues, primarily generated through the collection of recreational fees. Sustainable use of renewable resources has generated very little revenue. The grazing program generated less than 10% of total revenue collected in 2008. Timber resources are likely to generate revenues, but not for several years because of the effects of pre-acquisition timber harvesting activities.

The work of the trust is supported by the Los Amigos de Valles Caldera, a 501(c)3 non-profit corporation, which has been a productive and beneficial friends group for the Trust. The organization supports educational, interpretive, conservation, research, planning, and improvement projects and programs for the benefit of the Preserve. It also assists the Trust in stimulating public interest through publication, purchase, and sale of printed material, visual aids and other material. Members have developed programs to support volunteer activities, facilitate financial contributions and provide pro bono services. The organization serves as the fiscal agent for existing and proposed projects undertaken by the Trust or others.

The Government Accountability Office completed a report in October 2009, *VALLES CALDERA, The Trust Has Made Progress but Faces Significant Challenges to Achieve Goals of the Preservation Act*, that assesses the current management structure in the context of legislated goals for the Preserve. The contents of the GAO report are not included in this update report as the scope of this effort does not include evaluating other management alternatives.

Resource Conditions

The Valles Caldera Trust’s *State of the Preserve 2002-2007* (VCT 2007b) provides a comprehensive overview of Preserve resources and their current conditions. This report, the Trust’s *2008 Report to Congress*, along with correspondence and conversations with Dr. Jeffrey Cross, former Executive Director for the Preserve (2006-2008), Gary Bratcher, current Executive Director, Dr. Robert Parmenter, Preserve Scientist, Dr. Anastasia Steffen, Preserve Archeologist and Cultural Resource Coordinator, and Dennis Trujillo, Preserve Manager, have provided the basis for the following summary observations.

Natural Resources

The high elevation and topographic features of the Valles Caldera (rim elevation ~11,000 feet, resurgent dome Redondo Peak ~11,250, and caldera floor ~8,500 feet) influence precipitation patterns and temperatures on the Preserve. Average precipitation of 35 inches per year is almost twice that of Los Alamos, with temperatures, depending on elevation, 25-50 degrees cooler as well. Nearly 75 miles of perennial streams originate and flow through the Preserve. Forest soils tend to be rocky with loamy textures, while grassland soils are deep with rich organic material and fine textures. The Preserve is 65%

forested and 30% is in grasslands; shrubs, water and bare ground, including rock outcrops, account for the rest. The plant associations range from high elevation, sub-alpine spruce-fir forests, mixed conifer to open foothill Ponderosa pine woodlands ringing high montane grasslands down to valley floor wetlands. Inventories conducted between 2001-2006 identified 69 species of mammals, 102 birds, six reptiles, three amphibians, six fish, 525 plants, 28 lichens, 11 algae and five slime molds. Inventories for insects are still ongoing. (VCT 2007b)

While the fundamental geological features of the Valles Caldera are well preserved, its spectacular scenic setting belies the fact that this is not a pristine or untrammelled landscape. At the time of federal acquisition, the resources that overlaid this geologic landform reflected a number of extensive, although reversible impacts from sheep/cattle grazing and timber harvesting. Other pre-acquisition activities included exploration/drilling for geothermal resources; construction of a natural gas pipeline corridor, logging roads, ranch roads, ranch structures, and movie sets; and quarrying for sulphur, pumice, gravel, and obsidian, all of which have resulted in additional, although limited resource impacts.

By 2009, the Trust had inventoried and assessed or was assessing most of the Preserve's natural resources, such as its flora, fauna, watershed and stream conditions, ground water quality, geology and soils. This series of quantitative analyses of the ecological conditions of watersheds and forests found that the condition of the Preserve departed significantly from what was described in the Valles Caldera Preservation Act of 2000 as a "...preserved mix of healthy range and timberland..." (VCT 2007b)

The Trust has taken actions to improve the Preserve's grassland and watershed conditions. Preserve scientists have established a baseline capacity for grazing limited to a four month period that is adjusted annually depending on range condition, projected climatology, and estimated elk herd size. The Preserve is using scientific data of forage quantity and distribution with the objective of protecting perennial stream riparian areas while providing sufficient forage for the livestock programs, wildlife, and maintenance of ecosystem services. The current level of grazing by the Trust (541 animal units in 2009) is substantially less than the high levels of grazing that occurred in the 1950's through the 1970's (7,000 to 12,000 animal units per year).

Over 58% of the forests were logged prior to 1992. The composition and function of Preserve ecosystems have been impacted; the forest structure departs significantly from sustainable natural conditions and is now dominated by dense stands of small diameter trees. Unlike the ecological condition of grasslands and riparian communities, forest conditions will not improve if left alone. Forest restoration to reduce fire hazards, improve wildlife habitat, and watershed health will require a significant investment (thinning, prescribed burns, wildland fire use, etc) to return them to a healthy condition. (VCT 2007b) The Trust is currently pursuing limited forest restoration efforts through controlled burns and forest thinning as funding allows. Some America Recovery and Reinvestment Act funding is available for work on the western boundary east into Redondo Canyon and along Rabbit Mountain during the spring of 2010.

A number of high elevation forests found on a series of eruptive domes within the caldera still retain over 800 miles of crudely blazed spiral logging roads created to harvest timber. Many of the road scars are now visually obscured by the regeneration of vegetation on the slopes between road corridors, although erosion can still be a problem during heavy rainfall events. An extensive roadway network can also be found throughout the valley floors. The Preserve has upgraded 16 of the 184 miles of road that have been designated for public and administrative access. This effort has enhanced natural drainage and returned natural flows to approximately 3,000 acres of wetlands.

Wildlife species and abundance in the Jemez Mountains have undergone substantial changes in the 20th century. Grizzly bears, wolves and elk were extirpated from New Mexico in the early 1900s. Elk were subsequently reintroduced to the Jemez Mountains after World War II. The elk population is currently at

a historic, and possibly prehistoric, high level due to controlled hunting and lack of natural predators. (VCT 2007b) The resident elk herd has grown in size since the 1979 New Area study reported an estimated herd size of 2,000 elk within the Preserve. Recent estimates by the state project 6,000 elk reside in the Jemez Mountains with an assumption that half are found within the Preserve until snow conditions force their migration to winter range.

Cultural Resources

According to the Valles Calera Trust cultural resource fact sheet (VCT 2008b), historic and prehistoric resources are ubiquitous on the Preserve. These cultural resources relate to use during the Paleo-Indian period ca. 9500 – 5500 B.C., the Archaic period from 5500 B.C. – 400 A.D., the Ancestral Pueblo period 400 A.D. to 1600 A.D., through historic uses after 1600 A.D., including livestock grazing, logging, limited agriculture, and harvest of mineral and plant resources. Prehistoric artifacts are dominated by obsidian tool making, and the most common archaeological sites include lithic scatters and subsurface deposits, and sites with defined features such as rock shelters, terrace walls and field houses. Features associated with the historic period include aspen carvings, isolated cabins, corrals, and sawmill remnants.

At the time of federal acquisition in 2000, very little was known about the cultural resources on the Preserve. Prior to acquisition, 2,585 acres (2.9 %) had been surveyed. From 2001 to 2008, 7,500 acres (8.4%) of the Preserve have been surveyed to current standards. Today, approximately 11 percent of the Preserve has been inventoried. Because inventories have been conducted mostly as part of the planning and compliance process for specific projects and programs, these surveys primarily represent areas of current intensive use (e.g., Cerro La Jara, the Headquarters area, and Redondo Meadows), in-use roads, and large-project areas (e.g., forest thinning in Banco Bonito, and the Valle Toledo prescribed burn). (VCT 2008b)

Areas with a high probability for the presence of undocumented prehistoric and historic sites include the saddles between volcanic domes and along the forested edges of valleys. In addition, locations of cultural significance to Native American communities (called traditional cultural properties, or TCPs) occur throughout the Preserve, and are common on the tops of high mountains and domes, atop ridges, or along the rim of the caldera. Planning for public access trails and facilities (e.g. trailheads, parking, toilets) includes a cultural resource inventory so that potential impacts to archaeological sites and TCPs can be considered. (VCT 2008b)

To date, 485 historic and archaeological sites have been documented. “Fieldhouses” are present in abundance, but only on Banco Bonito. These simple one- to two-room masonry structures were probably associated with maize agriculture possible only at the lower elevations in the southwest corner of the Preserve. In contrast to the surrounding areas, there are no pueblos (i.e., large multi-room settlements, such as at Bandelier National Monument) in the caldera. However, Puebloan people certainly used the caldera and its abundant resources. (VCT 2008b)

Fieldhouse	25%
Rockshelter	2%
Obsidian quarry	8%
Obsidian lithic scatter	60%
Artifact scatter w/pottery	2%
Historic sites	3%

The caldera is renowned for its large obsidian quarries, where prehistoric “knappers” selected high-quality volcanic glass for tool-making. Dr. Steffen has traced obsidian quarried on the Preserve as far away as eastern Nebraska, northern North Dakota, southern California, southern Texas, northern Nuevo Leon (Mexico), and eastern Mississippi. The most commonly documented sites in the Preserve are the large and small obsidian tool-making areas (called “lithic scatters”). These surface concentrations of

obsidian artifacts represent a range of prehistoric activities and past living areas including tool-making stations, small camps, and large villages. The artifacts visible on the surface signal buried cultural deposits that were built up incrementally over hundreds or even thousands of years of human use. These prehistoric deposits can be very large (e.g. several acres) and are found in all areas of the Preserve. (VCT 2008b)

In 2007, a condition assessment of structures found on the Preserve, completed by SWCA Environmental Consultants, established recommendations for preservation, taking into consideration significance, integrity, and level of deterioration. Seven structures are eligible for listing on the National Register of Historic Places, and nomination of the Ranch Headquarters area as an historic district is being pursued by the Trust. The highest preservation priority includes repair of foundations (including repair or consolidation of sill and wall logs, removal of sediment accumulation, and installation of additional foundation support), correcting drainage problems including installation of French drains, repair or replacement of gutters, and rodent removal and control.

Current Uses of the Preserve

In addition to use as a working ranch, the Preserve provides for public enjoyment opportunities and scientific study. It also provides for tribal access and use, commercial use, and personal use.

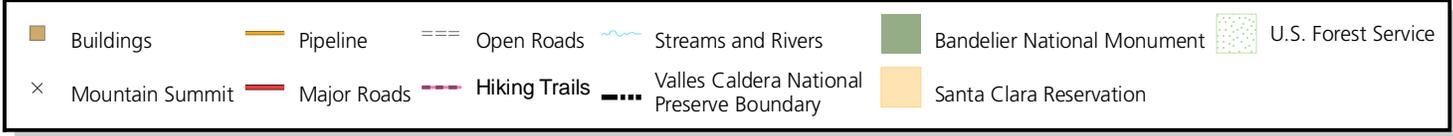
Working Ranch

As mandated by legislation, the area continues to be managed as a working ranch. The high altitude of the Caldera provides for quality summer pasture limited to seasonal use due to the extreme cold temperatures and heavy snowfall during winter. This year, the Preserve awarded a grazing contract to New Mexico State University and the Jemez Pueblo that focuses on three programs. The *range conservation program* allows cow/calf pairs from Jemez Pueblo and Sandoval County ranches to forage on the Preserve allowing area ranchers to rest their range and perform restoration projects during the summer months. New Mexico State University is coordinating a *bull genetics improvement program* to identify livestock that can thrive in an all-natural grazing environment at high altitude. The results are expected to produce brisket disease resistant cattle for other ranchers with high altitude range. The *heifer replacement program* includes young cows bred with genetically-selected bulls to produce “easy” first-calf deliveries of low birth weight calves.

The number of cattle grazed by the Trust is determined each year based on the condition of the forage after accounting for consumption by elk and ecosystem services. The grazing period has been shortened from six months to four and cattle have been limited or excluded from sensitive resource areas. All three programs are conducted on upland fenced pastures away from sensitive stream habitats.

Recreational Use

Prior to the establishment of the National Preserve, access was limited to those who owned the ranch, those who worked on the ranch, families, friends and invited guests. Recreational use of the property was minimal and public enjoyment of the property possible by invitation only. The Preserve is now open seven days a week from late May to late October, and on weekends and holidays in the winter months. Since federal acquisition, public access has increased from a few hundred visitors per year to over 17,000 in 2008. Almost 10% are winter visitors. It is important to note that these numbers reflect counts on participation in fee based programs and special events. It does not include the number of visitors enjoying the scenic pullouts or the two free access trails found along NM 4.



Projection:
NAD 1983 UTM Zone 13N
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Data Sources: New Mexico RGIS
ESRI Streetmap
National Elevation Dataset
Valles Caldera National Preserve

The Preserve currently provides mostly fee based scheduled day-use programs and structured access for the general public including environmental education/cultural history interpretive van tours, wildlife watching, photography workshops, fishing clinics, as well as recreational pursuits such as mountain biking, hiking, marathons, cross country skiing, snowshoeing, sleigh/wagon rides, equestrian trail riding, fishing, and elk/turkey hunting opportunities. Many of the tours are led by local area experts. Events are scheduled throughout the year, with capacity limits requiring visitors to make reservations in advance or to enter by lottery.

Most of these activities require the public to park their cars at the staging area near the entrance, and then be shuttled by van to various locations on the Preserve where the programs are scheduled. This approach has minimized the need for development on the Preserve but discourages spontaneous visits, especially for non-local visitors unaware of the need to plan ahead. Many of the scheduled activities occur only once a week making it inconvenient for many. The limited the level of public access is reflected in the recorded visitation rates, which are low for such an area of this size and significance. Preserve staff have started to test self-guided access for selected recreational activities.

Travelers on NM 4 can take advantage of scenic pullout parking areas overlooking Valle Grande. There are also two trailhead parking areas with year-round trail access for limited hiking opportunities along the rim. There are no fees collected for use of these areas.

The Trust's interim public access, recreation and education programs are supported largely by existing ranch infrastructure and have limited visitor use capacity. The Preserve has recently initiated a comprehensive public access and use planning effort to determine its long range vision for providing visitor activities, services, and facilities. Depending on the outcome of this planning effort and the legislative requirement to seek financial self-sufficiency, there could be major changes in the level of unstructured access, development and visitor use opportunities provided on the Preserve.

Educational Use

A number of K-12 schools as well as colleges and universities bring students and teachers to the Preserve to engage in on-site learning. In FY 2008, 29 groups totaling 600 individuals participated. The trust has hosted science camps for middle and high school students; other educational groups visit the Preserve on science field trips. (VCT 2008a)

Scientific Study

Research is a major activity on the Preserve, as it is well used as an outdoor laboratory. There were 32 research projects underway during 2008 addressing topics such as climate change impacts on watershed hydrology, the spread of wildlife diseases, fire ecology, elk-predator interactions, carbon sequestration, biodiversity, and elk-livestock grazing. Over \$1.6 million in education and research projects on the Preserve were funded and conducted by outside agencies and organization in 2008. Just recently, the National Science Foundation awarded a five-year, \$4 million grant to the University of Arizona to create a Critical Zone Observatory on the Preserve (with a sister site in the Santa Catalina Mountains outside of Tucson). The project will address questions concerning the role of climate dynamics on the interactions of water, soils, and ecosystem production in two different mountain-and-basin areas in the desert southwest. This effort is expected to contribute significantly to the Preserve's knowledge of ecosystem processes as well as enhancing future educational activities for school students and the general public.

Tribal Access and Use

The Valles Caldera Preservation Act specifically authorizes use of the Preserve by Native Americans for religious and cultural purposes. Pueblos and Indian tribes that have a cultural affiliation to the Preserve are allowed access for the use, collection, gathering and transport of plants, minerals, wildlife and other resources, and the restoration, repatriation, preservation and protection of sites for ceremonial activities. A Pueblo or Tribal Governor, or the executive branch of a Pueblo or Indian Tribe, makes a request for access and use to the Preserve Manager. Under federal management, the Preserve is restoring to these communities access that was restricted under private ownership. (VCT 2007b)

The Valles Caldera Preservation Act also recognized the significance of Redondo Peak to Native Americans and restricts development above an elevation of 10,000 feet. Members of the Jemez Pueblo request access and visit the peak several times each year. (VCT 2007b)

Commercial Use

There have been a number of movies filmed on the Baca Ranch over the years and this use has continued under Preserve management. Movie sets consisting mostly of western store fronts and ranch structures have been left standing in a number of locations. It is anticipated that the demand for film productions will continue as the spectacular scenic setting of Preserve becomes even more difficult to match over time. Demand for commercial photography and advertising shoots is also expected to continue.

In 1949, the Atomic Energy Commission built a 12-inch high pressure natural gas pipeline from Cuba to Los Alamos. The buried pipeline runs 13.6 miles through the northern valleys of the Preserve. The Public Service Company of New Mexico (PNM) purchased the line prior to federal acquisition of the Preserve. They have sole responsibility for its use and maintenance.

Other Uses

Approximately 40 acres of land in the Sulphur Springs area continue to be held under private ownership and represents the only inholding within the boundaries of the National Preserve. A residential structure and trailers exist on-site.

Some individuals within the surrounding communities have deep personal ties with the Preserve. The Trust accommodates requests to visit the Preserve or to conduct personal life events, including weddings and family reunions.

Visitor and Operational Support Facilities

Few permanent facilities have been constructed or rehabilitated to support recreation programs, although temporary structures (without utilities) have been provided at the Preserve's staging area to accommodate visitor contact, fee collection, gift sales, office space, and port-o-potties.

The majority of the 38 structures on the Preserve were present at the time of federal acquisition. Twenty-two structures are located on the northwest side of Valle Grande in the area known as the historic ranch headquarters; four structures are located in the Valle Grande. Some of the structures have been in continuous use for 100 years, while others were placed into use in the last 5 years. Their average age is about 60 years and the overall condition is fair to good. Only one facility meets accessibility guidelines. Structures are used to support resource programs and public use by providing work and meeting space, storage and repair areas, visitor information, operational bases, utility support, employee housing and rental facilities. A facility assessment study conducted in 2007 estimated the annual operational and

maintenance costs for these facilities at just over \$120,000 while total deferred maintenance costs exceed \$1.2 million (VCT 2007b)

The historic ranch headquarters district has some capacity for accommodating visitor use or administrative functions. The U.S. Forest Service constructed a water treatment facility and replaced the water distribution system to serve the ranch headquarters district. Potable water is available in all buildings in the district, although the source often freezes in winter, and occasionally runs dry in the summer.

Almost 131 miles of unpaved road has been designated open for public access throughout the Preserve. The Trust has upgraded over 16 miles to all-weather gravel road standards including installing culverts and regraded sections through wetland areas to minimize the impoundment of waterflow, reduce impacts on surrounding wetlands, and to reduce road maintenance. The remaining public access roads require a high clearance vehicle. An additional 53 miles of roadway provide for administrative access.

There are 35 miles of trails designated on the Preserve. Two of these include trailhead parking areas along NM 4, that provide free access along the Valle Grande trail (2 miles) and a portion of the southeast caldera rim (Coyote Call trail - 3.5 miles). Five additional designated trails provide access for a fee to Cerros del Abrigo (7 miles), Cerro Seco (7 miles), La Garita (6 miles), Cerro La Jara (1.5 miles), and South Mountain (8 miles). Of the fee access trails, only Cerro La Jara and South Mountain trails provide for public parking.

The Preserve's leased 12,000 square foot headquarters complex in Jemez Springs provides for visitor contact, staff office space, and staff housing (24 apartment units). This off-site facility eliminates the need to construct administrative facilities and employee housing on the Preserve and is more easily accessible during the winter season.

The Preserve recently signed a long term lease for a 15,000 square foot science, education, and conference facility in Jemez Springs. The facility provides space for a science laboratory, classrooms, lodging (49 beds), and industrial kitchen facilities. The Trust is preparing the facilities so that they will be available for public use by January 2010.



Ranch Commissary Building, Photo by Valles Caldera Trust

National Significance Assessment

National Significance Standards

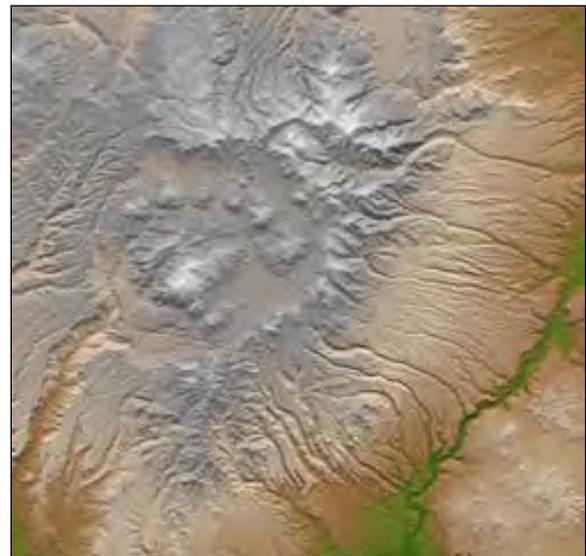
As a threshold matter, a potential new addition must be *nationally significant*. An area will be considered nationally significant if it meets the following criteria:

- 1) **Resource Quality** - represent an outstanding example of a particular resource type.
- 2) **Interpretive Value** - possess exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage.
- 3) **Potential for Use** - offer superlative opportunities for recreation, public use and enjoyment, or scientific study.
- 4) **Integrity** - retain a high degree of integrity as a true, accurate, and relatively unspoiled example of the resource.

National Significance Analysis

Valles Caldera National Preserve encompasses the source of two of the largest and best documented Pleistocene-age eruptions in North America. A pair of eruptions dated at 1.7 and 1.2 million years ago ejected at least 600 cubic kilometers (140 cubic miles) of tephra, primarily the Bandelier Tuff ignimbrite, and culminated in collapses that formed a pair of nested, nearly contiguous calderas more than 20 km in diameter. The eruptions were the culminating events of voluminous volcanism from the Jemez volcanic field that began more than 13 million years ago, and comprise nearly 1/3 of the volcanic material produced during the volcanic field's long eruptive history. (McClelland)

The Bandelier Tuff eruptions dwarf any in recorded human history. Initial airfall tephra from the earlier eruption reached 8 meters in thickness near the caldera, and the succeeding multiple ash flow deposits are nearly 60 to more than 800 meters thick within the caldera and up to 180 meters thick outside it, radiating outward more than 25 kilometers. Deposits from the later eruption were of similar thickness, up to 3.5 meters of initial airfall tephra overlain by 15 to more than 270 meters of ignimbrite outside the caldera and 400-1,100 meters within the caldera rim. Comparable eruptions today would have catastrophic impacts to life and property over a significant region, would have significant effects on the nation's economy, and would substantially cool global climate for several years. (McClelland)



Valles Caldera, photo by NASA

Post-collapse activity within the caldera, including major uplift, explosive eruptions and the extrusion of lava domes along a system of ring fractures continued until about 50,000 years ago. Seminal work by Robert Smith, Roy Bailey, and others documented the caldera's eruptive history in detail and introduced the concept of caldera resurgence to characterize the post-collapse activity. Because of their work, Valles Caldera is viewed as the type example of a resurgent caldera. (McClelland) Fraser Goff characterizes the

Valles Caldera (caldera of valleys) as perhaps the world's best intact example of a resurgent caldera, a giant circular collapsed volcano with an uplifted central floor. Consequently, Valles Caldera is a site where volcanologists the world over come to study large eruptions and their deposits.

Today, a series of expansive, gently sloping grassland valleys cover over one-third of the caldera floor while the remaining two-thirds consists of montane forest lining the caldera rim and capping a series of eruptive domes aligned around the main resurgent dome of Redondo Peak. Nearly 75 miles of perennial streams originate in the Preserve forests, the headwaters of two tributaries of the Jemez River that meander through its grassland valleys making this place one of the most diverse and scenic areas of the Southern Rocky Mountain region.

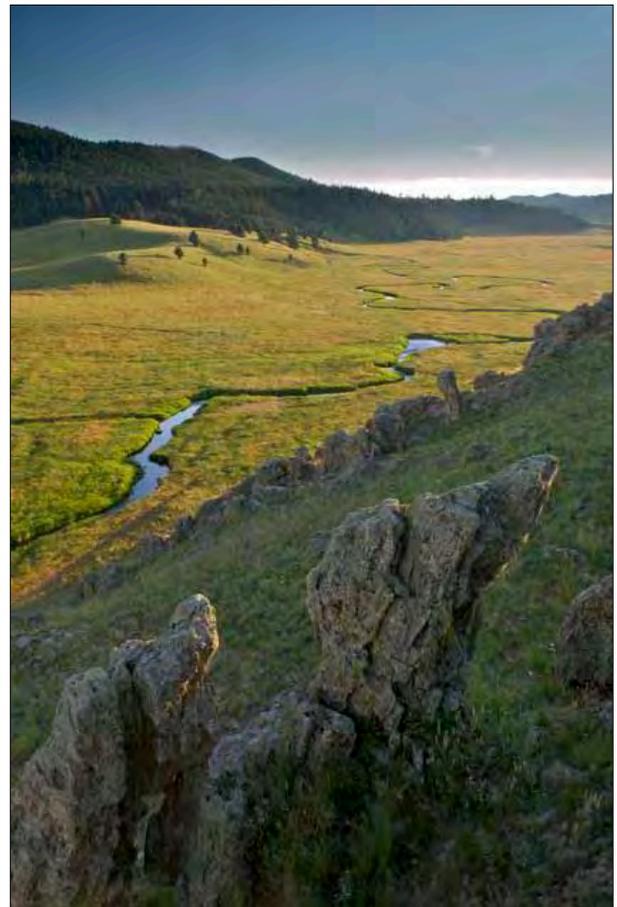
Southeast of the Preserve is Bandelier National Monument, where Ancestral Puebloans lived and built homes carved from and into the Bandelier Tuff until about the time Spanish explorers first visited the region in the mid-16th century. (McClelland)

National Significance Findings

The national significance of the geological resources of the Valles Caldera was formally recognized in 1975 when the area was designated a National Natural Landmark. The resources of the Valles Caldera also meet the National Park Service's established standards of national significance for new national parklands.

Valles Caldera is nationally significant because:

- It is an outstanding example of a particular type of resource, namely, Valles Caldera is considered one of the world's best intact examples of a resurgent caldera.
- It possesses exceptional value or quality in illustrating and or interpreting the large volcanic eruptions, their deposits and caldera resurgence.
- The unique setting of expansive grasslands and montane forests of Valles Caldera provide outstanding scenic value and an array of superlative opportunities for public recreation, reflection, education, and scientific study.
- The geologic features of Valles Caldera retain a high degree of integrity as true, accurate, and relatively unspoiled resource.



*Valles Caldera's signature scenic grasslands offer exceptional opportunities for public enjoyment and scientific study.
Photo by Michael Mudd*

Suitability Assessment

National Park Service Suitability Standards

An area that is nationally significant must also meet standards for suitability to qualify as a potential addition to the national park system. To be determined suitable, the Valles Caldera National Preserve must represent a natural or cultural theme or type of recreational resource that is (1) not already adequately represented in the national park system or (2) is not comparably represented and protected for public enjoyment by another agency.

Adequacy of representation is determined on a case-by-case basis by comparing the potential addition to other comparably managed areas representing the same resource type, while considering differences or similarities in the character, quality, quantity, or combination of resource values. The comparative analysis also addresses rarity of the resources, interpretive and educational potential, and similar resources already protected within the national park system or in other public or private ownership. The comparison results in a determination of whether the proposed new area would expand, enhance, or duplicate resource protection or visitor use opportunities found in other comparably managed areas.

Valles Caldera Resources in Context

Although several other large young calderas are the centerpieces of national park system units, only Yellowstone was the source of larger eruptions than Valles Caldera. Three enormous eruptions from Yellowstone ejected about 2,500 km³, 280 km³, and 1000 km³ of tephra 2.1, 1.3, and 0.64 million years ago, respectively, generating 3 large nested calderas, the most recent of which includes a dimensions of 45x85 km. (McClelland) A portion of Yellowstone's caldera floor includes Hayden Valley, an expansive and lush grassland valley set against a forested caldera rim, which is very similar to the spectacular scenic valleys (valles) of the Preserve.

The eruption of Mt. Mazama, Oregon, about 7,700 years ago ejected about 150 km³ of magma, collapsing to form the 8x10 km Crater Lake caldera. (McClelland) The caldera floor is submerged under Crater Lake, similar to some of the earlier post eruptive lake stages that have occurred within Valles Caldera.

In Alaska, Aniakchak's 10 km wide caldera formed about 3,650 years ago following the eruption of more than 50 km³ of material. The 1912 eruption of Novarupta ejected about 28 km³ of tephra, mostly as pyroclastic flows that formed the dramatic Valley of Ten Thousand Smokes, inspiring the designation of Katmai National Park and Preserve. Drainage of the magma reservoir toward Novarupta from beneath Katmai, 10 km to the east, drove the collapse of a 3x4 km caldera at Katmai. (McClelland)

Kilauea, in Hawaii Volcanoes National Park, with a summit caldera several kilometers in diameter, has been erupting since 1983, primarily from vents along its east rift zone. (McClelland)

Other significant calderas protected for public enjoyment outside of the national park system include:

Long Valley Caldera, California, occupies land managed by the Inyo National Forest and private owners. The eruption that formed the 17x32 km caldera 0.7 million years ago ejected about 500 km³. Like the largest Yellowstone eruptions, Long Valley's Bishop Tuff was deposited over much of what is now the western and central United States. (McClelland)

La Garita Caldera is a large volcanic caldera (35x75 km) located 140 miles north of Valles Caldera in the San Juan Mountains of southwestern Colorado. The extent of the caldera is not readily recognizable. It is

one of a number of calderas that formed during a massive ignimbrite flare-up in Colorado, Utah and Nevada from 40–25 million years ago, and was the site of truly enormous eruptions about 28–26 million years ago. The resulting deposit, known as the Fish Canyon Tuff, has a volume of approximately 5,000 km³. (Ort) The area was originally designated Wheeler National Monument in 1908 by President Theodore Roosevelt, making it Colorado's first national monument. The designation was taken away in 1950 when it was considered too remote and was transferred back to the U.S. Forest Service from the National Park Service. The area was renamed Wheeler Geologic Area and is now part of the La Garita Wilderness administered by the Rio Grande National Forest.

Suitability Findings

The resources of the Valles Caldera National Preserve meet the National Park Service's established suitability criteria for consideration as a new unit of the national park system because:

- Valles Caldera would expand and enhance the diversity of volcanic sites already represented by other parks in the system, and
- Valles Caldera offers the opportunity to illustrate the connection of human history in the region that is showcased at Bandelier National Monument with the geologic history of the Valles Caldera that helped shape the surrounding mesa and canyon landscape.



Valles Caldera offers the opportunity to connect the geologic and human histories of the region

Feasibility Assessment

National Park Service Feasibility Standards

To be feasible to manage as a new unit of the national park system, an area must (1) be of **sufficient size and appropriate configuration** to ensure sustainable resource protection and visitor enjoyment and (2) have the **potential for efficient administration by the NPS at a reasonable cost**. The 1979 New Area Study found the Baca Location No. 1 property containing the Valles Caldera feasible to manage as a new unit of the national park system. However, a number of conditions have changed over the past 30 years, such that an updated feasibility evaluation is merited.

Feasibility Analysis

In evaluating feasibility, a variety of factors are considered, such as:

- size and boundary configurations;
- existing degradation of the resource
- current and potential threats to the resource;
- access;
- current and potential uses of the study area and surrounding lands;
- public enjoyment potential;
- costs associated with acquisition, development, restoration, and operation (including staffing);
- level of local and general public support;
- economic/socioeconomic impacts of designation as a unit of the national park system;
- the ability of the National Park Service to undertake new management responsibilities in light of current and projected availability of funding and personnel.

The most significant change in the study area since 1979 was the acquisition of the site by the federal government and establishment of the Valles Caldera Preserve under the Act. Most of the former Baca Location No. 1 property is now a national preserve, a unit of the national forest system, and managed by the Valles Caldera Trust for resource protection and visitor use.

Size and Boundary Configurations

To accommodate watershed protection of adjacent lands, two minor changes to the boundary configuration of the Baca Location No. 1 property described in the 1979 report took place as part of the Act's authorization to federally acquire 94,761 acres. The Act provided the transfer of administrative jurisdiction to the National Park Service (Bandelier National Monument) of those lands comprising the headwaters of Frijoles Creek along the southeast corner of the property, approximately 815 acres. Another 5,046 acres in the northeast corner of the property were sold to the Pueblo of Santa Clara, to be held in trust by the Secretary of the Interior to protect the headwaters of the Santa Clara Creek. Even with the boundary changes, a major portion of the upper Jemez River watershed remains within the Preserve, a significant benefit for management of these watershed resources.

The current size of the Preserve is approximately 88,900 acres and is of sufficient size and configuration to ensure long-term, sustainable resource protection and visitor enjoyment.

Existing Degradation of Resources

While the fundamental geological features of the Valles Caldera are well preserved, its spectacular scenic setting belies the fact that this is not a pristine or untrammelled landscape. At the time of federal

acquisition, the resources that overlaid this geologic landform reflected a number of extensive, although reversible impacts from sheep/cattle grazing and timber harvesting. Other pre-acquisition activities included exploration/drilling for geothermal resources; planning for establishing an electrical transmission corridor; construction of a natural gas pipeline corridor, logging roads, ranch roads, ranch structures, and movie sets; and quarrying for sulphur, pumice, gravel, and obsidian, all of which have resulted in additional, although limited resource impacts.

Compared to pre-acquisition periods with extreme levels of grazing and logging, the Preserve is in excellent condition. However, assuming that the baseline for comparison is the reference condition (the composition of vegetation and disturbance attributes that can sustain native ecological systems and reduce future hazards to native biodiversity as described by Hann et al. 2005), 90% of the Preserve departs moderately from this baseline. (VCT 2007b)

The Trust has been actively pursuing improvements of the Preserve's grasslands and watershed conditions by proactively managing the cattle grazing program. Preserve scientists have established livestock program limits that balance this use with the needs of the existing elk herd, the capability of the range, and ecosystem services. Forest restoration needs, however, will require a more long term investment and effort. Current estimates by Preserve staff indicate that 30,000 acres are currently in need of forest thinning at a cost of \$750 to \$1,250 per acre based on prior forest thinning contract work. Also, over 800 miles of old logging roads need to be restored as well.

It appears that the level of resource degradation found within the Valles Caldera National Preserve could be reversed to reclaim and restore baseline conditions with adequate funding and appropriate resource management efforts.

Current and Potential Threats to the Resources

Since federal acquisition, many of the threats outlined in the 1979 NPS report no longer exist. Geothermal leasing and the planned electrical transmission corridor route have been abandoned as all the mineral rights have been federally acquired. The threat of selling and subdividing the lands to others for development purposes is no longer a concern. However, the Preserve's legislated requirement to seek financial self sufficiency by 2015 has generated a number of revenue enhancement proposals that call for large scale resort developments on the Preserve. In part, the Trust is evaluating development at this scale because revenue from productive use of the land- largely ranching and forestry- has been found to be limited. The amount of grazing has been limited in order to meet goals of resource protection and the forests must regenerate before timber can be harvested at appreciable levels to produce a revenue stream.

Other threats to natural resources will require proactive and ongoing resource management efforts:

Elk activities such as grazing, browsing, and trampling all have measurable impacts on Preserve resources. (VCT 2007b) During severe winters, these impacts also affect surrounding down slope winter range areas including Bandelier National Monument. It is the opinion of Dr. Jeffrey Cross and others that, because of the lack of predators, the elk herd will need continued management by hunting. The legislative requirement to maintain the area as a working cattle ranch also results in impacts on rangelands from grazing and trampling.

The history of fire suppression, grazing, and logging in the Jemez Mountains has created a forest structure more vulnerable to fire, outbreaks of insects and disease, and climatic events such as drought. (VCT 2007b) Forest restoration to reduce fire hazards, improve wildlife habitat, and watershed health will require a significant investment (thinning, prescribed burns, wildland fire use, etc) to return them to a healthy condition. (VCT 2007b)

The effects of climate change may continue to favor lower elevation plant and animal species, potentially resulting in shifts of dominant trees and grasses on the Preserve. Invasive plant and animal pest species may take advantage of the changing ecosystem conditions and expand their distribution and abundances. Climatic trends are also likely to affect the use of fire as well as the frequency and intensity of wildfires in the region. (VCT 2007b)

Lacking a comprehensive archeological survey of the Preserve, it is difficult to evaluate the potential effects of enhanced public access and visitor facility development. With any expansion of public access, there will always be a threat of unauthorized removal of historic and prehistoric artifacts.

The lack of funding to complete basic stabilization efforts for the Preserve's National Register eligible structures continues to threaten historic fabric from damage, decay, or irretrievable loss. The estimated cost of deferred maintenance for these structures is over \$300,000.

Access and Circulation

All-season vehicular access to the Preserve is provided by New Mexico State Highway 4 (NM 4), where the main entrance to the Preserve is located. This is the only highway providing access to the site. The two-lane paved highway is cleared in winter by state maintenance crews. There are some steep sections with inadequate sight distances and sharp curves where the roadway crosses the south rim of the caldera, and snow tires or chains are necessary at times in winter. To enhance safety and public viewing of the Preserve, the Trust installed kiosks and scenic turnouts. Two trailheads along NM 4 provide free trail access for limited hiking opportunities along the rim.

Within the preserve, there are 35 miles of designated trails providing visitor access to portions of the north and south caldera rim, a number of interior domes, and Valle Grande. There is also an extensive road system that provides circulation throughout much of the area. However, the use of roadways is constrained due to the unpaved, rudimentary condition of most segments. The main entrance road (approximately 2 miles) between NM 4 and the staging area was recently upgraded. The preserve has designated 131 miles of roads for public access, and an additional 53 miles of roadway for administrative access. About 16 miles of the public access roads have been upgraded to all weather gravel road standards, but the remaining public access roads require a high clearance vehicle. Private vehicles are usually only allowed into the staging area within Valle Grande due to road conditions, visitor safety, and resource protection concerns. Beyond this point, visitors must have reservations to attend guided programs scheduled throughout the week. Only the fishing and hunting programs allow private vehicles on the Preserve, unless a special event is scheduled. Mountain biking on the Preserve is scheduled as a special event.

The circulation system provides for limited visitor use of a portion of the preserve. The road system provides accessibility for reaching most areas of the site for management purposes. However, conditions limit access by visitors.

Current and Potential Uses of the Study Area (including Public Enjoyment) and Surrounding Lands

The current uses of the study area are described under the existing conditions sections presented earlier in this report. In a study commissioned by the Trust, *A Plan for Revenue Enhancement of the Valles Caldera National Preserve: Opportunities and Alternatives* prepared by the Entrix, Inc., a number of revenue enhancement opportunities were developed and analyzed to explore how the Trust might achieve the legislative objective of reaching financial self-sufficiency by 2015. Two scenarios were developed that called for expansion of existing programs and construction of a number of facilities on the Preserve. Both options included upgrading the road system and construction of a visitor center, education and research

center, headquarters, campground, wildlife tent camps, and public parking areas. One of the alternatives also included the construction of a 100-unit lodge with restaurant service and a 20-unit luxury hunting lodge. (VCT 2009a) The Preserve has recently initiated a comprehensive public access and use planning effort to determine its long range vision for providing visitor activities, services, and facilities. Depending on the outcome of this planning effort and the legislative requirement to seek financial self-sufficiency, there could be major changes in the level of unstructured access, development and visitor use opportunities provided on the Preserve.

No major changes in the uses of the lands adjacent to the preserve are expected, due to the amount of land in public ownership. The Preserve is mostly surrounded by Santa Fe National Forest lands. National forest management is based on a “multiple use” approach, which emphasizes timber harvesting, grazing, and use of other resources. Existing uses of adjacent forest lands include recreation, grazing, timber harvest, and geothermal development. The forest also provides for wildlife habitat and watershed protection. It is expected that these uses would continue.

Other lands adjacent to the Preserve include Santa Clara Indian Reservation, Pajarito Ski area, and Bandelier National Monument, which adjoin portions of the Preserve’s east boundary. Santa Clara Indian Reservation lands are managed for a variety of purposes, including recreation, firewood gathering, livestock grazing, timber management for insect and disease control, and herb gathering. These uses primarily serve the residents of the reservation and it is expected that these uses would continue. The Pajarito Ski Area is situated on the east slope of the caldera rim and includes 750 acres that are privately owned by the Los Alamos Ski Club. The facility is open to the public and provides 40 trails and 5 lifts on 300 skiable acres. During the summer, an extensive trail network provides cross country and lift-served mountain biking and hiking. It is expected that these recreation uses would continue. Bandelier National Monument, a unit of the national park system, is managed by the National Park Service. The park contains almost 33,000 acres of mesas, sheer-walled canyons, and several thousand ancestral Pueblo dwellings. The park is managed for the protection and preservation of the cultural and natural resources while providing for the enjoyment, education and understanding of those resources for present and future generations.

Costs Associated with Acquisition, Development and Management

Land Acquisition

With the federal purchase of the Baca Ranch in 2000 for \$97 million, future costs associated with land acquisition are minimal, as only 40 acres (5 parcels) in the Sulphur Springs area remain under private ownership. This property contains some very acidic soil and surface water conditions, fumaroles, and excavated ponds created by previous sulphur mining activities. There are also some residential structures, shacks, trailers, abandoned equipment, piping, and debris. It still appears desirable to acquire these lands, although the appraised value of this property is not known at this time. The U.S. Forest Service and Trust for Public land have initiated discussions on the purchase of the property. The USFS has conducted hazmat studies that indicate some site remediation will be needed. It may require some additional

investigations to confirm the full extent and cost of the clean-up effort. An existing geothermal wellhead will require capping.



Sulphur Springs Area

Potential Development and Management Costs

The potential management and facility development costs would depend upon the long-term vision for managing the Preserve. Should the Valles Caldera be added to the national park system, this would be developed through a general management planning effort. The plan would be based on enabling legislation, resource preservation needs, and opportunities for visitor enjoyment developed through a public involvement process.

The presence of nearby Bandelier National Monument introduces the potential for some involvement of this existing unit in interim or long term management of the Preserve. The unit's administrative structure could be employed to take on some of the initial "start-up" responsibilities should Valles Caldera become part of the national park system. Or, a single administrative structure eliminating the need to create a stand-alone management unit for the Preserve could be considered.

Maintaining expanded public access and services may require an on-site maintenance staging area accommodating office, shop, garage, and storage space. It is anticipated that any on-site facility would be a seasonal operation, with core staff relocated to Bandelier or Jemez Springs during the winter months.

Staffing Needs

The long-term staffing needs for Valles Caldera would be driven in part by a general management plan. Current staffing at the Trust provides a comparative measure, however. There are 12 permanent full time employees, six employees working less than full time or are employed for a limited term, and temporary employees averaging 30 in the summer and 10 in the winter. This is roughly equivalent to 35 full-time employees (FTE). The staffing at two parks with comparable land bases, Great Sand Dunes National Park and Preserve, and Guadalupe Mountains National Park, ranges from 30 to 36 FTEs.

Total Costs

Total development costs are difficult to quantify without establishing a long-term vision for NPS management of the Preserve. However, management of the Preserve and Bandelier National Monument under a single management structure would reduce supervisory and administrative overhead.

The two comparable parks, Great Sand Dunes National Park and Preserve, and Guadalupe Mountains National Park, received \$2.23 million and \$2.7 million, respectively, in base funding in fiscal year 2008. Great Sand Dunes National Park accommodated 273,900 recreational visitors in 2008. Guadalupe Mountains National Park hosted 197,767 recreational visitors during that same year. Each park has unique needs and circumstances, so comparisons of this sort are not an entirely reliable indicator of funding or staffing needs for a potential new park.

The Valles Caldera Trust received a \$3.6 million appropriation from Congress, which was supplemented by \$59,400 from the Trust's interest bearing account to cover operational expenditures for fiscal year 2008. Also during this time, the Trust collected \$0.7 million in program revenues. (VCT 2008a)

Level of Public Interest and Support for NPS Designation

The methodology used to understand views of the community and key stakeholders towards the site – and its current and future management—included monitoring postings on websites, articles and letters to the editor published in area newspapers, and conversations with a few key stakeholders. Additional insight was gained by observing two public meetings of the Trust in September.

The content of web postings and local newspaper articles indicate that there is significant public interest and support for transferring management of the Valles Caldera National Preserve to the National Park

Service. The local group Caldera-Action, other organizations, and area residents have sent letters to the editors of local newspapers encouraging the New Mexico Senate delegation to craft legislation for designating the Preserve as a new unit of the national park system. The major concern expressed in the media is that the legislative mandate for the Trust to reach financial self-sufficiency may result in levels of development not appropriate for such a special place. Other key concerns include the lack of public access opportunities, the cost of public recreation programs, and the emphasis on cattle ranching within the Preserve.

Some web postings by sportsmen and others are encouraging Congress to consider revising the long-term management strategy for Valles Caldera and transferring it to a professional federal land management agency, without specifically identifying NPS as the agency.

On September 14 and 15, 2009, Preserve staff and consultants conducted public scoping meetings in Albuquerque and Santa Fe, New Mexico to discuss access and development options on the Valles Caldera National Preserve. A total of approximately 25-30 members of the public attended both workshops. During the Albuquerque discussions, a number of participants expressed a preference to transfer management of the Preserve to the National Park Service. During the Santa Fe meetings, there were mixed expressions of support, as some participants thought the Preserve model, with some modifications to the financially self-sufficiency mandate, provided a unique opportunity for exploring new ways of managing public lands.

The Valles Caldera Trust does not support transferring management of the Preserve to the National Park Service. Their preference would be to modify the Act's requirement for the Trust to achieve financial self-sufficiency by 2015, given the lack of marketable timber, reduced level of grazing permitted, and levels of future development needed to make up the shortfall in revenues. They believe significant progress has been made in establishing public programs and access to the Preserve and they continue to work towards improvements in all areas of public enjoyment and resource stewardship. As has been noted above, a public use and access study is well underway to determine what aspects of the needed improvements can be undertaken, with balancing the public's desires for access with the protection of the environment. The trust's perspective is that the foundation for success is taking shape and they would welcome the opportunity to fully test this experiment in federal land management.

Economic and Socioeconomic Impact of NPS Unit Designation

The Valles Caldera National Preserve is located primarily in Sandoval County, which is experiencing a higher growth rate than what was projected in the 1979 New Area Study (177% vs. 280%). The 1979 report projected a growth rate for the county from 22,576 in 1975 to 40,000 by 1990; the U.S. Census recorded a population of 63,319 in 1990 and 89,908 in 2000 for Sandoval County. Similar conditions are being experienced in the surrounding region. An increase in population is expected to, in turn, result in a higher demand for recreational opportunities in the area.

It is assumed that public access and recreational opportunities would be expanded under NPS management, leading to higher visitation, although expansion of visitor use will also likely occur under the current management framework. The socioeconomic impact of higher visitation would have the greatest effect on local communities within the Jemez Valley and Los Alamos with some impact on regional communities such as the surrounding Pueblos, Santa Fe and Albuquerque. The national information system and audience for sites within the national park system would likely contribute to visitation to the Preserve that is higher under NPS management than under the current structure. Overall, increases in regional and national public use of the area are anticipated to result in increased retail sales for recreation and convenience goods locally, as well as an increased volume of recreational, tourist, and other services. Increased expenditures for expanded operation and maintenance activities will generate

purchases of goods and services in the local economy. Increased circulation of money in nearby communities could effectively stimulate growth in the area, benefitting the socioeconomic environment.

Small scale tour operators in the surrounding area could benefit more under NPS management, due to a more open access policy typical of NPS sites. Under the Trust's management, cost recovery through fee based recreational activities is likely to continue, precluding this competing business opportunity for area operators.

Negative consequences could result from increased traffic along NM 4, the only highway access to the Preserve. Higher levels of traffic could lead to traffic congestion and exacerbate existing conditions that affect road safety, especially within the village of Jemez Springs.

Ability of NPS to Undertake New Management Responsibilities

The need for new management offices and associated infrastructure for the Preserve would be reduced or even eliminated if management of the Valles Caldera is accomplished largely out of facilities already present at Bandelier National Monument. A single management entity for Valles Caldera and Bandelier would enhance communication and integration of management programs that require a regional approach such as fire management, law enforcement, and emergency response, and would facilitate comprehensive management of resource issues that affect both the Preserve and Bandelier National Monument.

Feasibility of NPS management is likely to be enhanced by the support that could be provided by a friends group such as the Los Amigos de Valles Caldera, the non-profit corporation that has served the Trust effectively.

Feasibility Findings

The 88,900 acre Valles Caldera National Preserve, contained within an approximately 13-mile wide caldera rim in north central New Mexico, is feasible for NPS management because:

- The **size and boundary configuration** of Valles Caldera is sufficiently large and configured appropriately for long-term, sustainable resource protection and visitor enjoyment. Only 40 acres of privately owned lands are found within the federal boundary.
- **Resources of the Preserve**, while compromised by certain historical activities such as grazing and logging, have improved under Trust management and pose no barrier to NPS management. Since federal acquisition, many of the threats outlined in the 1979 NPS report no longer exist. Geothermal leasing and the planned electrical transmission corridor route have been abandoned as all the mineral rights have been federally acquired. The threat of selling and subdividing the lands to others for development purposes is no longer a concern.

There have been proactive improvements in conditions of natural resources. The trust continues to build an information base on the site's natural and cultural resources through scientific investigations and resource inventories. This information has enhanced the understanding of what is in the preserve and provides a framework for planning and management.

- **Current uses within the Preserve** are generally compatible with those in other preserves or parks in the national park system, and there is untapped **potential for enhancing public enjoyment**. There is some uncertainty about the scale and character of future development that might occur as the Trust seeks to become self-sufficient. It is anticipated that uses would continue to be compatible but the scale of facility development may be greater. **Current and**

potential uses of surrounding lands are presently compatible with the Preserve and are expected to remain so.

- **Access and Circulation** on the Preserve currently facilitates recreational use; however there are limits to unguided visitation due to poor road conditions, visitor safety, and resource protection concerns. Fully meeting the site's recreational potential is dependent on visitor use planning and future projects that would build on the existing infrastructure.
- **Costs associated with NPS establishment** do not pose barriers to NPS management because major land acquisition has already been accomplished. Units of comparable size are managed by NPS at costs comparable to that allocated for Trust management of the Preserve.
- **Local and general public support** for NPS designation is positive, based on media reports. There is also some degree of public sentiment that supports the Trust's efforts to meet congressional mandates.
- **Economic/socioeconomic impacts** of designating the Preserve a unit of the national park system appear to be largely positive. This conclusion is based on the expected increase in recreational activity and visitation to the area stemming from the Preserve's inclusion within the national park system, and resulting expenditures by visitors in the local community. Increased visitation at the site under management by the Trust would have similar effects. However, it is thought that the potential visitation for the Preserve as a unit in the national park system would be higher than that under the current framework, due to access to a national audience under the NPS.

Conclusion

The NPS has conducted several studies that have found the Valles Caldera eligible for inclusion in the national park system, the most recent being the 1979 New Area Study. In considering eligibility, proposed additions to the National Park System must (1) possess *nationally significant* natural or cultural resources; (2) be a *suitable* addition to the system; (3) be a *feasible* addition to the system; and (4) require *direct NPS management*, instead of alternative protection by other public agencies or the private sector. The scope of this report is limited to the first three criteria, and the need for NPS management is not addressed.

The focus of the report is on the feasibility criterion. It updates the feasibility section of the 1979 study, presents information on changes in the study area since that time, and analyzes the feasibility factors in light of existing conditions. The key finding is that the feasibility for the preserve to be managed by the National Park Service has been enhanced by three principal changes in conditions: federal acquisition of the site; the introduction of visitor use and resource protection measures by the Valles Caldera Trust; and the enhancement of site understanding through natural and cultural resource inventories and scientific investigations sponsored by the Trust. The report also considers changes in circumstances relating to the suitability and national significance criteria. New information that confirms the earlier work and contributes to the understanding of how these two criteria are met is presented.

Consultations

A number of individuals, listed below, were consulted to help identify available informational sources and to assist in the effort to update the assessment of Valles Caldera National Preserve's potential for inclusion into the national park system. The effort was structured to re-examine the changes in resource understanding, conditions, and threats as well as public enjoyment potential and level of public support as they relate to assessing the criteria for new national parklands since completion of the new area study of the Valles Caldera by the National Park Service in 1979.

Updates on resource understanding, conditions, and threats were primarily provided by current and former staff and board members of Valles Caldera Trust. Updates on public enjoyment potential and level of public support were acquired by attending a meeting with members of Caldera-Action and by monitoring public discussions through area media reports, web postings, and public discussions during scoping meetings for public access planning for the Preserve hosted by Valles Caldera Trust during September 2009.

National Park Service

Jason Lott, Bandelier National Monument Superintendent and Valles Caldera Trust Board Member
Brad Traver, former Bandelier NM Superintendent and Valles Caldera Trust Board Member (2006-2008)
Dr. Jeffrey Cross, former Executive Director of Valles Caldera Trust (2006-2008)
Laura Rotegard, Grant-Kohrs Ranch National Historic Site Superintendent
Heather Germaine, National Natural Landmark Intermountain Regional Coordinator
Nancy Baker, Denver Service Center, Landscape Architect and 1979 New Area Study Participant
Carol Cook, Washington Office of Park Planning and Special Studies, Program Analyst
Lindsey McClelland, WASO Natural Resource Stewardship Strategy Geologist

National Forest Service

Daniel Jiron, Santa Fe National Forest Supervisor and Valles Caldera Trust Board Member

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Gary Bratcher, Executive Director
Dr. Robert Parmenter, Preserve Science Program Manager
Dr. Anastasia Steffen, Cultural Resources Program Manager
Dennis Trujillo, Preserve Manager
Dennis Rino, Administrative Officer
Rourke McDermott, Landscape Architect
John Swigart, GIS Coordinator
Terry McDermott, Communications and Marketing Manager

Caldera-Action

Tom Ribes, President
Monique Schoustra, Treasurer

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Valles Caldera National Preserve

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VallesCaldera

VallesCaldera website <http://vallescaldera.com/> This website hosts a wide range of information about the Preserve. The web master has been very proactive in collecting and linking other news articles and letters to the editors of area newspapers about the Preserve to this website.

This report was produced by:

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United States Senate
WASHINGTON, DC 20510

June 24, 2009

Daniel Wenk
Acting Director
National Park Service
1849 C Street, N.W.
Washington, DC 20240

Dear Mr. Wenk:

We are writing to request that the National Park Service undertake a reconnaissance study of the Valles Caldera National Preserve in New Mexico to assess its potential for inclusion in the National Park System as a national preserve.

The Valles Caldera was established in 2000 by Public Law 106-248. Although the Preserve is part of the National Forest System, it is managed by the Valles Caldera Trust, a government corporation. The Trust's authority to manage the Preserve terminates in 2020.

As we near the midway point of the Trust's authorization, we believe it would be useful to consider potential future management options to best provide for the protection of the Preserve's remarkable resources.

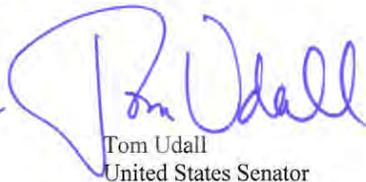
We are hopeful that a reconnaissance study could be completed within the next few months, to allow us to review potential management options later this year.

Thank you for your consideration of this request.

Sincerely,



Jeff Bingaman
United States Senator



Tom Udall
United States Senator