



Lava Beds



Stronghold



VOLUME 10

LAVA BEDS NATIONAL MONUMENT — NATIONAL PARK SERVICE
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Welcome to Lava Beds

On behalf of the National Park Service and the monument staff, I want to welcome you to Lava Beds National Monument. I hope that your visit will be memorable and meaningful. My staff is here to assist you in experiencing and learning about many of the natural features and cultural histories which makes Lava Beds such a special place.

The idea of a national park was an American invention of historic consequences. The world's first national park, Yellowstone, was created in 1872, at which time Congress set aside more than 1 million acres as "a public park or pleasuring ground for the benefit and enjoyment of the public". This designation and the concept of preserving natural and cultural treasures of national significance for future generations marked the beginning of an American national park movement, the establishment of the National Park Service in 1916, and the protection and recognition of resources throughout the United States and its territories.

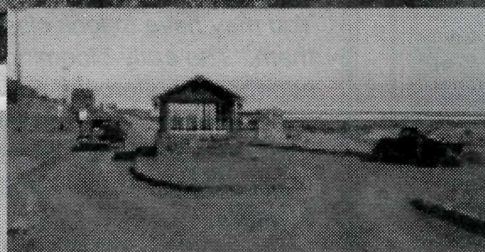
The American national park system now consists of 379 separate units under the management of the National Park Service. These units are variously designated as national parks, monuments, preserves, lakeshores, seashores, wild and scenic rivers, national trails, historic sites, military parks, battlefields, historical parks, recreation areas, memorials and parkways. Regardless of the many official designations, all represent some significant aspect of our natural or cultural heritage. They are the physical remnants of our past. They are great scenic and historic places that continue to evolve. They are the legacy that we leave to future generations.

Lava Beds is one such site. On November 21, 1925, President Calvin Coolidge signed Presidential Proclamation number 1755 establishing Lava Beds National Monument. The setting aside of Lava Beds was in recognition of the many unique geological features and the important cultural sites located within its boundaries.

Over 120,000 visitors a year travel to the monument from around the state, across the country and from around the world to discover this rugged lava landscape formed by the Medicine Lake Volcano about 500,000 years ago. Whether its exploring lava tube caves, hiking the trails, climbing a cinder cone, identifying a wild flower, studying the history of earlier peoples, or watching the sun set over the basin, we hope that your visit to Lava Beds will allow you to appreciate many of the resources this "land of burnt out fires" has to offer.

This monument, and the 378 other places of national importance that comprise the National Park Service, are being preserved for you and for future generations. I am happy that you have chosen to join us during our 75th anniversary year and I encourage you to "Experience Your America" by visiting many of the other special units of your National Park System.

Craig W. Dorman
Superintendent



*"Take only photographs,
leave only footprints,
make only memories".*



Fire in Lava Beds

National Monument: Restoring a Critical Ecological Process

During your travels through Lava Beds National Monument you may notice areas of the landscape that have been charred by fire. Some of these areas resulted from lightning-ignited blazes and others resulted from management-ignited *prescribed fire*.

Wildfire is one of the most powerful forces of nature and is often viewed in light of its destructive nature. However, within the last ten to twenty years scientific research has enlightened land managers as to the ecological importance of fire in wild ecosystems. One of the key roles of wildfire is to maintain the diversity and health of plant communities. This role results in positive benefits for a greater variety of wildlife.

Periodic wildfires in Lava Beds once burned away plant litter and undergrowth on a regular basis. As a result, most fires crept along the ground and were not hot enough to damage the environment. Wildfires also burned in a "mosaic" pattern, following fuel beds and natural barriers such as lava outcroppings. This pattern left behind patches of older vegetation for wildlife cover and opened up adjacent patches of ground for the sprouting of new vegetation. New sprouts are much more nutritious for wildlife and the patches of older vegetation provide adequate cover for wildlife to access the new forage safely. The burning of litter and undergrowth also recycles nutrients into the soil to support new growth.

From the 1920's to the late 1970's all fires in Lava Beds were actively suppressed. The traditional notion was that all wildfire was a

large trees killing them completely. The lack of periodic fire to burn away the under story has also inhibited the regeneration of ponderosa pines in Lava Beds. Ponderosa pine requires clear ground with minimal competition for nutrients and sunlight in order to reproduce.

Another example of fire's importance to plants in Lava Beds is bitterbrush, the primary deer forage in the monument. The old growth provides excellent wildlife cover, but it is poor quality for forage. Without periodic fire, clear patches of ground and nutrients are not made available for the generation of new sprouts.

"One of the key roles of wildland fire is to maintain diversity and health of plant communities".

The fire management program at Lava Beds is actively engaged in reintroducing the natural process of fire through two methods. The first is known as *wildland fire use* and the second is *prescribed fire*.



Three Sisters Trail 1999

This program is known as *wildland fire use for resource benefit* (formerly *prescribed natural fire*). However, it is difficult for nature to catch up to man's removal of fire from the landscape for such a long period of time. For this reason fire management personnel prescribe fire to treat unhealthy landscapes, just like a doctor prescribes medication to treat illnesses.

Under weather and fuel conditions that promote resource benefits, managers selectively ignite areas of the monument in an effort to reduce heavy fuel loads and to reintroduce fire to the ecosystem. Reduction of fuels helps managers to control wildfires, protect life and property and makes necessary fire suppression efforts safer to conduct. The boundaries around the monument and the developed areas, such as headquarters and the employee housing units, are primary targets for *prescribed fire*. This action reduces the potential for natural fires to burn uncontrolled into or out of the monument or into developed areas.

Visitors should also be aware that all human-caused fires are immediately suppressed because they do not represent natural processes and do not benefit from the planning involved in *wildfire use* or *prescribed fire*. **Please do not leave your campfire unattended and do not smoke on any of the trails.** During a fire event, you may encounter smoke and temporary trail closures. These inconveniences are only temporary and are necessary for the benefit of our wild land ecosystems.

If you have any questions or would like more information about the fire management program at Lava Beds, please visit the Fire Management Office in the headquarters area or contact the office by phone at 530-667-2284, ext. 239. If you would like to visit one of the areas where fire has been reintroduced, fire management personnel will be happy to assist you. Thank you for your support as we try to bring natural processes back into the monument.



Eagle Roost April 1993

"bad" thing. Natural fuels present are unnatural and are at dangerous levels that fuel very intense wildfires. These types of fires are difficult to control and pose a greater threat to life and property compared to the periodic ground fires that once burned through Lava Beds. The ponderosa pines, like those near Mammoth Crater, are generally resistant to periodic ground fires. Aging shrubs now provide an abundance of "ladder fuels", a horizontal arrangement of plant growth that allows fire to climb into the tops of

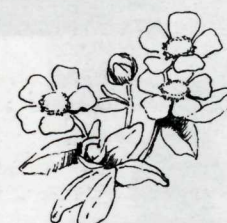
Federal fire policy allows managers to evaluate natural fires (lightning-ignited blazes) for their potential benefits to the ecosystem. If weather and fuel conditions will permit natural fire to burn at the proper intensity that will benefit rather than damage natural resources, managers can allow the fire to run its natural course. If threats are too great the fire may be suppressed entirely or minimum suppression tactics may be used to contain the fire within safe boundaries.

Fire Benefits Wildflowers

There are over 250 species of plants on the trails waiting for your discovery. Many of these are wildflowers that benefit from the open sunny spaces and rich soils that are created after a wildfire. They don't display themselves in large fields of color, but rather in splashes of color here and there. You may have to look closely to find them. The early-blooming sagebrush buttercups add their yellow spots of color to damp spots near cave entrances. Mats of purple phlox are also some of the first to appear.



blue flax



sagebrush buttercup

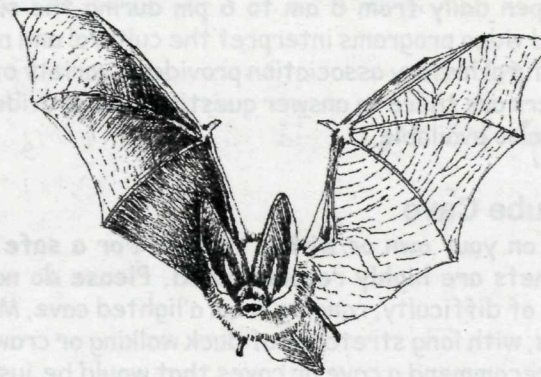
The peak season is June and July when phacelia, flax, penstemon, mariposa lily and asters decorate the landscape with shades of blue. Later in the season look for yellow rabbitbrush, blazing star and purple sage along the roadsides. Hike a trail or join a ranger to discover more about these amazing natives.

Flying Furry Mammals of Lava Beds

Did you know that bats are the only mammals that fly? That they are only one of a few land animals that use echolocation? That they are very closely related to humans? Bats can see very well?. One bat can eat at least 600 mosquitoes in an hour?

Because bats are so unique, scientists have placed bats in their very own order, Chiroptera, meaning hand-wing. The skeleton structure of a bat wing looks very much like the arm and hand of a human.

There are over 1,000 species of bats worldwide; about one quarter of all the different kinds of mammals on earth. Bats are also the most threatened animal on earth because of the rapid destruction of critical habitat and the slow rate of reproduction. Female bats usually produce only one pup per year. Twins are uncommon but do occur. Some species of bats can live as long as thirty years.



Townsend's Big-eared bat

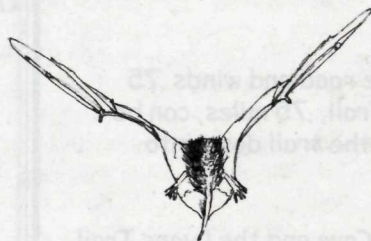
These bats leave their winter habitat around mid June and form migratory groups of thousands of individuals. These groups fly at altitudes of up to 10,000 feet and utilize jet stream air currents at that elevation to carry them hundreds of miles to their final destination. The young are born within three weeks after their arrival and learn to fly and forage for themselves shortly after that. The numbers of this species present in the monument exceeds 100,000 individuals during a summer season.

Most bats consume vast quantities of night flying insects such as mosquitoes and agricultural pests. An average insect-eating bat consumes one third of its body weight in insects each night. Mexican free-tailed bats weigh approximately six ounces. If this colony spends approximately 10 weeks at the maternal site, they have the potential of consuming 840,000 pounds or more of insects during their stay. That's a lot of bugs!

By the time late summer arrives the young leave the maternal site with the adult females and return to their winter habitat range. The exact destination of colony members is unknown. Habitat availability and conditions is equally unknown. Never-the-less, the original members of the colony and their offspring return to the maternal site each year to repeat the process. The population dynamics of this particular colony has been monitored since the late 1980's and is maintaining a steady population trend.

Because bats are easily disturbed some caves are closed each summer season to protect the maternity sites. Please honor these closures so that we can continue to enjoy these fascinating animals!

Adopt a Bat



Mexican free-tailed bat

Lava Beds National Monument has established an Adopt-A-Bat program to give visitors to the monument an opportunity to participate directly in the conservation of bats. Adoptive parents are given an adoption package full of information about specific bats that live in and around Lava Beds. The proceeds received from the sale of these packages are used to develop educational materials that are sent out to local schools to educate school children about bats, and for the resource management research program. Please inquire in the visitor center about adopting a bat today!

Approximately 40 species of bats live in North America. Fourteen species of strictly insect-eating bats are native permanent or seasonal residents of Lava Beds. This region provides one of the last strongholds in the western United States with suitable, preserved habitat for these animals. Many of the lava tube caves are used by most of the bats for either hibernating in the colder months or raising their young in the summer season. Other species of bats prefer the shelter of the deep grooves in the bark of ponderosa pine trees or the crevasses in cliff faces.

Because bats are such a critical component of this ecosystem two species are being closely studied by the resource management staff at the monument. These are the Townsend's big-eared bat, a state and federally-listed sensitive species, and the Mexican free-tailed bat. Focusing on these two "indicator species" will give valuable information on the environmental conditions of the caves and surrounding ecosystems.

Lava Beds NM is the site of the largest hibernating colony of the Townsend's big-eared bat in California. Studies conducted over the past ten years have revealed that this is a stable population.

These bats live in the lava tube caves and return to specific caves year after year to raise their young in the summer and hibernate in the winter. There is evidence that this species uses most of the caves in the monument during the course of the summer season for resting during the day, eating a late night snack, or providing shelter for their young.

These bats feed primarily on night-flying moths as they forage over the shrubby vegetation or at the forest edge. All bats must find a source of water and usually drink in flight. The floors of the ice caves provide the only water in the monument and are heavily used by bats as well as many other species of animals.

Most bats in the monument leave for warmer regions in the winter. This includes the migratory Mexican free-tailed bat. The population found here is the largest, northern most colony of this species in North America. The returning bat colony consists entirely of pregnant females that use the caves as a site to give birth to their young. They return every summer and migrate from sites in central and southern California.

Ice Cave Closures

Merrill and Skull Ice Caves have been closed temporarily in order to prevent access to the ice floors in both caves. The upper levels of Skull are still open for exploration but access to the ice floor at the bottom has been closed. This will give the ice floors a chance to recover from years of foot traffic that tracked in dirt and other debris. Resource management staff removed 1800lbs. of rock and 100lbs. of dirt this past summer from the ice floor in Skull Cave, allowing cleaner water to collect in the ice pools. These pools are an important source of water for the local wildlife.

In November 1997, a strange hole appeared in Merrill Cave's largest ice floor. When researchers entered the hole to investigate, they found a breeze was coming from somewhere beneath the cave floor, wearing away the ice and leaving a 15-foot wide chamber under the ice pool's surface. Since this discovery, the opening has widened and considerable debris has accumulated on the surface. Whether this represents natural rockfall or attempts by visitors to enlarge the hole is not known.

These cave closures are considered necessary for the rehabilitation of the ice floors. By allowing the caves to heal themselves, we will learn more about their natural processes and be more able to properly care for these special places in the future. Your understanding is appreciated.

Things to See and Do

1. Start at the Visitor Center

The visitor center is open daily from 8 am to 6 pm during the summer season, 8 am to 5 pm after Labor Day. Exhibits and video programs interpret the cultural and natural history of the area. A booksales area operated by the natural history association provides a variety of educational materials, postcards, bump caps and posters. Rangers are there to answer questions and provide information. Lanterns, on loan, for exploring the caves are also available.

2. Explore a Lava Tube Cave

Caves can be explored on your own or with a ranger. For a safe adventure you should have at least one light per person. Helmets are highly recommended. Please do not eat or smoke in the caves. The caves come in varying degrees of difficulty, ranging from a lighted cave, Mushpot, in the center of the parking lot, to the mile-long Catacombs, with long stretches of duck walking or crawling. Drop in at the Visitor Center. A ranger will be happy to recommend a cave or caves that would be just perfect for you, your family, or friends. Don't leave Lava Beds without trying one of these gems.

3. Hike a Trail

Trails range in length from .75 miles to 9.5 miles one way. Be sure to carry plenty of water and wear sun protection. A trail brochure is available at the visitor center. Pets are not allowed on the trails. The Bunchgrass Trail begins across from site B-7 in the campground. It follows an old roadbed around the northeast side of Crescent Butte and is approximately 1 mile long. The Three Sisters Trail also begins at the campground from Loop A. This trail travels out into the back country and ends at Skull Cave, about 8.75 miles distance.

Other trails include Big Painted Cave and Symbol Bridge which begins on the Skull Cave road and winds .75 miles past lava tube collapses to view pictographs at the bridge and cave. Heppe Cave Trail, .75 miles, can be found on the road to Mammoth Crater. View an enormous lava tube collapse and follow the trail down into Heppe Cave which has a large opening at both ends.

Longer trails include the Whitney Butte Trail, 3.5 miles one way, that begins at Merrill Cave and the Lyons Trail which connects the Skull Cave parking lot with Hospital Rock, 9.5 miles one way.

4. Climb a Cinder Cone

Cinder cones are easily eroded so please stay on the established trails and don't take shortcuts. Frothy lava, cooled in the air, created the large cinder cones throughout the monument. Schonchin Butte's .75 mile trail leads you to a panoramic view from the historic fire lookout. The lookout is staffed from June to September. Children of all ages can earn a Junior Fire Lookout badge.

5. Visit a Battlefield Site

Battlefield sites include the Thomas-Wright battlefield, Gillems Camp, Canbys Cross, Captain Jacks Stronghold, and Hospital Rock. Explore these sites to learn the history of the Modoc war. Gillems



Camp, US Army Headquarters during the Modoc war, Canbys Cross, where E.R.S. Canby was killed, and Hospital Rock can be visited by a short walk from the parking lots. A walk to the top of Hospital Rock leads you to an interpretive sign explaining the significance of this area of the monument. It also affords you a beautiful spot to view and photograph Mt. Shasta.

For a longer tour, hike the 1.2 mile trail from the Black Crater parking lot to the site where Captain Evan Thomas and Lieutenant Thomas Wright lost half their men. A self-guiding brochure is available at the trailhead at Captain Jacks Stronghold. As you travel through this lava fortress you will see how the Modocs held off a force 10 times their strength. Inner loop .6 miles, outer loop 1.1 miles. Be prepared for rough terrain.

6. Discover a Spatter Cone

Picnic tables and a wheelchair accessible toilet are available at Fleener Chimneys. Fleener Chimneys and Black Crater are castle-like formations created by globs of molten lava which piled up on top of each other. Varying textures and colors will delight photographers. Fleener Chimneys has a picnic area shaded by western juniper trees. The picnic tables were constructed by members of the CCC; the logs were obtained at Oregon Caves NM and the rocks were gathered locally.

7. View a Crater

Mammoth Crater and the nearby Modoc Crater is the source of lava that created many of the caves in the monument. Drive to Mammoth Crater and Hidden Valley on a dirt road just north of the visitor center. Hidden Valley, across the road from Mammoth Crater is a large conduit for the lava which flowed from the crater toward Tule Lake about 30,000 years ago. Experience the solitude of the ponderosa pine forest on a short trail that leads to the bottom of the valley.

8. Examine an aa Flow

AA is a type of lava that is very sharp in texture. Please examine very carefully. A good place to view a lava flow is at the Devils Homestead. How is this lava different from what you find in the caves?

9. Travel to the Past

One of the largest panels of petroglyphs in California can be found at Petroglyph Point at the northeast corner of the monument. Please treat this cliff with great respect and do not add your drawings to the panel. Early people paddled out in boats to carve these pictures into the soft rock, some may be more than 4,000 years old. Natural nesting sites for birds of prey such as barn owls and prairie falcons have been eroded into the cliff by wind and rain. A brochure is available at the site to explain a short walk along the bottom of the cliff. A trail that leads to the top begins from the road .3 miles beyond the parking lot.

10. Join a Ranger

Ranger-guided programs are conducted daily from Memorial Day to Labor Day. No reservations are necessary. Walks and cave tours meet at the visitor center porch. Activities include a morning walk at 9 am, an afternoon cave tour that begins at 2 pm and an evening campfire program at the campground amphitheater. During the winter programs are available with advance reservations.

Cave Softly

- * Do not use caves as restrooms
- * Stay on the trail, if one exists
- * If you see any bats, leave the area quietly
- * Do not damage formations

Cave Safely

- * Tell someone where you are going
- * Wear a hard hat, jacket, long pants and sturdy, non-slip shoes
- * Carry extra sources of light
- * Pay attention to your route
- * Watch for low ceilings, uneven floors, ice and other hazards
- * No gas or carbide lanterns allowed

REGULATIONS PROHIBIT marring or defacing cave walls, damaging or removing formations, littering, or harming cave life. No gas lights, no smoking, alcohol, food, pets, or fires in caves.

Special Events Planned for 75th Anniversary

* **March 20 – 24 Petroglyph Week** Petroglyphs and other Native American rock art will be the focus.

* **April 3 – 7 Wildlife Week** Tours will focus on the different birds, mammals and reptiles in the area.

* **April 17-21 J. D. Howard Week** A member of the staff will portray J. D. Howard, “the Father of the Lava Beds National Monument”, and present programs on his early exploration of the lava beds region between 1918 and 1938.

* **May 12-14 Timeline 2000** Living History events will be held at Gillems Camp and other sites at the north end of the monument. Friday, May 12, will be reserved for special programming for school groups.

* **July 15 – Modoc Gathering** The annual Modoc reunion gathering will be held at the monument campground. Members of the Modoc tribe will recognize tribal elders and celebrate their identity as a people.

* **August “31 Caves in 31 Days Challenge”** Cancellation slips will be placed in 31 of the monument’s caves. Any visitor who can visit all of these caves during the month will receive a special certificate, commemorating their successful adventure.

* **Week of September 17 – The General Miles Marching & Chowder Society** A group of living historians who specialize in recreating life in the U.S. Infantry between 1865 and 1890, will hold their annual National Encampment here.

* **November 21, 2000 – Lava Beds 75th Anniversary Celebration** We will celebrate the monument’s founding date with special tours and ceremonies.

Volunteers Wanted!

Volunteers are needed to assist with several projects at the monument. These include staffing the visitor center information desk, assisting the maintenance crew with various tasks, conducting cave research projects and serving as a campground host.

Visitor center duties involve checking out flashlights to visitors and providing basic information about the monument. This can include conducting informal roving visitor contacts in and around the caves on the cave loop road.

Volunteers are also needed to serve as a campground host for part or all of the summer. Primary host responsibilities are to rove the campground in the morning and evening in order to insure compliance with campground fees and to assist visitors with any questions or problems. A campsite with full hookups is provided. Volunteer hosts must provide their own RV.

Maintenance tasks involve various construction and clean up projects according to the skills and interests of the volunteer.

Cave research projects vary but could involve surveys and mapping or entering data on the computer to compile information. Contact the visitor center for more information.

Time Line

500,000 years ago Medicine Lake Volcano begins to form

30,000 years ago Mammoth Crater forms lava tube caves

10,000 years ago First people enter the Tule Lake basin

December 1826 Peter Skene Ogden party – first European contact

December 1843 John Fremont expedition – first U.S. Army troops

Summer 1846 Applegate Trail established

November 1872 Modoc War begins

June 1873 Modoc War ends – Modocs deported to Oklahoma

September 1917 J. D. Howard first visits the Lava Beds



1920 Lava Beds area added to Modoc National Forest

November 1925 Lava Beds National Monument established

Spring 1933 Lava Beds transferred to National Park Service

Summer 1933 First CCC workers at Lava Beds National Monument

April 1951 Petroglyph Point added to Lava Beds National Monument



April 1963 Lava Beds Natural History Association established

October 1972 Wilderness Areas designated

August 1990 First Modoc Reunion

November 21st, 2000 Lava Beds 75th Anniversary

Lava Beds National Monument includes many resources within its boundaries, including many of the campsites and battlefields of the Modoc War of 1872-73; the lava tube caves explored by J.D. Howard earlier this century; and the traces of earlier cultures. In an effort to make these resources better known to the public, we will be adding special living history programs this year to help celebrate the monument's 75th anniversary.

"Living History" refers to using staff in period clothing recreating the lives of people from the past. The technique offers a personal perspective on historical events, and makes history more vivid and easier to understand. The monument will offer several special living history programs in 2000 – a living history and education weekend in May, programs by an interpreter portraying J.D. Howard, "the Father of Lava Beds National Monument," and the national encampment of a major living history organization.

On May 12-14, a living history event, "Timeline 2000," will open at the north end of the monument. Members of the Modoc nation will present programs on their culture at Captain Jack's Stronghold.

Living historians from around the Northwest will offer demonstrations of daily life for soldiers during the Modoc War, early fur trappers, and emigrants on the Oregon Trail.

At Fleener Chimneys, visitors will have the chance to meet J.D. Howard, portrayed by a member of the staff. On Friday, special educational programs will be offered for school groups. Programming for the general public will be offered on Saturday and Sunday.

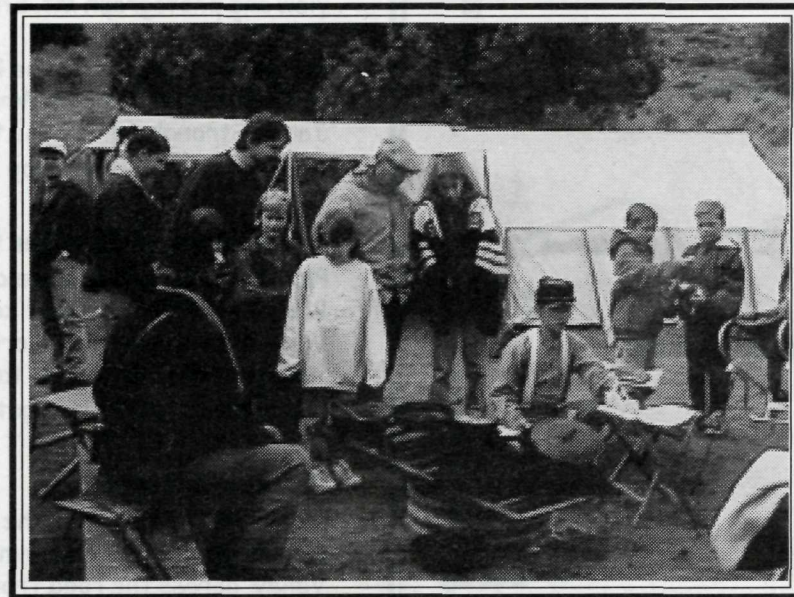
Sometimes the man credited with founding Lava Beds National Monument wished others had never followed his lead.

It was Judson D. Howard - called Judd or J.D. by his friends - who mapped and named many of the Lava Beds lava tube caves. Howard's relentless efforts also are credited with helping to have the area declared a national monument in 1925.

Howard's legacy has mostly gone unrecognized except for a plaque placed on a rock outside the entrance to Mushpot Cave. Although park files contain some information on his explorations and discoveries, he remains something of an enigma. The only mark he left behind are names he painted inside many of the caves he named. Howard contributed the earliest photographs of cave interiors, but shied away from other's cameras.

People who knew J.D. picture him as a physically unimposing man. Cal Peyton, who lived across the street from Howard in Klamath Falls, remembers him as being about 5'5" tall and 130 pounds. "He walked with short steps and he could walk you into the ground. You'd think the frail critter would play out and you'd have to carry him home, but if anybody was carried home, it would be you."

History Comes Alive at Lava Beds



On special weekends throughout the summer, a member of our staff will portray J.D. Howard, the "Father of Lava Beds National Monument." Between 1918 and 1938, Howard explored caves and geological features throughout the area. He named and mapped 80 caves, led tours through the caves, and campaigned to have the lava beds named a National Monument. Our "J.D. Howard" will talk of his life, explain some of his beliefs about the region, and lead special tours through the caves his real-life counterpart discovered seventy years ago.

The monument will also host the annual convention of the General Miles Marching & Chowder Society in September. The Society is a group of dedicated living historians who portray the common soldiers of the U.S. Infantry between 1865 and 1890. Once a year, the members gather from all over the country at a site related to the Indian Wars. They set up a period-style encampment, conduct drill and firing exercises, and participate in memorial marches over the ground covered by their forbears in the last century.

The living history program at Lava Beds National Monument offers a unique opportunity to experience the past through the eyes of the individuals who made the history. We invite everyone to experience the difference this year as we mark our diamond anniversary.

J. D. Howard, A Monument Legacy

Carol Howe, writing about Howard in his book, "Frontier Stories of the Klamath Country," described Howard as "a short dumpy-looking fellow whose clothes were neither neat nor stylish."

No matter how he's pictured, Howard was peculiarly suited to the Lava Beds. He moved to Klamath Falls in 1916 to work as a miller for Martin Brothers Milling Company. A native of Fort Atkinson, Iowa, he grew up in the Midwest, eventually studying chemistry at the school that later became the Colorado School of Mines, specializing in flour chemistry. He came west in the early 1900s, working in Los Angeles before moving to Oregon.

Much of Howard's work was at the Martin Brothers Mill in Merrill. From there he often walked to the Lava Beds region, where he was befriended by some of the rugged individuals who lived in the sparsely settled country.

"He went all the time," recalls Jean Puckett, a neighbor. "People would come and get him because he didn't have a car."

Howard's intimacy with the Lava Beds began Sept. 10, 1917, during a visit with the George Howells family. That first trip set the tone for future journeys as Howard named Fleener Chimneys and Winemas Chimneys and explored

several caves. From then on his diaries indicate a continuum of visits. In those early years, Howard often had to crawl on his hands and knees through dense stands of mountain mahogany. Entrances to undiscovered caves frequently were possible only after clearing walls of rock.

But if his travels and discoveries at the Lava Beds were among his delights, among his greatest disappointments was seeing the area destroyed by careless or uncaring visitors. Howard once said "I am sorry I made a road up to the place. Further, I am sorry I left the entrance to the Catacombs open after I first entered it. I opened it and enlarged it, then began to take visitors there. I should have closed it again and left it unknown as the better stalactites are now gone except in the remote crawlers".

Howard's perceived need to preserve the lava tubes and the area's other geological features was a major reason why he vigorously pushed for a federally protected status. Since the creation of Lava Beds National Monument, that protection has been provided. For that, the enigmatic Howard would surely be pleased.

The CCC at Lava Beds

Gillem's Camp, one of the principle military encampments of the Modoc War of 1872-73, came to life again under very different circumstances sixty years after the army left the area. The old campsite became the center of Camp Tulelake, a base for the Civilian Conservation Corps.

The Origins of the CCC

The Civilian Conservation Corps, or CCC, was a very successful relief program during the Great Depression. In the early 1930's, the American economy was in terrible shape – more than quarter of the working population were unemployed. Many who could not find work were young men trying to start a career, while others were former soldiers, veterans of World War I. In an effort to help these men, President Franklin Roosevelt's administration started the CCC.

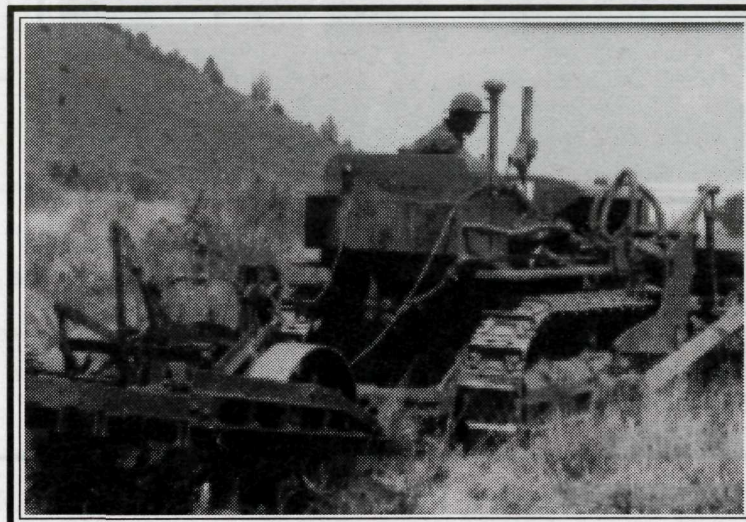
Men enlisted in the CCC for six-month tours of duty. Young men formed work crews, guided by the older veterans and officers detached from the U.S. Army. The CCC established camps all over the country, but most of the sites were in the western United States. The CCC crews performed conservation work on state and federal parks. They planted trees, fought fires, built roads, installed electric and telephone lines, and did other projects to improve public lands.

For their work, the CCC crewmen received room and board in the camps and \$30.00 a month, of

which \$25.00 was sent home to their families. Many men served multiple tours of duty.

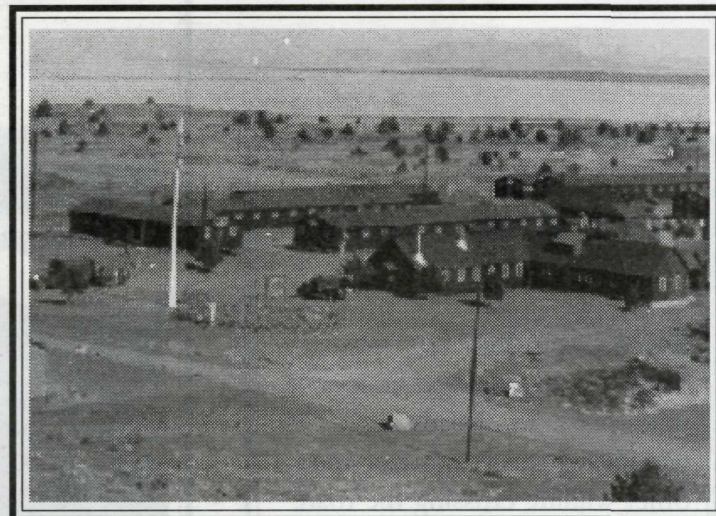
The CCC at Lava Beds

The first CCC facility near Lava Beds National Monument was established at Timber Mountain in 1933. Within a few months, a "strike camp" – army-surplus tents with wood frames and floors – was established on the old shoreline of Tule Lake. Over the years, more permanent wooden buildings replaced the tents. Camp Tulelake included barracks, mess halls, offices, a motor pool, and mechanical



Construction of Lyons Road

workshops. Eventually, there were as many buildings as there had been tents in Gillem's Camp during the Modoc War. The CCC crews were kept very busy. Different crews at Lava Beds built roads through the monument, laid the first power and telephone lines, and built a superintendent's residence and headquarters building at Indian Well (where the modern visitor center stands).



Gillems Camp

They also built a campground (the current "A" loop of the campground) and most of the picnic tables still in use today. Work crews from Camp Tulelake laid out trails and developed dozens of trails through the lava tube caves. The CCC workers moved over ten million cubic yards of earth and debris from the caves near headquarters and installed ladders and stairways – all without heavy construction equipment. In the caves, the CCC crews used picks, shovels, block-and-tackle rigs, and wheelbarrows. Occasionally, they used dynamite to widen natural openings, but the debris was removed largely by hand.

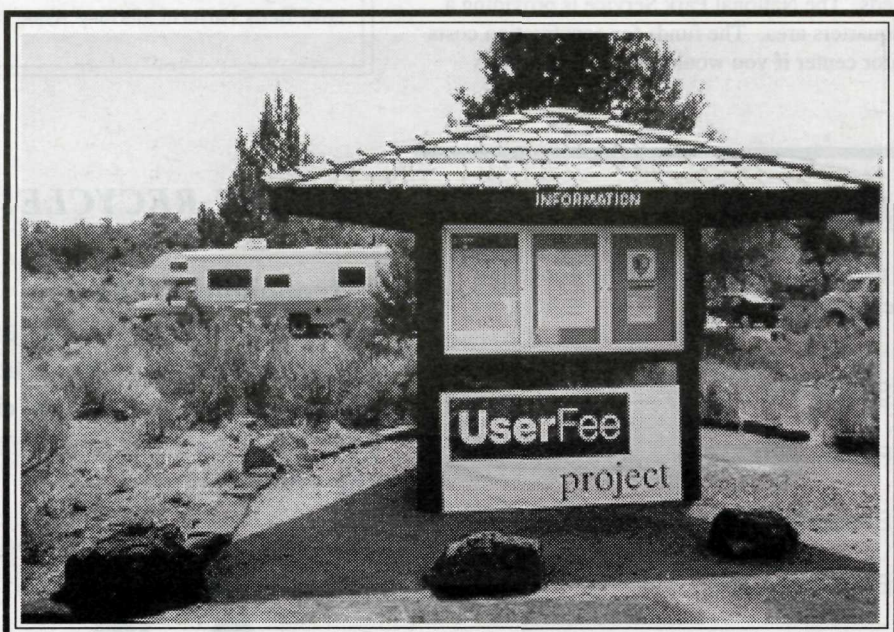
Camp Tulelake in Later Years

With the outbreak of World War II, the CCC was shut down, as many of the former workers became soldiers. The last CCC crew at Camp Tulelake closed the facility in the spring of 1942.

During the war, the old buildings deteriorated, so that by 1949, most had been demolished. The National Park Service continued to use several of the old CCC buildings at Gillem's Camp for years after the war ended. The old office building became a visitor center, and one of the old barracks was converted to a ranger residence.

The last remaining structures of Camp Tulelake were demolished around 1970 to restore the original character of the old campsite. The current trail system through Gillem's Camp was constructed during the same period.

Although little remains of the old CCC camp but the leveled gravel field north of the old artillery circle, the legacy of the Civilian Conservation Corps will remain for as long as people use the roads and trails they laid out, the campsites they built, and the facilities they installed. We owe a debt of gratitude to the CCC we can never entirely repay. Thanks to their efforts, we are able to see and enjoy Lava Beds National Monument today.



Fee Demonstration Program

In 1995 Congress established a three-year fee demonstration program. This program was an effort to make National Park Service areas more self-supporting. All fees collected in the test areas were to be retained by the park service. The participating parks were allowed to retain 80% of the funds collected, while 20% of those funds were distributed throughout the National Park Service areas for improvement projects. Congress has granted an extension of the current program through 2001.

Lava Beds has benefitted from the fee demonstration program in a variety of ways. Our first project was the construction of three new visitor contact stations at the visitor center, Gillems Camp, and Petroglyph Point. The Mushpot Cave theatre and exhibits are also scheduled for rehabilitation.

Entrance passes to the monument are available on a weekly or annual basis. Citizens 62 or older may purchase a lifetime Golden Age passport for \$10.00, valid nationally. Annual Golden Eagle passports to all federally areas are available for \$50.00.



National Park Service
Lava Beds
National Monument
Box 867
Tulelake, CA 96134

(530) 667-2282 ext. 232
www.nps.gov/labe

For Your Safety

Drive Carefully!

The monument speed limit is 45 miles per hour. Roads are winding. Be alert for deer and other wildlife crossing the road.

Don't feed wildlife!

Please don't share your lunch with any wild animals. Deer can become aggressive. Human food may be harmful.

Cave with Care!

Caves are cold and dark. Wear a helmet, have at least one flashlight per person, wear sturdy shoes, long sleeves, long pants and gloves. Never cave alone.

Be prepared!

Check the local forecast. Carry plenty of water on the trails. Wear a hat and sunscreen. Lava terrain is sharp and rugged.

Pets!

Dogs are not allowed in the caves or on any of the trails. Dogs must be on a leash at all times.



Educational Programs for School Groups Ranger-guided programs are available year round for school children of all ages. Programs focus primarily on the history of the Modoc war with a tour of Captain Jacks Stronghold or volcanic landforms beginning with a slide program in Mushpot Cave. Programs should be reserved at least six weeks in advance. Curriculum materials are available. Please phone (530) 667-2282 ext. 232 for more information.

A Research Center For Lava Beds

The Cave Research Foundation, a volunteer organization, along with the Lava Beds Natural History Association, is raising funds to build a small research center to support the work of visiting scientists. At present, Lava Beds has no place for scientists to live and work, except in the winter months when seasonal staff apartments may be available. Most scientific research is conducted in the summer months when professors are free from their classes and the ground is free of snow. Imagine how much more effective the research partnership will be when a facility at Lava Beds NM is in place!

The planned research center building is 1,664 square feet in area and will accommodate several researchers with ample laboratory, storage and work space. It will be available to anyone whose work will add to the understanding, preservation, and protection of this unique ecosystem. The plans for the research center have been received enthusiastically by scientists and park staff alike. "A research center located within Lava Beds will fill a significant void in the monument's ability to attract and support legitimate researchers and educational organizations", says Lava Beds superintendent Craig Dorman.

The construction of the research center is being financed entirely by donations. The architectural services have been donated by Minert Architects, Inc. of San Jose, a firm whose principal has participated in cave research at Lava Beds. The National Park Service is providing a previously developed building site close to the headquarters area. The funds for construction costs are presently being raised. Please inquire at the visitor center if you would like to support this project.

STRONGHOLD 2000

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Funding
Lava Beds Natural History Assn.

Join the Lava Beds Natural History Association Today!

Membership fees and proceeds from sales of publications and theme-related items are used to provide free lanterns for cave explorations, support for regularly scheduled interpretive activities, publications, and research activities.

Name _____
Address _____
City/State/Zip _____
Telephone _____

Single \$15 _____
Family \$20 _____
Sustaining \$35 _____
Benefactor \$50 _____

(Mail Check to Lava Beds Natural History Association, P.O. Box 865, Tulelake, CA, 96134.)

A non-profit organization authorized by Congress to provide aid to the National Park Service. Membership benefits include a 20% discount on purchases, voting privileges, and the satisfaction of knowing that your involvement affects the future of Lava Beds National Monument.

PLEASE RECYCLE!

"Stronghold 2000" is printed on recycled paper. Recycle it with your other newspapers and, please, do your part to help protect the environment.



Lava Beds Association
Membership Form