

Oliver Lee Memorial-New Mexico State Park Series

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New Mexico Geology, v. 18, n. 1 pp. 14-17, Print ISSN: 0196-948X, Online ISSN: 2837-6420.

<https://doi.org/10.58799/NMG-v18n1.14>

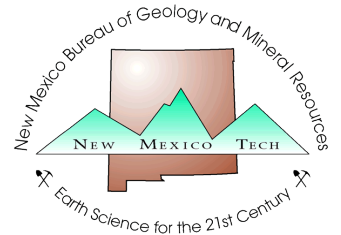
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Oliver Lee Memorial State Park, at the mouth of Dog Canyon on the western escarpment of the Sacramento Mountains (Figs. 1, 2), opened in 1980, but the area has attracted visitors for several thousands of years. The 180-acre state park has a flowing stream and forms an oasis on the edge of the harsh desert of the Tularosa Valley (Spanish, "reddish willows") Valley. The park is named for Oliver Lee (1865–1941), a prominent rancher and state legislator who settled near the mouth of Dog Canyon in the late 1880s. Lee was active in developing water-control projects in the area. Oliver Lee's ranch is one of the many exhibits at the state park. The Visitor's Center houses displays of the geologic and cultural history of the canyon area. Approximately 30,000 people enjoy camping, hiking, and picnicking in the park each year. An interpretative trail along lower Dog Canyon allows visitors a glimpse of vegetation and wildlife in the oasis as well as several cultural sites. The Dog Canyon Trail starts at an elevation of about 4,500 ft in the state park and climbs the steep escarpment of the Sacramento Mountains to the Eyebrow Trail to Joplin Ridge at an elevation of 7,753 ft, for a total one-way distance of about six miles (Fig. 3). The state park has primitive campsites, campsites with electrical hookups and drinking water, and showers and a disposal station (Fig. 4).

History

The Dog Canyon Trail has been a major route from the Tularosa Valley on the west to the highlands of the Sacramento Mountains to the east for several thousands of years. The earliest occupation occurred about 10,000–12,000 years ago (Clemons, in press). Thousands of artifacts, including pottery shards, stone implements, and spear points attest to human occupation in the canyon area (Eldred, 1989). Mortars, small smooth-sided cylindrical holes, are found in the rocks throughout Dog Canyon and the state park. These mortars are sometimes called "Indian wells" because water collects in the holes. They were formed by prehistoric Indians grinding seeds with stone manos over many years. Natural caves in the canyon provided shelter for visitors throughout time.

About 300 years ago, the Apache Indians migrated into the area and prevented serious settlement by the Spanish and later by Anglos until the late 1800s. Dog Canyon became one of many Apache strongholds. The Aqua Nueva Apaches lived in the vicinity, although other tribes are known to have traveled through the canyon. Numerous U.S. Army military reports during the mid-

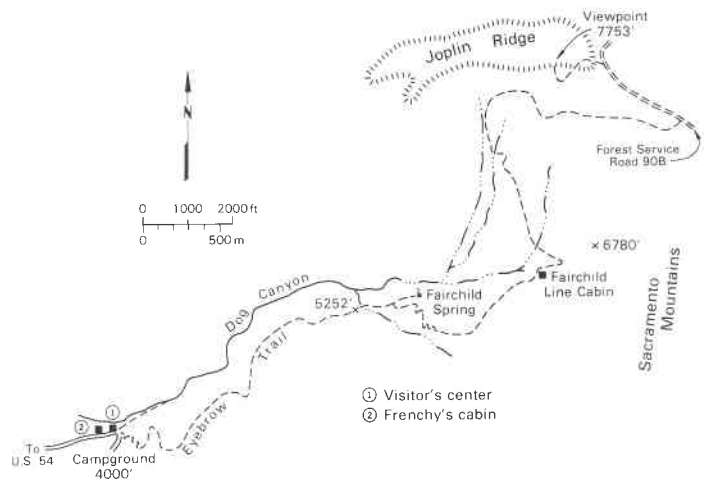
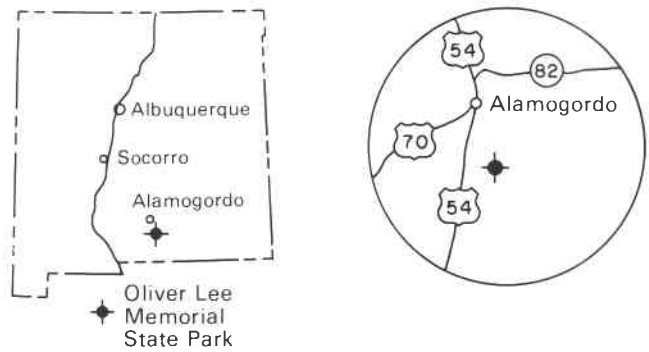


FIGURE 1—Location of Oliver Lee Memorial State Park and map of Oliver Lee Memorial State Park and Dog Canyon Trail.

1800s document Apache raids throughout southern New Mexico, and many times the raiding Apaches were tracked to Dog Canyon, which provided access to the eastern highlands. Several encounters between the Indians and settlers from 1840 to 1881 occurred in the area; a few locations are marked on the trail. About 1850, a group of settlers tracked raiding Apaches to the canyon. They lost the trail and found only a dog left behind by the Apaches. Since



FIGURE 2—View of Oliver Lee Memorial State Park and the Tularosa Valley, looking west from above the Visitor's Center. Ocotillo stem in foreground appears to divide the view.



FIGURE 3—Visitor's Center and beginning of Dog Canyon Trail up the mountain behind the center.

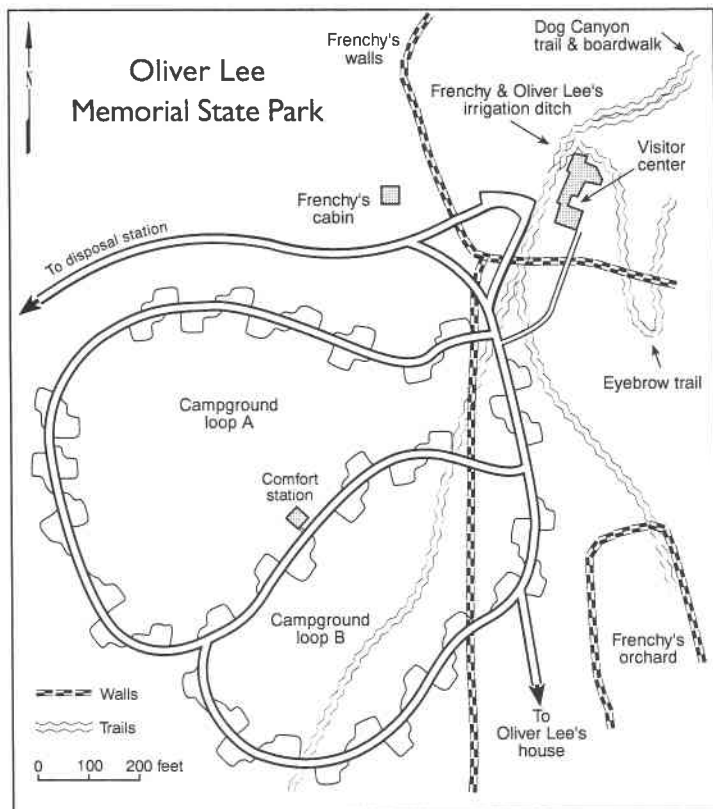


FIGURE 4—Map of the park facilities.



FIGURE 5—Remnants of Oliver Lee's conduit for carrying water to his ranch.

then it has been called Dog Canyon (Pearce, 1965). By the 1870s the Apaches were placed on reservations, raiding ended, and a wave of settlers arrived.

One of the earlier settlers of the Dog Canyon area was "Frenchy", actually Francois-Jean Rochas. Frenchy was born in France in 1843 and emigrated to New Mexico in the 1880s. Remnants of Frenchy's two-room adobe-rock house are visible near the Visitor's Center. He built mortarless stone walls to corral his livestock; portions of the walls still snake along the slopes at the mouth of Dog Canyon and behind the Visitor's Center. Frenchy raised cattle and tended an orchard and vineyard.

Oliver Lee settled in the Dog Canyon area about the same time as Frenchy. Oliver Milton Lee was born in Buffalo Gap, near Abilene, Texas on November 8, 1865 (Keleher, 1962) and came to New Mexico Territory in the fall of 1884 with his half brother, Perry Altman. They were attracted to New Mexico by the open range, free land, and a ready market for horses. Oliver, already an established horseman and adept with a revolver, insisted on coming; he was only 18. Later Oliver brought his mother and servants and began the Dog Canyon Ranch.

Oliver and Frenchy jointly developed an irrigation system at Dog Canyon. Ditches carried the precious water to the ranch house and pastures. Ruins of the irrigation conduits remain along the trail leading into the canyon from the Visitor's Center (Fig. 5). This was one of several irrigation systems Oliver established along the western escarpment of the Sacramento Mountains. Some of these systems remain in operation today.

During the late 1800s, as competition for open range, land, and water increased, violent rivalries sometimes ensued. Soon after Christmas 1894, Frenchy was found dead in his cabin at Dog Canyon (Young, 1984). A coroner's jury concluded it was suicide, but some evidence and heresay suggest it was murder. Some accounts suggest Oliver Lee and Frenchy were disagreeing over the water ownership at this time. Other accounts suggest field hands did Frenchy in. No one was ever charged with the murder, and the mystery of his death has never been solved. The Lincoln County War is another example of these violent times. Oliver Lee

often became involved in these disputes and was accused by some of cattle rustling and stealing land. In 1896, A. J. Fountain, a prominent judge, local rancher, and rival of Oliver Lee, and Fountain's young son Henry were murdered while traveling through the Tularosa Valley. Pat Garrett, sheriff of Doña Ana County, charged Oliver with the murder. Oliver evaded capture and refused to surrender, believing that he would not remain alive or receive a fair trial in Doña Ana County. It was at this time that a bill was in the state legislature to create Otero County (named after Miguel Otero, the Territorial Governor at that time) from parts of Doña Ana and Lincoln Counties. Oliver's friends in the legislature pushed the bill through, and Otero County was established in 1899. The change in county shifted jurisdiction of Oliver's case from Doña Ana to Otero County. Later that year Oliver surrendered to authorities and was subsequently acquitted of the Fountain murders. The murders were never solved and have since become the source of many legends.

Oliver Lee continued to prosper as a rancher. In 1908 he formed the Otero County Irrigation Company, and in 1914 he became vice-president and general manager of the Circle Cross Cattle Company, one of the largest ranches in southern New Mexico consisting of nearly one million acres. Financial difficulties forced dissolution of that company in the 1920s. He served as a representative or a senator in the New Mexico State Legislature several times from 1918 to 1931 (Young, 1984). Oliver died in Alamogordo on December 15, 1941 (Keleher, 1962), and his children and grandchildren still maintain some of his ranches.

In 1971, Oliver Lee's ranch house was partially rebuilt for a movie called "Scandalous John," and the tampering disqualified it from designation as a national historical site. However, in 1983 the house was declared a state archaeological site and restoration of the house began. Tours by State Park personnel are given on weekends.

Geology

Dog Canyon is one of several rugged box canyons that drain the western Sacramento Mountains. The canyon floor is at an elevation of 4,500 ft and rises to 9,700 ft, forming the highest point on the Sacramento escarpment.

In the canyon and along the escarpment of the Sacramento Mountains, a section of sedimentary rocks ranging in age from Lower Ordovician to middle Permian is exposed (Figs. 6, 7; Pray, 1961; Kottlowski, 1981; Austin et al., 1992). The oldest unit exposed at the bottom of the mountains is the El Paso Formation (Ordovician), which consists of approximately 430 ft of gray dolomite, dolomitic quartz sandstone, and cherty nodules and lenses that were deposited near the shoreline of a shallow sea about 570 million years ago. Erosion occurred as the seas withdrew

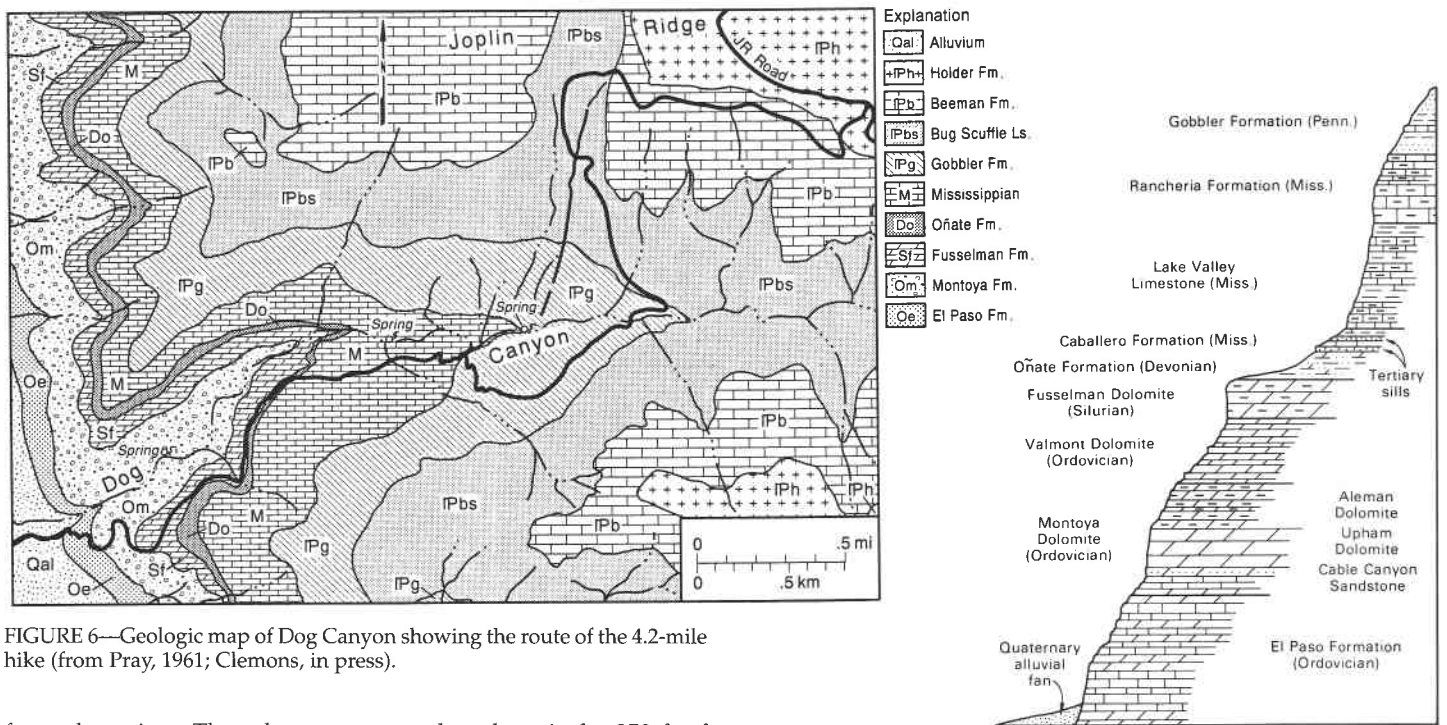


FIGURE 6—Geologic map of Dog Canyon showing the route of the 4.2-mile hike (from Pray, 1961; Clemons, in press).

for a short time. Then the seas returned to deposit the 350 ft of dolomitic sandstones and dolomites of the Montoya Formation (Ordovician) that overlies the El Paso Formation. The Montoya Formation is divided into three units: the thin, basal Cable Canyon Sandstone, Upham Dolomite, and Aleman Dolomite (the youngest unit). The Valmont Dolomite (Ordovician), Fusselman Dolomite (Silurian), and Oñate and Sly Gap Formations (Devonian) overlie the Montoya Formation. The Valmont Dolomite consists of approximately 150 ft of light-gray, fine-grained dolomite with locally abundant chert nodules and thin dolomitic shale lenses; it is correlative with the Cutter Formation elsewhere in southeastern New Mexico (Pray, 1961; Austin et al., 1992). The Fusselman Dolomite, less than 85 ft thick, consists of a resistant, brownish-gray ledge of finely crystalline dolomite with abundant chert layers and nodules. Rare fossils are found in the dolomite (Fig. 8). It forms the upper ledge approximately 500 ft above the Visitor's Center. The seas began to withdraw once again as 60–100 ft of dolomitic siltstone, dolomite, quartz sandstone, limestone, and shale forming the Oñate and Sly Gap Formations were deposited on a shallow-marine floor and in local basins or lagoons. Two Tertiary camptonite porphyry sills have intruded the Devonian sedimentary rocks (Figs. 6, 7) and crop out along the Dog Canyon Trail.

Seas once again migrated over the area about 345–320 million years ago as Mississippian rocks of the Caballero Formation, Lake Valley Limestone, and Rancheria Formation were deposited on top of the Ordovician–Devonian rocks. The Caballero Formation consists of 60 ft of interbedded gray limestone and calcareous shale. The Lake Valley Limestone is as thick as 400 ft and consists of crinoidal limestones and minor thin siltstones and shales deposited on top of a shallow-marine shelf. On the north slopes of Dog Canyon two large biohermal mounds crop out in the Lake Valley Limestone (Kottlowski, 1981). These bioherms are thick mounds of fossil crinoids, bryozoans, and dense limestone that formed near the edge of the continental shelf (Bowsher, 1986). Post-biohermal beds pinch out against these bioherms. The Rancheria Formation consists of thin-bedded argillaceous and silty limestones, approximately 250 ft thick.

The Gobbler Formation (Pennsylvanian) forms the uppermost slopes of the Sacramento escarpment visible from the Visitor's Center at Dog Canyon and is more than 1,200 ft thick. It consists of shallow-marine sandstones, shales, and limestones of Atokan age deposited about 315–296 million years ago (Algeo et al., 1991). The uppermost sheer cliffs visible from the Visitor's Center belong to

FIGURE 7—Stratigraphic section up Dog Canyon (modified from Pray, 1961; Kottlowski, 1981; McLemore, 1991).



FIGURE 8—Coiled nautiloid cephalopod fossil found in the Fusselman Dolomite along Dog Canyon Trail.

the Bug Scuffle Limestone Member of the Gobbler Formation. Younger Pennsylvanian and Permian sedimentary rocks overlie the Gobbler Formation but are not visible from the state park. The uppermost Eyebrow Trail crosses these rocks.

Oliver Lee Memorial State Park lies on the edge of the Tularosa Valley, a closed basin of the Rio Grande rift, which covers an area of approximately 6,500 mi² (Fig. 2). Basin and Range faulting began about 25 million years ago and resulted in the uplift of the bordering mountains, the San Andres, Organ, and Franklin Mountains to the west and the Sacramento Mountains and Sierra Blanca to the east. The basin fill is comprised of interbedded sand, silt, clay, and evaporites forming the middle Miocene to middle Pleistocene Santa Fe Group, about 30–1 million years old (Lozinsky and Bauer, 1991). Material shed from the steep escarpment during intense rainstorms and rapid snowmelt deepen and cut into the canyons, such as Dog Canyon, and form the Quaternary alluvial-fan deposits that form aprons along the foothills of the mountains.

During the late Pleistocene (1 million–10,000 years ago), a large,

shallow lake, named Lake Otero, occupied much of the basin; the state park lies on the eastern shoreline (Herrick, 1904; Blair et al., 1990). Lake Otero was formed from melt water of glaciers in Sierra Blanca and began to dry up about 20,000 years ago as the climate became warmer and drier. Remnants of Lake Otero are present today as the gypsum dunes forming White Sands National Monument and as present Lake Lucero and Alkali Flat playa.

The springs feeding Dog Canyon come from rain and snowmelt that make a way through cracks, fractures, and bedding planes in the mountains and come out along beds of the Montoya Formation and at Fairchild Canyon from Mississippian limestones. White to gray travertine coats the canyon walls in places and was formed by dissolution of the limestones and dolomites and precipitation of calcium carbonate from the flowing water.

On the steep north side of Dog Canyon, above the picnic area in the canyon bottom, a shallow shaft, 15 ft deep, cuts into the Montoya and upper El Paso rocks. The shaft was driven along an altered fracture zone in hopes of finding hidden mineral deposits. Yellowish-brown material forms a talus from the workings. Only calcite and iron oxides are found (Kottlowski, 1981).

ACKNOWLEDGMENTS—Some of the information presented in this summary is from printed handouts and exhibits at Oliver Lee Memorial State Park. Jiri Zidek identified the fossil in Fig. 8. Special thanks to Robert Colpitts and Frank Kottlowski for reviewing an earlier version of this manuscript.

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