

## Morphy Lake State Park - New Mexico State Park Series

New Mexico Bureau of Mines and Mineral Resources

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*New Mexico Bureau of Geology & Mineral Resources*  
*New Mexico Institute of Mining & Technology*  
801 Leroy Place  
Socorro, NM 87801-4796

<https://geoinfo.nmt.edu>



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# Morphy Lake

Morphy Lake State Park is one of the least accessible of New Mexico's state parks. The lake can be reached by paved road NM-94, either south from Mora, or northwest from Sapello to the village of Ledoux. From Ledoux, an unimproved road continues west for 2.25 mi up the south side of the valley of Rito Morphy. At this point take the right fork and continue north across Rito Morphy and up a steep switchback to Morphy Lake. The lake is less than 1 mi from the junction.

## Geologic setting

Morphy Lake, also known as Murphy Lake, occupies a small natural basin on the east slope of the Sangre de Cristo Mountains. Altitude of the lake is 7,840 ft above sea level. To the west the high ridge on the skyline rises to almost 12,000 ft.



Uplift of the Sangre de Cristo Mountains began at about the close of the Mesozoic Era some 70 million yrs ago. Erosion has stripped away much of the younger sediments that once covered the present site of the mountains, exposing the old Precambrian rocks seen between Mora and Ledoux and also under the high ridge west of Morphy Lake. Laboratory dating of the granite south of Ledoux indicates that the mountains formed 1.4 billion yrs ago. The schists and quartzites exposed near Mora are older than the granite, but unfortunately their radioactive "clocks" were reset when they were intruded and me-

tamorphosed by the granite. Therefore, dating of these metamorphic rocks by measuring the radioactive decay of certain isotopes within the rock simply gives the same date as the younger, intruded granite.

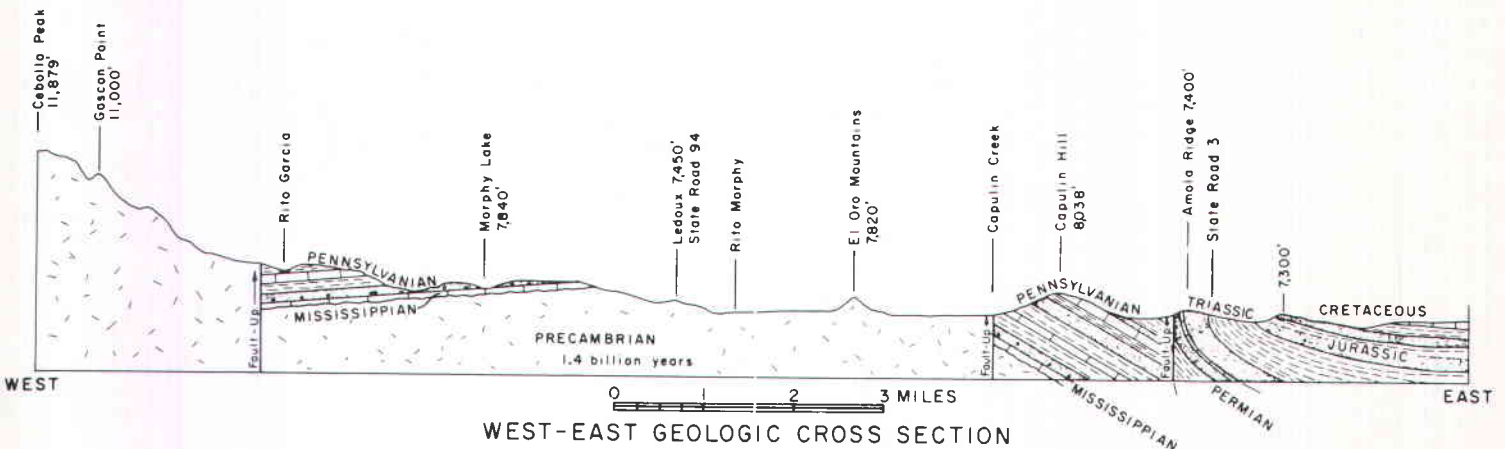
Since the end of Precambrian time and the beginning of Paleozoic time, about 500 million yrs ago, the now-mountainous area has undergone many changes. For much of the early part of the Paleozoic, the area was covered by a large inland sea; limestone, consisting primarily of the debris from the invertebrates that inhabited that sea, was deposited. During subsequent intervals of erosion, most of these layers of limestone were stripped from northern New Mexico, although they can still be seen in the southern part of the state. The oldest Paleozoic sediments preserved in the Sangre de Cristos are Mississippian fossiliferous limestones that accumulated in a vast marine sea that covered the area about 340 million yrs ago. These rocks are present a short distance west of Ledoux, but they are mostly hidden by soils and vegetation.

The sea continued to cover the area during the next period of geologic time known as the Pennsylvanian. However, during the early to middle part of this period, mountains began to form to the north and west. Debris that eroded from these mountains spread to the east, building alluvial plains of sands and clays. Sandstones that formed from the sands can be seen in the ledges along the east and south sides of Morphy Lake. As uplift continued, more and more sands and gravels

were dumped into the area until as much as 10,000 ft of sediment accumulated; during the same time the shoreline of the great sea receded far to the east and south. As erosion continued, the mountains diminished in height and area so that by mid-Permian time, about the end of the Paleozoic Era, the land began to subside gradually and the sea advanced northward once more to the vicinity of Mora.

With the beginning of the Mesozoic Era, about 220 million yrs ago, the sea retreated from New Mexico. For the next 100 million yrs the land surface generally remained low, crossed by meandering streams and dotted by lakes and sand dunes. Only low hills were left of the mountain ranges to the north and west. Finally, during the latter part of Cretaceous time, about 100 million yrs ago, the area subsided again and was covered by a sea that inundated the entire western interior of the United States and Canada. In this great sea, thick layers of sandstone and shale, with abundant remains of life from that time, were deposited.

The general uplift of the present Sangre de Cristo Mountains resulted in folding and faulting of the sediments that once covered the area. Remnants of Mississippian and Pennsylvanian rocks are preserved in the range. The younger rocks that eroded from the mountains are beneath the plains to the east and can be seen best between Las Vegas and Mora where they were turned up on end and now form the hogbacks flanking the east side of the Rocky Mountains.



WEST-EAST GEOLOGIC CROSS SECTION

Looking west from Morphy Lake, the highest point is Cebolla Mountain at 11,870 ft. North of this peak several small, bowl-shaped or amphitheatre-like reentrants occur in the ridge of Precambrian rocks. These features were formed by small mountain glaciers that developed on the east side of the ridge more than 10,000 yrs ago during Pleistocene time. The fronts of the glaciers advanced downward only a short way to an altitude of approximately 10,000 ft. The bowl-shaped reentrants are called *cirques*. The glaciers plucked out the bottoms leaving behind depressions in the rock now occupied by small lakes known as *tarns*.

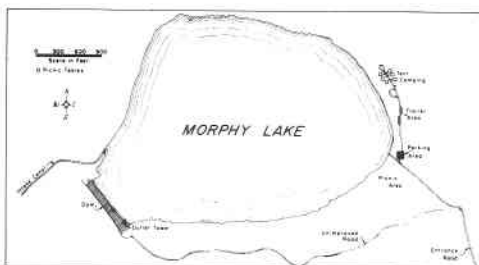
### History and surrounding area

When Mora was founded in 1835, New Mexico was part of the Republic of Mexico. The Mora grant made by the Mexican government included the present village of Ledoux. In addition to the original settlers of Spanish and Mexican descent, French trappers came into the area; in the late 1800's a small group of Irish founded the community of Cleveland just west of Mora, naming it after President Cleveland.

Numerous scenic areas are near Morphy Lake State Park. West of Mora, NM-3 crosses the Sangre de Cristo Mountains to Taos. Much of the route follows the Rio Pueblo, a beautiful mountain stream with excellent trout fishing. The high ridge west of Morphy Lake is within the Pecos Wilderness in which numerous trails lead past spectacular mountain vistas and alpine lakes and meadows. Santiago, Pacheco, and Encantado Lakes occupy cirques. Difficult to reach, they offer excellent fishing plus the exhilaration of the alpine country above timberline. North of Mora via NM-38 is Coyote Creek State Park. Easily reached, this park and the surrounding area have some of the most beautiful displays of mountain wild flowers to be seen anywhere in the Rocky Mountains.

### Facilities

Morphy Lake has been enlarged by construction of a small dam. Water comes into the lake via an intake canal near the north side of the dam. The natural drainage area is quite small, and the lake basin has a maximum storage capacity of a little more than 400 acre ft (about 130 million gal) and covers an area of about 25 acres. The State Game and Fish Department stocks the lake with rainbow trout. Tables, fireplaces, and toilet facilities are provided in the park, but drinking water is not available.



## NMBMMR photo collection

by Robert W. Eveleth, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801

Ho for the silver camps of the the Black Range! Such was the cry of the 19th century prospector and miner in territorial New Mexico. By early 1881 the buccaneer of pick and pan could, if he so desired, purchase a ticket and enjoy the first class accommodations of the Atchison, Topeka and Santa Fe Railroad, disembark at San Marcial or Engle, and procure passage on an adequate (if not luxuriously appointed) coach of the Pioneer or other stage line. "Stages (left) promptly upon the arrival of trains" for the Black Range silver camps including St. Charles, Philipsburg, Grafton, Robinson, Fairview, Roundy, Chloride, and Hermosa (Fig. 1) and went "through by daylight" in 8 to 10 hours if we can believe the advertised schedule (Fig. 2). Or, if the lucky traveler was bound for the famed silver mines of Lake Valley he could ride the rails right into town.

The reader need not feel dismayed if these place names sound unfamiliar; like stars in the heavens, these camps blazed for a time and then quickly faded with the silver crash of 1893, never to shine again. Sadly, they and the way of life briefly described above have vanished in the mists of time, although Fairview (now Winston), Chloride, and Lake Valley partially survive today. But memories live on in images such as the ones shown on the following page (Figs. 3-5), a small sampling of the more than 1,000 views in the New Mexico Bureau of Mines and Mineral Resources' photo collection.

The core of the collection consists of photos made by various Bureau engineers and geologists from the 1940's to the present, but more than a century of mining and industrial activity is represented. Some of the images have been purchased from other collections, such as the Rio Grande Historical Collection/NMSU and the Silver City Museum, and,

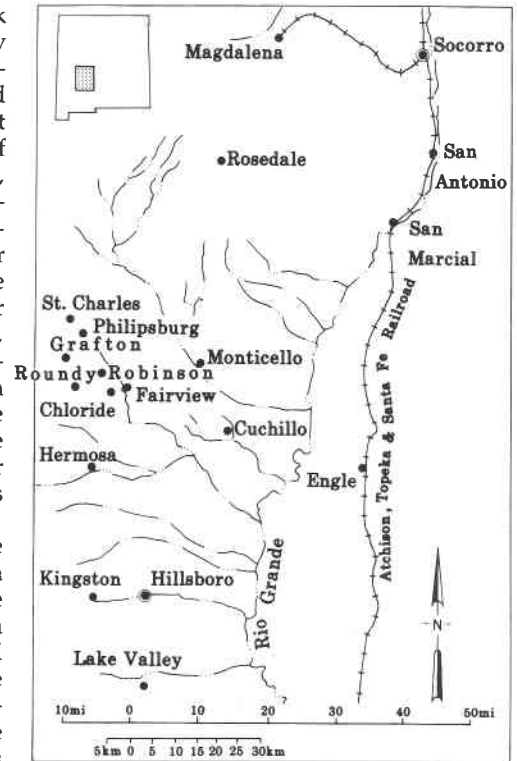


FIGURE 1—Location map of the Black Range, southwest New Mexico, and silver mining camps in that area before the silver crash of 1893.

therefore, their use may be restricted. The large majority, however, can be used freely if source credits and acknowledgments are given.

The collection was recently enhanced with the acquisition of a large group of U.S. Geological Survey photos and, most impor-

**HO FOR THE BLACK RANGE!**

**PIONEER  
Stage  
LINE!**



**PIONEER  
Stage  
LINE!**

**Makes Connections with Railroad at SAN MARCIAL, being the nearest point to the BLACK RANGE, on the line of the R. R. Sixty miles saved by taking this route.**

**THROUGH BY DAYLIGHT; TIME, 8 TO 10 HOURS.**

**KARNS & McCONKEY, Prop's.**

FIGURE 2—Advertisement for Karns & McConkey's Pioneer Stage line from San Marcial to the Black Range. Taken from *Beckwith's guide to the great mining and stock-growing district of central New Mexico*: Times Printing House, Leavenworth, Kansas, ca. 1881. Original is courtesy of Huntington Library, rare book no. 384952, p. 17.



FIGURE 3—Hermosa, New Mexico, probably before 1893. Few mining camps had a lovelier location; Hermosa, which means beautiful in Spanish, is named appropriately. Hermosa produced about \$1,500,000 worth of silver and the town was said to have “a population of 230 souls” in 1892, but they and all of the structures shown in this photograph have vanished. Today this spot is an open, grassy meadow. NMBMMR photo collection, no. 263, photographer unknown; donated by Frances Jahns in memory of Dr. Richard H. Jahns.



FIGURE 4—Lake Valley mining camp about 1890. This is one of New Mexico’s more famous mining camps primarily because of the stupendous chlorargyrite (silver chloride) ores found in the legendary “Bridal Chamber.” It, and other bonanza orebodies, yielded more than five million ounces of silver by 1893. In this photograph Santa Fe locomotive No. 47 (American Type or 4-4-0) has been turned in preparation to pick up diminutive coach No. 505 for the southbound run to Nutt where it connected with the daily Silver City–Rincon train. NMBMMR photo collection, no. 287; photographer probably Henry Schmidt; donated by Frances Jahns in memory of Dr. Richard H. Jahns.

tantly, a superb collection donated by Frances Jahns in memory of Dr. Richard (Dick) H. Jahns who passed away in December 1983. Dick is remembered fondly by those of us who are fortunate enough to have known him, but few people know that this gentleman, in addition to his more obvious scientific talents, was an accomplished photographer as well. Included in the Jahns donation are nearly 200 views of Ojo Caliente, Harding mine area, Hermosa, Iron Mountain, and Taylor Creek. Dick also was interested in historic photos, and he collected about four dozen late 19th century views of Winston, Chloride, Lake Valley, and Hermosa, which he custom printed himself. Most, if not all of these, appear to have been acquired from the Schmidt collection.

In addition to the prints, the Bureau collection contains more than 1,000 slides in four major classifications: 1) G series—general Bureau slides of mines, mills, geologic features, scenic views, and miscellaneous events; 2) H series—slide copies of historic photographs; 3) M series—slides of unusual or museum-quality New Mexico mineral species in the Bureau museum, other national and international museum collections, and private collections; and 4) A series—slide copies of various rare maps, documents, engraved scenes (woodcuts), and artifacts associated with New Mexico’s geology, mineral technology, or mining history.

The Bureau photo collection has been used for educational displays at the State Fair, various scientific conventions, and semi-permanent displays in the Bureau mineral museum and other display areas. All photographic holdings are being indexed and computerized for easy reference. Anyone interested in using the photographic collection for educational purposes, or anyone wishing to donate photographic materials (donations are tax-deductible) should contact Robert W. Eveleth, Mining Engineer, NMBMMR, room B126, Socorro, NM 87801, phone: 505/835-5325.

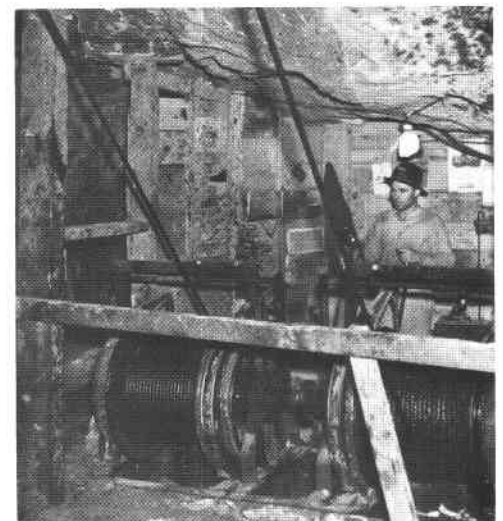


FIGURE 5—Hoistman at the underground hoist station in the Fanney mine, Mogollon, New Mexico, about 1941. NMBMMR photo collection, no. 201; photographer unknown.