Storrie Lake State Park is located 5 mi north of Las Vegas, San Miguel County, by way of NM-3. The park comprises 84 acres on the south side of the lake. Open all year, facilities include camp and picnic sites, shelters, ramp and center for boating, and playground. Sailing, motorboating, waterskiing, swimming, fishing, and hiking are enjoyed by visitors.

The lake, impounded by a 1,400-ft-long earthen dam, is part of an irrigation system that diverts water from the Gallinas River. The lake is named for Robert C. Storrie, the first contractor, who began the work in 1916.

The lake area is near a boundary that separates two great geographic provinces of the United States. Approximately 1 mi west are the foothills of the Sangre de Cristo (Blood of Christ) Mountains, the southernmost range of the Rocky Mountain province. From the Sangre de Cristo foothills to the northeast, east, and southeast stretches the Great Plains province, which includes tens of thousands of square miles of the west-central United States.

The orientation diagram gives directions and relative distances to local geological and historical landmarks. From this point, the lake is on the north side and a water fountain is on the south.

**Geology**

Although the earth is about 5 b.y. (billion years) old, the rocks contain a clear record of only the past 600 m.y. (million years). During much of that time, this part of New Mexico was repeatedly inundated by seas that deposited thick layers of sediments which are now sedimentary rocks. About 70 m.y. ago during the Tertiary Period, the entire region was lifted above sea level, and the Rocky Mountains began to form. The flat-lying rock strata underlying the Great Plains were bent upward, broken, and folded along the mountain front. This period of mountain building was accompanied by severe erosion that sculptured the mountains, exposed the more than 600-m.y.-old basement rocks, and removed several thousand feet of sedimentary rocks from the park area. As erosion continued, sand and gravel were carried from the mountains by ancient streams and deposited on the eroded surface. Remnants of this debris are still present in gravels terraces and old stream beds that cap Highland Mesa, Los Vigiles Butte, and several other mesas. These isolated remnants and the present-day topography are the result of more recent erosion that stripped away much of the Tertiary deposits as well as younger and older rocks.

Most of the bedrock in the lake area is the dark-gray Carlsile Shale (Cretaceous) and limestone that locally contains abundant marine fossils such as coiled ammonoids, brachiopods, and shark teeth. Shark Tooth Mesa was named for the fossils found there. Near the northeast end of the lake, the Carliile contains some medium-to-large (up to 3-ft diameter) limestone septarian concretions that weather out of the weaker shale and lie on the surface, resembling discarded oxcart wheels.

During the Cenozoic Era, which includes the present time, most of New Mexico was an area of widespread volcanic activity. At Storrie Lake, however, there is only slight evidence of this volcanism. On the northeast side of the lake (east of the area of concretion occurrence) are two dikes formed in vertical fractures that have been filled with molten rock material, probably during Quaternary time. These dikes are composed of a dark rock called lamprophyre, and their joints give the appearance of rock-built walls. The dikes crop out in the roadside ditch along NM-3 near the southeast edge of the lake and probably extend below the lake.

Underlying the rocks at Storrie Lake are older sedimentary rocks, several thousand feet thick, that overlie the Precambrian basement. These rocks can be seen in the mountainous areas to the west. The Dakota Sandstone is several hundred feet below the lake. Because the rocks have been folded into a sag, or syncline, the Dakota is bent upward to the west and forms the top of The Creston (the low-lying ridge approximately 2 mi west of the lake that can be recognized by its barren crest) at an elevation several hundred feet above the lake (see cross section).

Still older rocks that occur at depth below Storrie Lake are visible in roadcuts along NM-65, which crosses The Creston through Montezuma (Gallinas) Canyon. West of Montezuma, these older rocks have been folded and faulted (broken) to a high degree by mountain-building processes. Permian and Triassic conglomerates, sandstones, and shales have been folded and overturned and dip toward the west, causing the older Permian rocks to lie above the younger Triassic rocks. Farther west are still older Mississippian (?) and Pennsylvanian limestones, shales, and arkoses, which have been pushed eastward along a thrust fault, overriding the steeply dipping younger rocks.

**Plants and animals**

Plants around Storrie Lake are typical of steppe or high plains country. Dryness of the area (18 inches average rainfall per year) is exemplified by staghorn, prickly pear, and several varieties of small cylindrical cacti. Among the larger plants are sharp-spiked Yucca glauca, rabbit bush, sunflower, Russian thistle (tumbleweed), Canadian thistle, and snake-weed. Taller grasses include bushy foxtail, Indian rice, New Mexico stipa (feather grass), and sleepy grass (so named because horses get sleepy after eating it). Lower grasses include blue grama, muhly, and buffalo grass. An unusual, very low, fragrant sage grows abundantly and is easily recognized by crushing a leaf to release the fragrant scent. Among wild flowers are rose-colored phlox, wild dill, locoweed, blue verbena, copper-colored mallow, and purple penstemon.

Trees are scarce on the plains but cottonwood and juniper are indigenous. In the foothills of the Sangre de Cristos are pinyon pine, juniper, and oak. At slightly higher elevations ponderosa pine is abundant.

Harvester ants build hills in barren patches among the vegetation. Horned toads and other desert reptiles live here. Ground squirrels are moderately abundant, and an occasional deer comes down to the lake.

Many birds are visible, especially during migrations; most common are the many varieties of ducks and geese.

**History**

Here at the western edge of the Great Plains, where early migrants and traders caught their first glimpse of the imposing Rocky Mountains, the cultures of Mexico and (continued on p. 29)
<table>
<thead>
<tr>
<th>Date and operation</th>
<th>Operators and owners</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-6-80 lead, zinc, copper, gold, silver, tungsten</td>
<td>Operator—Cobb Nuclear Corporation, 313 Washington SE, Albuquerque, NM 87108; Supi.: Willie Chavez, Box 622, Magdalena, NM 88255, phone: 854-2761</td>
<td>Socorro Co.; secs. 7, 12, T. 3 S., Rgs. 3, 4 W.</td>
</tr>
<tr>
<td>6-10-80 copper</td>
<td>Operator—J. D. Dutton, Inc., P.O. Box 829, Olympia, WA 98507; Gen. Mgr.: Dave Gayman, 421 E. Main (P.O. Box 2899), Farmington, NM 87401, phone: 322-9500</td>
<td>Grant Co.; sec. 4, T. 17 S., R. 12 W.</td>
</tr>
<tr>
<td>6-24-80 potash</td>
<td>Operator—Paslay Construction, Industrial Park, P.O. Box 1137, Carlsbad, NM 88220, phone: 885-3157; Gen. Mgr.: John Paslay</td>
<td>Eddy Co.; sec. 9, T. 19 S., R. 30 E.</td>
</tr>
<tr>
<td>7-9-80 copper, molybdenum</td>
<td>Operator—Quintana Minerals Corporation, P.O. Drawer 472, Truth or Consequences, NM 87910, phone: 895-5317; Person in charge: Milton W. Hood</td>
<td>Sierra Co.; secs. 26, 35, T. 15 S., R. 7 W.</td>
</tr>
<tr>
<td>8-7-80 uranium</td>
<td>Operator—Kerr-McGee Nuclear Corp., New Mines Div., Ambrosia Lake, Grants, NM; Gen. Mgr.: Morris Worley, Kerr-McGee Center, Oklahoma City, OK, phone: 405-270-2638; Person in charge: Frank E. Peters (same address and phone as above); Others: John H. Swales, Supt., Ambrosia Lake, Grants, NM, phone: 287-8382; Scott L. Hanson, Safety Dir., 1131 Mt. Taylor, #141, Grants, NM, phone: 287-8312</td>
<td>McKinley Co.; 1 mi north of mile marker 107 on NM-53 north; sec. 17</td>
</tr>
<tr>
<td>8-7-80 lead, zinc</td>
<td>Operator—Hillside claims, Farris mines, Box 687, Grants, NM 87020; Person in charge: Jesse (Jack) Cox, same address</td>
<td>Socorro Co.; sec. 22, T. 3 S., R. 3 W.; Silver Mountain mining district; turn left at Water Canyon road, approximately 3 mi, turn right on access road Minerals: lead and zinc; federal land</td>
</tr>
<tr>
<td>8-11-80 silver, gold, copper</td>
<td>Operator—Silver Bar Mining Co., Inc., Box 97, Winston, NM; Gen. Mgr.: Ira M. Young (same address as above), phone: 336-4534, 894-2422</td>
<td>Sierra Co.; sec. 19, T. 11 S., R. 9 W.; from town of Chloride due west approximately 12 mi up Chloride Creek</td>
</tr>
<tr>
<td>8-25-80 gold</td>
<td>Operator—Sierra Blanca Milling, Box 838, Carrizozo, NM; Billy D. Thomas, 400 Hull Rd., Ruidoso, NM, phone: 257-5022; Person in charge: Michael Henson, 11th &amp; &quot;C&quot; Ave., Carrizozo, NM, phone: 648-2114; Others: Jerry Kenyon, Albuquerque, NM, phone: 292-8440</td>
<td>Lincoln Co.; north from Carrizozo on NM-54, 24 mi, Ancho turnoff, turn right, proceed 11 mi to cattleguard, turn right, go ½ mi to large trailer</td>
</tr>
<tr>
<td>8-25-80 mill</td>
<td>Operator—Chem Tech Inc., P.O. Box 86, Winston, NM 87943; Gen. Mgr.: Harold V. Killigore (same address), phone 894-3155; Others: Paul A. Killigore, David N. Killigore (same address)</td>
<td>Lincoln Co.; sec. 22, T. 10 S., R. 9 W.; NM-52 to Turkey Creek road, follow for approximately 6 mi to old town of Grafton; mill is located about ½ mi south of Grafton. Ores milled: gold, silver</td>
</tr>
<tr>
<td>8-28-80 mill</td>
<td>Operator—Sierra Blanca Milling and Processing, P.O. Box 2943, Ruidoso, NM, phone: 257-9062; Gen. Mgr.: Billy D. Thomas, same address, phone: 257-5022; Others: Michael Henson, Box 838, Carrizozo, NM, phone: 648-2114</td>
<td>McKinley Co.; sections 17, 15 N., R. 12 W.; Jicarilla mining district; Custom milling: no. Ores milled: placer gravels</td>
</tr>
</tbody>
</table>

**Field study tours, Desert soil-geomorphology project**

Field study tours will be held in October 1981 at the Desert Soil-Geomorphology Project Area in southern New Mexico. This project, informally termed the Desert Project, refers to a study of soil and landscape evolution conducted by the Soil Conservation Service from 1957 to 1972. Research at the Desert Project, which encompasses a 400-sq-mi area astride the Rio Grande valley, was carried out in cooperation with the Agricultural Experiment Station and the Department of Agronomy at New Mexico State University in Las Cruces.

Two 4-day study sessions, for 40 participants each, will be held during the weeks of October 12-16 and 19-23, 1981. Each session will start with registration and orientation lectures from 2-5 p.m. on Monday and will end Friday noon. Field study tours will be held from 8:00 a.m. to 5:00 p.m. Tuesday, Wednesday, Thursday, and Friday, and from 8:00 a.m. to 12 noon on Friday. The studies will be conducted at 22 Desert Project study sites where detailed soil-geomorphic investigations have been carried out.

Fundamentals in soil classification, soil morphology, soil genesis, and soil-geomorphic relations as they pertain to arid and semiarid regions will be stressed. Soils of a number of great groups in the Entisols, Aridisols, Mollisols, and Vertisols will be studied in the field. They will be illustrated in large trenches and arroyo exposures, some of which extend through several kinds of soils and illustrate soil boundaries. Diagnostic horizons of the new classification system will be emphasized. A new Desert Project Guidebook is being prepared for these and subsequent study tours. The tours will be led by Leland H. Gile and John W. Hawley.

A list of accommodations and rates will be furnished so that participants can make their own housing arrangements. Estimated fees, including box lunches, drinks, transportation, and the guidebook, will be approximately $50.00 per student and $100.00 per professional; additional copies of the guidebook may be obtained at $25.00 each. Those wishing to register for one of these sessions should contact Dr. John W. Hawley, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801.
south through the present-day Las Vegas area and turned west through the southern foothills of the Sangre de Cristo Mountains. The trail went through two passes in The Creston, Puerto del Norte and Puerto del Sur (the North and South Gateways, now traversed by NM-283 and US-84-US-85, respectively).

Las Vegas (the Meadows), originally Nuestra Señora de los Dolores de Las Vegas (Our Lady of Sorrows of the Meadows), was not settled until 1833, principally because the site was vulnerable to Indian attack. Once established, the town prospered from the trade brought in through the trail.

During the Mexican War, General Stephen W. Kearny invaded New Mexico to occupy the land for the United States. He arrived in Las Vegas on August 15, 1846, and there officially proclaimed that “all lands formerly in the northern provinces of Mexico are now part of the United States of America.” He then moved on to Santa Fe and passed through Puerto del Norte (also known as Kearny’s Gap) approximately ½ mi south of Kearny’s Knob, a small prominence that rises slightly above the foothills of the Sangre de Cristos.

The arrival of the Americans stimulated migration and trade on the Santa Fe Trail and brought prosperity to the young town. After the Santa Fe Railway replaced the trail in 1879, commerce increased to such a degree that Las Vegas became one of the larger cities in the New Mexico Territory (which included Arizona at that time).

About 17 mi northeast of Storrie Lake are the ruins of Fort Union (1850–1880). The only significant Civil War campaign in New Mexico was waged by the Confederates, whose goal was to capture this fort and gain access to the Colorado gold fields. In 1862 a force of Texas Volunteers swept up the Rio Grande valley and captured all settlements as far north as Santa Fe. The Texans moved east and were met at Apache Canyon, approximately 17 mi from Santa Fe, by a combined force of Colorado Volunteers and Army regulars from Fort Union. The Colorado Volunteers destroyed the Texas’s supply train and forced them to withdraw, thus ending hostilities in the Territory for the remainder of the war.

During its rapid growth, Las Vegas became a typical wild-west town, with hellions like Billy the Kid, Bat Masterson, and Doc Holliday drifting through ahead of the slow advance of law and order.

More peaceful days followed. The area was the setting for at least two silent films in the early 1900’s, one starring Tom Mix, and several modern films in the last decade, including Billy the Kid, Bat Masterson, and Doc Holliday. The Texan’s supply train and forced them to withdraw, thus ending hostilities in the Territory for the remainder of the war.

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More peaceful days followed. The area was the setting for at least two silent films in the early 1900’s, one starring Tom Mix, and several modern films in the last decade, including The Evil which starred Richard Crenna and was set in Montezuma. The Storrie Lake Irrigation Project helped produce excellent vegetable crops that were shipped throughout the nation between 1922 and 1945. Subsequently, lack of adequate water forced abandonment of vegetable farming. The area is now primarily cattle country and the lake is used to irrigate grain fields used for duck and geese feed on the Las Vegas National Wildlife Refuge.

—Waldemere Bejnar (revised 1980)