

Prehistoric Native American Responses to Ancient Lake Cahuilla

It is difficult to imagine that the Imperial and Coachella Valleys, in one of the hottest and driest deserts in North America, once contained an enormous lake teeming with fish and wildlife. But this happened repeatedly over the millennia and each time the lake formed, the Native population responded. Prior to dam construction on the Colorado River, the slower flow of the river meanderings resulted in the deposition of a great deal of sediment in the lower channels of the delta. Accumulating silts raised the overall height of the delta and lowered stream channel margins to form a dam. River channels near the delta crest occasionally broke through their natural levees and the full flow of the river poured down the steeper northern slope of the delta into the low-lying Salton Trough. During large flood events, extensive head cutting and enlargement of the channel prevented the Colorado River from reestablishing a route back through the newly reworked surface of the delta. It happened at least four times in the last 1300 years. The Salton Trough filled with water in about 18 years, it is estimated, to form the largest freshwater lake in California. At its maximum, it was 110 miles long, 32 miles wide, and more than 300 feet deep at the center, three times the area and six times the depth of the present Salton Sea.

The lake in all its phases has been alternately referred to as the Blake Sea, Lake LeConte, or Lake Cahuilla. William P. Blake was among the first Americans to recognize the significance of the dramatic marks Lake Cahuilla left on the landscape. As geologist for the 1853 U.S. Government exploration of a potential transcontinental railroad route, he documented several significant phenomena for the expedition's scientific report. Fresh water mollusk shells littered the now dry lakebed. Extensive beach formations at 42 ft. above sea level marked the maximum shoreline and also the height of the delta that acted as a dam. Wherever the lake reached the slopes of the Fish Creek or Santa Rosa Mountains, it left calcium carbonate deposits called travertine. The unmistakable line at the maximum shoreline could be seen from miles away. The local Cahuilla Indians' oral history as told to expedition leaders confirmed Blake's observations:

When questioned about the shoreline and watermarks of the ancient lake, the chief gave an account of a tradition they have of a *great water (agua grande)*, which covered the whole valley and was filled with fine fish. There was (sic) also plenty of geese and ducks. Their fathers lived in the mountains and used to come down to the lake to fish and hunt. The water gradually subsided "*poco*" a "*poco*," (little by little,) and their villages were moved down from the mountains, into the valley it had left. They also said that the waters once returned very suddenly and overwhelmed many of their people and drove the rest back to the mountains (Blake 1857:98).

Eventually the Colorado River found its natural course through the delta again and the lake waters gradually receded from evaporation. This process is estimated to take up to 60 years if no new water recharged the lake. Radiocarbon dates from marsh deposits and archaeological sites around the lake indicate from three to four major infillings over the last 1300 years, each lasting for up to several hundred years. Recent finds also indicate much earlier phases extending well over 2,000 years ago. The chronology of Lake Cahuilla's most recent phases continues to be refined with new archaeological investigations. Current data, including 85 radiocarbon dates, indicate a complete filling in the 13th century A.D., a recession in the late 14th or early 15th century, another infilling in the 15th century, a recession in the late 15th or early 16th century, and a final filling in the 17th century followed by the last recession that ended soon after A.D. 1700. There were also partial infillings and many fluctuations in lake levels over time.

Archaeological surveys along the relic shoreline have documented hundreds of sites varying in size, complexity, and topographic associations. House pits, hearths, trash middens, and artifact scatters mark the areas of human occupation. Especially favored locations include places where sand bars and landforms created resource-rich marshy coves and embayments, or where creeks or washes ran into the lake. Some of the largest population centers were at the north end of the lake where it met the Whitewater River. Some of these sites might be long-term village locations. Most other areas appear to have supported dispersed seasonal temporary camps. This was especially true along the eastern side of the lake where a wide expanse of barren desert separated the lake from the Colorado River. Proximity to land resources was also important and many sites have been recorded where alkali pans and mesquite-covered sand dunes bordered the lake. Fishing camps occur wherever alluvial fans gave access to the lake through the mountains. The gently sloping surfaces near the toe of each fan were often favored for the construction of stone fish traps in the shallow waters. Their precise method of operation remains a mystery but it is suggested that Indians exploited natural fish behavior to enter rocky enclosures when startled or during spawning. Parallel lines of these V-shaped structures and round pits follow the lakeshore contours where Indians built new lines of traps as the waters receded. With increasing lower elevations, lines of successively later fish camps and habitation sites remain as they followed the receding shoreline until water salinity reached intolerable levels.

Archaeological excavations at a select number of sites have yielded abundant fish bone from at least four species native to the Colorado River and Gulf of California. Two of the most common, razorback sucker and bonytail chub, are now rare or

endangered. Among the most exploited of birds was the coot or mud hen, probably hunted with nets, bows and arrows. Commonly occurring mammals include black-tailed jackrabbit and Audubon cottontail, while bighorn sheep and deer were occasionally hunted. Carbonized remains and pollen of dozens of plant species attest to the diversity of seasonally available plants. Among the most important from the marshes were bulrush and cattail. The desert provided mesquite pods, saltbush, seepweed, and other chenopods.

Archaeological sites contain a variety of remains from everyday life. Local clays were fashioned into ceramic jars, cooking pots, bowls, parching trays, spoons, tobacco pipes, figurines, and rattles. Stone for making tools came from a variety of sources, some obtained from miles away. Past volcanic activity in this active zone of earthquakes and hot springs provided several sources of raw material for tools. Among the most valued was obsidian glass from Obsidian Butte, but it lay under Lake Cahuilla's waters and could only be accessed during recessional phases. Two sources of a fine silicified volcanic tuff called Wonderstone were also widely distributed around the shoreline. Pumice stone found floating in Lake Cahuilla was used to make abraders. Outcrops of sandstone were fashioned into milling slabs and hand stones. Shell for making beads and ornaments came from as far away as the Gulf of California and Pacific Ocean.

Opinions differ on the effects of the lake's desiccation. Some argue that it caused major population shifts by large and permanent shoreline populations to the mountains on the west and the Colorado River to the east. Increased competition for resources may have caused increased conflicts in some areas and intensified exploitation of certain upland resources such as the sweet and nutritious agave plant. Others argue that Lake Cahuilla was principally occupied by small mobile groups on a seasonal basis because the shoreline habitats were unstable due to seasonal fluctuations in lake levels. During periods when the basin was dry, these groups merely rescheduled their seasonal rounds to include new resources on the exposed lakebed or elsewhere.