

INTRODUCTION TO RECENT ARCHAEOLOGICAL INVESTIGATIONS AT THE SALTON SEA TEST BASE, IMPERIAL COUNTY, CALIFORNIA

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ABSTRACT

Evidence from archaeological investigations associated with the Navy's base closure and clean-up activities at the Salton Sea Test Base indicate that it wasn't very long ago that aboriginal peoples were fishing and camping along the receding shoreline of Lake Cahuilla. These investigations revealed a number of features constructed out of the local sandstone, along with ceramics, groundstone, flaked lithics, and fish bone. While most of the archaeological material appears to be associated with late period fishing camps, there are limited indications that the time span of human activity extends into the Archaic and Paleoindian Periods. As an introduction to these recent investigations, this paper will focus on the background and setting of the study, with more detailed presentations of results provided in subsequent portions of the symposium.

INTRODUCTION

This paper is an introduction to recent archaeological investigations conducted along the former shoreline on the southwestern side of ancient Lake Cahuilla. More detailed results of the research will be provided in subsequent papers in this symposium.

Between 1994 and 1997, archaeological studies were conducted at the Salton Sea Test Base in Imperial County, California. The base was owned by the U.S. Navy and had been slated for closure and disposal by Base Realignment and Closure (BRAC). This process included an ordnance removal program. Southwest Division of the Naval Facilities Engineering Command (SWDIV) contracted with KEA Environmental, Inc. (KEA) to provide archaeological studies in order to identify sites that were eligible for the National Register of Historic Places and, under a Memorandum of Agreement, to assist in documenting and minimizing effects to these sites from activities associated with the base closure.

The project included contacts with local Native American communities, local archaeologists, and other interested citizens. Project participants included Clarence Brown, a Kumeyaay from

Viejas, George Auclair, a Cahuilla from the Torres Martinez Reservation and Frank Salazar, a Kumeyaay from the Campo Reservation. To provide the community with pertinent information on the project, an evening presentation was given at a local Restoration Advisory Board meeting in Salton City.

Located in western Imperial County, west of State Route 86, the non-submerged portion of the base encompasses some 10 square miles along what is now the western shore of the Salton Sea. Although the Salton Sea is the result of a modern engineering accident, it fills the lowest portion of an ancient basin that has filled and dried up numerous times.

One can get some feel for the impact that such a large body of water had on the local aboriginal inhabitants based on a quote provided by an early visitor to the area. William Phipps Blake, a geologist with a railroad survey party in 1853, is reported to have received this answer when he asked a local Cahuilla about the ancient lake:

When questioned about the shore-line and water marks 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 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,' 'poco' (little by little), and their villages moved down from the mountains, and 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 mountains (Blake 1856:98 quoted in Wilke 1978:8).

SETTING

The environment was important to aboriginal inhabitants of the project area. Despite the presence of a lake, the region is very arid. The Salton Sea Test Base is located in the Salton Trough in northwestern Imperial County, some 40 miles north of El Centro. The base is situated on the southwestern shore of the Salton Sea at an elevation between approximately 20 and 230 feet below sea level. Vegetation is generally sparse and consists of scattered creosote and saltbush. The environment of this area, and the Colorado Desert in general, is extreme. Fresh water is scarce. Low precipitation and high temperatures combine to create high evaporation rates. Considerable knowledge and skill were required to survive in such an environment.

The Salton Trough is a large basin that extends about 130 miles northwest of the Gulf of California. On the south, the trough is separated from the gulf by a roughly 11 m or 36-foot high delta. The Salton Trough evolved during the late Cenozoic as a result of the tectonic forces that continue to separate the Baja California peninsula from mainland Mexico. These forces are manifested by numerous fault systems (including the San Andreas Fault) that run lengthwise through the valley. Marine transgressions during the Miocene and Pliocene epochs resulted in underlying marine sedimentary formations. The major geologic units found on the surface of the Salton Sea Test Base include exposures of the Brawley Formation, lake deposits, recent alluvium and recent sand dunes. The many sandstone

outcrops within the Salton Sea Test Base appear to represent exposures of the Brawley Formation.

Periodic diversion of the Colorado River into the Salton Trough has dramatically affected the region's biota. Prior to modern flood control measures, this diversion apparently occurred when meandering channels along the north side of the river's delta occasionally cut through their natural levees and flowed north instead of southwest into the Gulf of California. Once initiated, there was little to stop the flow until the entire basin filled to a level of 40 feet (12 m) above sea level, at which point the lake began to overflow the delta and flow back into the gulf. Eventually the channels would meander back to the south and the lake would begin to evaporate (Waters 1980,1983).

The last such diversion of the Colorado River into the Salton Basin occurred in 1905. Large floods overran temporary flood control gates constructed during the development of irrigation canals for the Imperial Valley. Until massive engineering efforts redirected the river in 1907, it flowed into the basin forming the Salton Sea. It began to evaporate and drop in elevation until the early 1920s, when agricultural runoff overtook the loss due to evaporation.

A number of researchers have focused on the periodic formation of the earlier lake stands. Data pertaining to these infillings come primarily from paleohydrological studies of the Salton Trough (Waters 1980, 1983; D. Weide 1976; Wilke 1978). A number of Pleistocene lake stands are believed to have occurred (Waters 1980) and three to four Late Holocene stands are reported (Wilke 1978; Waters 1980, 1983) with a fifth more recent stand suggested by Schaefer (1986, 1994) and Laylander (1994).

In addition to the presence of the lake, how it receded is pertinent to the current investigations. As Wilke (1978) discussed, the annual evaporation from Lake Cahuilla can be estimated based on the evaporation rate determined for the Salton Sea. Evaporation rates of 5.7 to 5.9 feet annually have been derived. This is supported by data from the USGS regarding the initial drop in water level of the Salton Sea.

ARCHAEOLOGICAL SITES

Turning to investigations at the Salton Sea Test Base, the initial research included a records search that indicated little survey work had been conducted in the area, and that few cultural resources had been recorded. While clusters of fish traps and habitation areas were known to occur along the high shoreline of former Lake Cahuilla (e.g., Gallegos 1980; McCown 1964; Von Werlhof 1996), much less was known about archaeological sites at the lower elevations.

An intensive pedestrian survey of the Salton Sea Test Base was undertaken, encompassing approximately 10 square miles. After the survey, a testing plan was prepared to guide the evaluation phase of the investigations. Research domains included chronology, technology, and settlement and subsistence.

The National Register evaluation of the sites focused on identifying periods of activity and links to lacustrine resources. However, issues of mobility, cultural affiliation and trade were also addressed. In all, 164 isolated finds and 170 archaeological sites were identified. While none of the isolated finds were found to be eligible resources, 91 of the sites were eligible for the National Register. Most of the eligible sites are located within the Southwest Lake Cahuilla Recessional Shoreline Archaeological District.

A National Register nomination form was completed for the district, which encompasses much of the northern portion of the facility. The topographic focal point of the district is a long low sandstone covered ridge that extends north through the district, roughly paralleling the present shoreline of the Salton Sea. While the Salton Sea is the result of modern infilling, it provides much the same visual setting that would have been present during the very low level prehistoric lake stands of Lake Cahuilla.

The sites identified at the SSTB can typically be described under one of 3 main categories of activity: extraction, processing, or habitation. Approximately 21% of the sites were categorized

as extraction locales. These were primarily opportunistic lithic reduction areas, for exploiting local cobbles. Subsurface components were not identified at this class of resource. Another 30% of the sites exhibited evidence of efforts to make the available resources more usable, less perishable, or more portable. Examples include sites with milling or ceramics, as well as lithic scatters with evidence of later stage reduction and/or some tool production. Only minor subsurface deposits were observed at some of these sites. The majority of sites were classified as habitation areas, based on the presence of some or all of the following: artifact assemblages with later stage reduction and/or tool manufacture or reworking, hearths and charcoal, and faunal remains. Artifacts and/or faunal material were found in association with most of the rock enclosures (81%). The depth and extent of the subsurface components varied, with some sites exhibiting a very ephemeral deposit, while other sites had enclosures that contained cultural material to a depth of more than 50 cm.

RESEARCH ISSUES

In summary, based on data collected during the investigations, the project team was able to address a number of research issues. Although not wanting to usurp findings of the presentations to follow, it can be reported that evidence of human activity was found covering a broad time span, ranging from the Paleoindian to the Protohistoric Periods. Technological investigations regarding ceramics and lithic assemblages indicate use of local materials, as well as the transport of exotics into the region. Most interesting, perhaps, is the way the investigations revealed the activities of the aboriginal people who camped along the receding shoreline of Lake Cahuilla. Indications are that the most recent occupants in this area were temporary visitors to the shoreline, focusing on fish resources. Subsequent presenters will elaborate on these topics, providing a more complete understanding of the complex elements of the prehistoric lifeways on the southwestern shore of Lake Cahuilla.

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