

Notes on the Late Prehistoric Extension of the Range for the Muskrat (*Ondatra zibethicus*) along the Ancient Shoreline of Lake Cahuilla, Coachella Valley, Riverside County, California

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In 1990, a series of archaeological excavations was conducted by the Archaeological Research Unit (ARU), University of California, as part of environmental assessments prepared in anticipation of several proposed development projects in La Quinta, California. La Quinta, located in the northwestern Coachella Valley, is 24 km (15 miles) southwest of Palm Springs in central Riverside County (Fig. 1). Three archaeological sites in La Quinta, CA-RIV-3682, CA-RIV-3144 and CA-RIV-1182, yielded collections of subfossil vertebrate remains (interpreted as food refuse) in addition to an array of cultural materials. These three archaeological sites, as well as many others in the region, are believed to represent small fishing/lacustrine resource gathering encampments located along the shore of prehistoric Lake Cahuilla (also known as Lake LaConte; see Wilke 1978). This lake filled the Salton Basin up to the Coachella Valley at various times until the latter part of the sixteenth century (Weide 1976; Wilke 1978; Figure 1). At maximum fill, Lake Cahuilla was a veritable inland sea with an estimated surface area of 1,256,550 acres (Weide 1976). The three prehistoric sites and associated subfossil assemblages are thought to date to A.D. 1300 to 1500 based on several radiometric analyses of fire-hearth samples (Arkush 1990; Yohe 1990), a period that represents the last stand of Lake Cahuilla.

The analysis of the vertebrate faunal assemblages from the three archaeological localities (conducted by the author) revealed a wide range of aquatic and terrestrial taxa, the former confined to CA-RIV-3682. A summary of taxa identified at the sites include several species of freshwater fishes (*Xyrauchen texanus*, *Gila* spp., *Mugil cephalus*, *Ptychocheilus lucius*, *Elops affinis*), reptiles (*Gopherus agassizi*, *Dipsosaurus dorsalis*, *Sceloperus* sp., *Crotalus* sp.) some birds (*Fulica americana*, cf. *Anas acuta*, Passeriformes), and numerous mammals, with the Audubon cottontail (*Sylvilagus audubonii*) and woodrat (*Neotoma* sp.) dominating the mammalian assemblage (Yohe 1990). Of particular interest among the mammals at these three sites are the remains of muskrat (*Ondatra zibethicus*). This is significant since the present range for this species is 130 km southeast of La Quinta (Cockrum 1960; Grinnell et al. 1937; Ingles 1965; Willner et al. 1980). At all three sites the *Ondatra* skeletal elements are rare, consisting of isolated mandibular and maxillary molars (n = 8; CA-RIV-3682), assorted postcrania (1 ulna, 1 radius, 1 metapodial, 2 phalanges [CA-RIV-3144]); and a partial rostrum and palate with complete molar series identified from CA-RIV-1182 (Arkush 1990).

In historic times, the range of the closest extant subspecies of *Ondatra*, the Colorado muskrat (*Ondatra zibethicus bernardi*), has been both sides of the Colorado River and the New River to the south (Cockrum 1960; Grinnell et al. 1937;

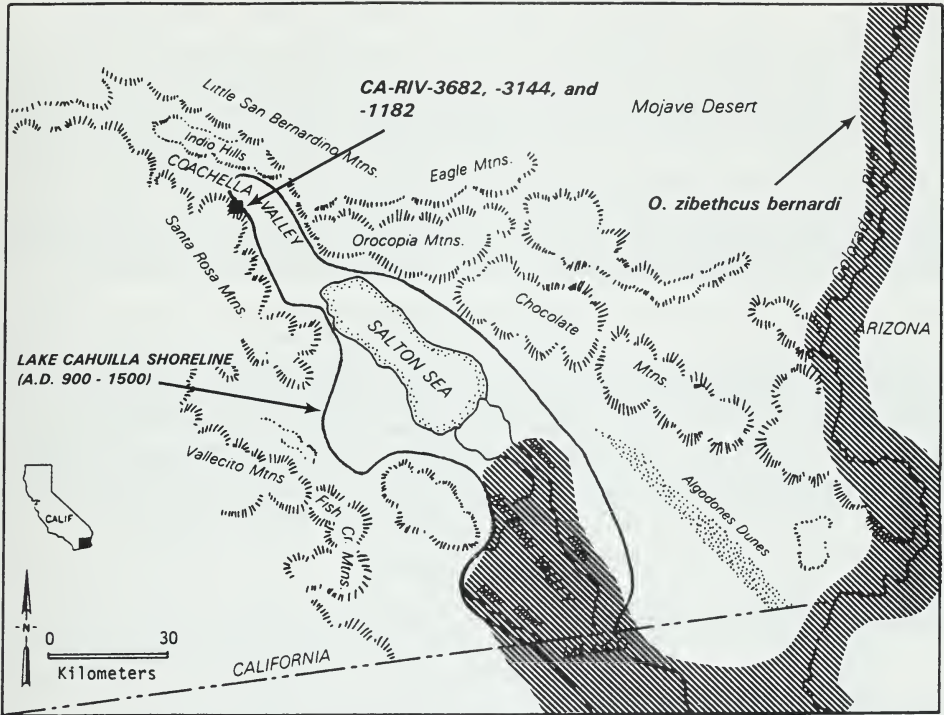


Fig. 1. Regional map of the Salton Basin and Coachella Valley, California with general locations of archaeological sites discussed in text. Dark outline represents the approximate shoreline of prehistoric Lake Cahuilla, stippling represents the current range for *Ondatra zibethicus*.

Ingles 1965; Willner et al. 1980). It is also found along irrigation canals and sloughs in the south end of the Imperial Valley. Prized for their pelts, the Colorado muskrat was hunted and trapped extensively in the southern Imperial Valley in the earlier part of the 20th century where it occurred in large numbers (Grinnell et al. 1937). According to Grinnell et al. (1937), approximately 25,000 muskrats were trapped in the Imperial Valley alone between 1919 and 1920.

The presence of late prehistoric muskrat remains in the northwestern Coachella Valley places this genus more than 100 km north of its present accepted range. Late Pleistocene/Early Holocene *Ondatra* fossils have been discovered in the eastern Salton Basin near East Mesa (Reynolds 1989), but no other paleontological occurrences in southeastern California have been reported. *Ondatra* fossils are rare in California. The only other known occurrence is a single femur from Costeau Pit (Rancholabrean-age) in the Los Angeles Basin (Miller 1971). Archaeological occurrences of the muskrat from southern California also are rare; a few *Ondatra* specimens have been recovered from San Joaquin Marsh in Newport Bay at CA-Ora-119 and -193, where they were found in both cultural and natural deposits ranging in age from ca. 6000 to 750 B.P. (Langenwalter 1986).

The course of the Colorado River, which has been naturally diverted on numerous occasions over the past several thousands of years to produce an inland sea in the Salton Basin (Wilke 1978), has provided an environmental setting

attractive to various lacustrine vertebrates in the past. The archaeological sites containing the *Ondatra* remains all appear to correspond temporally with the last stand of Lake Cahuilla (A.D. 900–1500; Wilke 1978). Muskrat remains occurring in the faunal assemblages of archaeological sites associated with ancient Lake Cahuilla suggest that these animals once frequented the cattail marshes (which were clearly present based on paleobotanical studies of human coprolite contents from numerous archaeological sites along the shoreline [see Wilke 1978; Farrell 1988]) on the northwest end of the lake, and were a source of food and possibly pelts for the prehistoric occupants of the region more than 500 years ago.

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