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NATIVE STATUS OF SACRAMENTO PERCH (*ARCHOPLITES INTERRUPTUS*) IN ALAMEDA CREEK, ALAMEDA COUNTY, CALIFORNIA: EVIDENCE FROM ARCHAEOLOGICAL SITE CA-ALA-483

Documenting the native ranges of freshwater fishes becomes increasingly difficult (sometimes impossible) as aquatic habitats are altered for flood control, agriculture and urban development. Leidy (1984) summarized the surveys of fishes made in the Alameda Creek drainage of the eastern San Francisco Bay, California, between 1905 and 1981. No Sacramento perch, *Archoplites interruptus*, were collected in the drainage prior to 1953. Their occurrence has been considered the result of introductions to Calaveras Reservoir sometime after its construction in 1924 (Aceituno et al. 1976). This assessment is surprising because Sacramento perch are native to the Sacramento-San Joaquin system freshwater fish complex (Hopkirk 1973, Moyle 1976). Because Alameda Creek is within the system, Sacramento perch were undoubtedly present. Though today saltwater in the San Francisco Bay acts as a barrier to dispersal of freshwater fishes from one freshwater tributary of the Bay to another, Evermann and Clark (1931) noted records (1854-1862) of fishes of the Sacramento-San Joaquin complex, including Sacramento perch, in San Francisco Bay following unusually heavy floods. Sacramento perch also have unusually high tolerance to salinity which would promote their survival and ability to disperse. Consequently one would expect records to show Sacramento perch in Alameda Creek prior to 1953.

In the Salinas River where the native status of the Sacramento perch was questioned by Hubbs (1947), the findings of this native sunfish among the remains at archaeological sites CA-MNT-233 (Mission La Soledad Cemetery) (Follett 1972; Salls 1989) and CA-MNT-229 (Elkhorn Slough) (Gobalet 1990) have helped document its status as a native.

Fish remains recovered during the excavation of archaeological site CA-ALA-483 located along Arroyo de la Laguna, a tributary of Alameda Creek (Fig. 1) have provided evidence for establishing the Sacramento perch as a native in the drainage. CA-ALA-483 is in the town of Pleasanton, west of the intersection of Interstate 680 and Bernal Avenue. This site was excavated in late 1989 by Basin Research Associates, Inc. of San Leandro, California. Soil was removed by hand and backhoe and washed through 1/8 in. mesh screens with a fire hose. Only vertebrae were recovered (Table 1). Identifications were made by comparison with specimens at California State University, Bakersfield.

This fauna is quite similar to that of the Stone Lake archaeological site (CA-SAC-145) in the Sacramento River Delta where Schulz and Simons (1973) found 51% Sacramento perch, 39% minnows (Cyprinidae: thicktail chub, Sacramento blackfish, hitch, splittail), 6% sucker, *Catostomus occidentalis*, and 1% tule

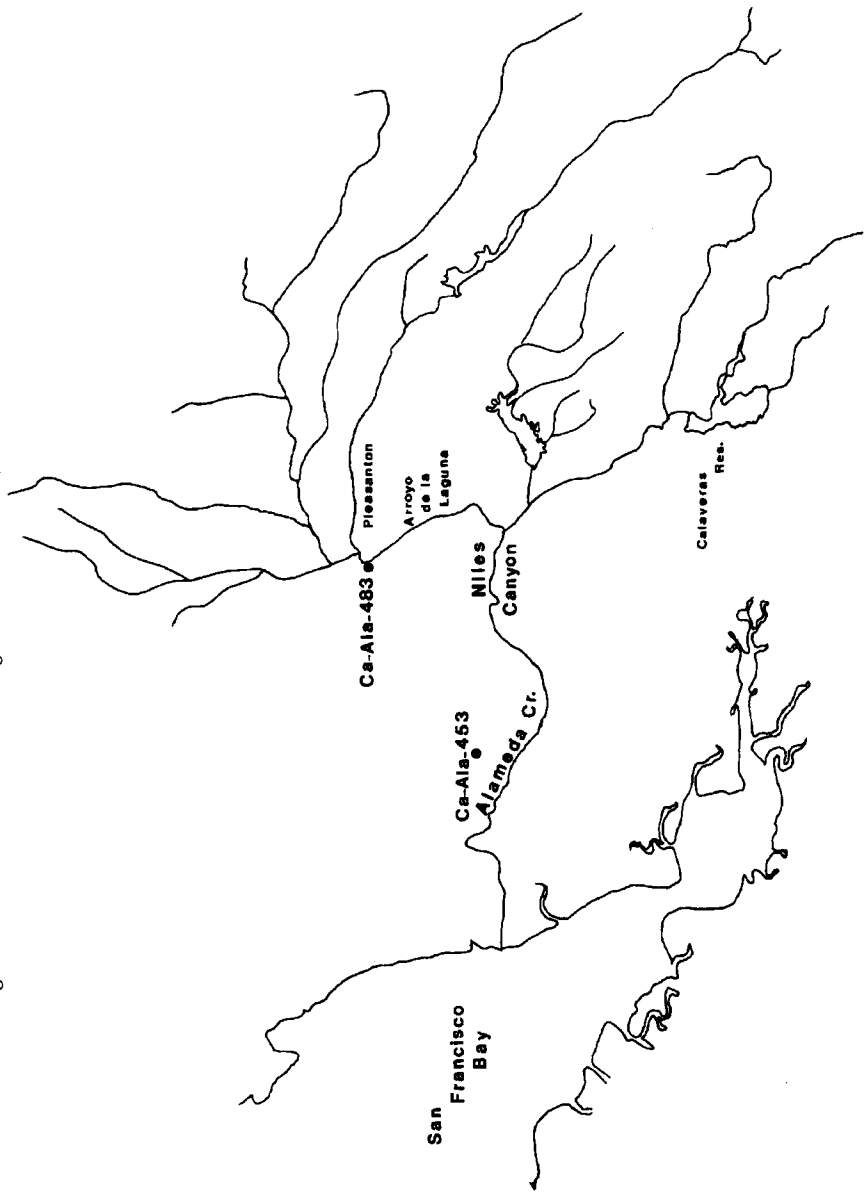

FIGURE 1. Location of archaelogical site CA-ALA-483 in the drainage of Alameda Creek, Alameda Co., California.

Table 1. Summary of Fish Remains Recovered During Excavation of CA-Ala-483.

Common name	Scientific name	Number of vertebrae
Sacramento perch	*Archoplites interruptus*	230
Minnows	Cyprinidae	133
Sacramento sucker	*Catostomus occidentalis*	24
Tule perch	*Hysterocarpus traskii*	6
Undetermined bony fish		33
Total		426

perch, *Hysterocarpus traskii*. Differential preservation certainly influences these percentages. The habitat favored by this fish assemblage was slow moving rivers, marshes, sloughs and lowland lakes (Moyle 1976). Willow Marsh adjacent to CA-ALA-483 had such an environment at least until 1878 (Thompson and West map 1878). The entire marsh has since been reclaimed and developed, a trend that has left less than 4% of the original riparian wetland statewide (Nature Conservancy 1987). Radiocarbon dates and artifacts indicate the extended occupation of the site beginning at least 1465 B.C. and confirm the prehistoric presence of Sacramento perch in the drainage. Additional corroborative evidence was provided by P. D. Schulz (Calif. Dept. Parks and Recreation, pers. comm.) who found two Sacramento perch bones from another archaeological site in the Alameda Creek drainage (CA-ALA-483 in Union City) (Fig. 1). The deposits from which they have been recovered are dated between A.D. 1 and A.D. 600.

Characters distinguishing the vertebrae of minnows are subtle and often tentative. Remains of all four lowland cyprinids may be present among the 133 vertebrae: splittail (*Pogonichthys macrolepidotus*), thicktail chub (*Gila crassicauda*), Sacramento blackfish (*Orthodon microlepidotus*), and hitch (*Lavinia exilicauda*). If confirmed with diagnostic elements, this would document the presence of the extinct thicktail chub and rare splittail in Alameda Creek along with Sacramento perch.

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