D.1 - Paleontological Resources Review

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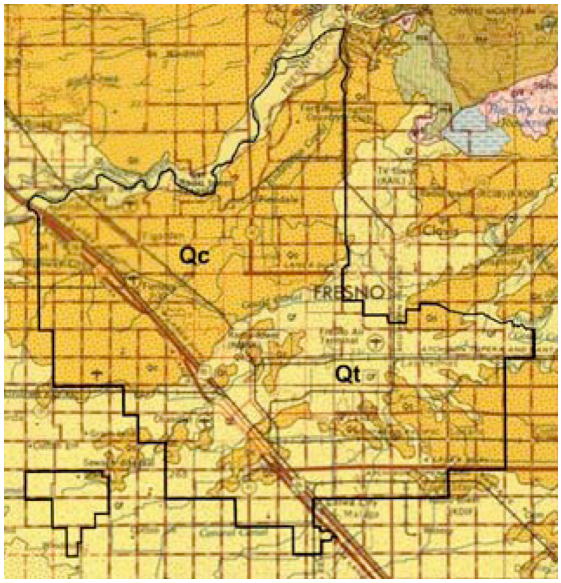
Re: Paleontological Records Search for the City of Fresno General Plan and Development Code Update, Fresno County, California (MBA Project #31680016)

Dear Michael:

As per your request, I have conducted a thorough search of the University of California Museum of Paleontology (UCMP) vertebrate paleontology database for the City of Fresno General Plan and Development Code Update project. The geologic maps of Matthews and Burnett (1965), Page and LeBlanc (1969), and Marchand and Allwardt (1978) indicate that the entire area of concern consists of Quaternary alluvium. The portion of the Matthews and Burnett (1965) map shown here with the project area outlined differentiates surficial deposits as Pleistocene nonmarine (Qc, orange areas) and Quaternary nonmarine terrace (Qt, yellow areas). These two units are basically Pleistocene and undifferentiated Pleistocene-Holocene alluvial sediments, respectively. The late Pleistocene sediments have more recently been referred to the Riverbank Formation.



The UCMP database records three Pleistocene localities (V4401, V65100, and V81121) in Fresno County, all of which yielded elements of the Rancholabrean (late Pleistocene) fauna. V4401 ("Tranquility") accounts for 149 of the 151 specimens. Numerous specimens have been have been published, several of which are types for their species. The recovered faunal assemblage includes pond turtle (*Clemmys marmorata*, rattlesnake (*Crotalus*), loon (*Gavia*), broad-footed mole (*Scapanus latimanus*), jackrabbit (*Lepus*), vole (*Microtus*), wood rat (*Neotoma*), pocket gopher (*Thomomys*), badger (*Taxidea*), grey fox (*Urocyon*), true fox (*Vulpes*), coyote (*Canis latrans*), horse (*Equus*), bison (*Bison*), elk (*Cervus*), and mule deer (*Odocoileus*). Among these are type specimens of *Clemmys marmorata*, *Scapanus latimanus*, and *Canis latrans* that have been documented in scientific publication.

All undisturbed alluvium in the surface and subsurface of the target area have the potential of containing vertebrate fossils; therefore, any excavations of these deposits have the potential of impacting significant paleontological resources. This potential, however, is low because vertebrate fossils occurrences in alluvium tend to be spottily distributed, primarily in pointbar and floodplain deposits. Nevertheless, all Pleistocene alluvium should be considered as having a high paleontological sensitivity.

In accordance with CEQA guidelines, paleontological mitigation measures will be needed on all projects that involve excavations of previously undisturbed deposits. Pre-construction surveys by a professional paleontologist are recommended for those future project areas that include undisturbed terrain, especially where an alluvial section has been exposed by stream dissection. It would also be prudent to have a qualified cultural resources specialist monitor all project-related excavations. If any vertebrate fossils or potentially significant finds (e.g., numerous well-preserved invertebrate or plant fossils) are discovered by anyone working on a construction site, all activities in the immediate vicinity of the find are to cease until a qualified paleontologist evaluates the find for its scientific value. Paleontological resources deemed significant will be efficiently salvaged for deposition in an accredited and permanent scientific institution (e.g., UCMP) where they can be properly curated and preserved for the benefit of current and future generations.

If I can be of further assistance on this project, please do not hesitate to contact me.

Sincerely,

References Cited

Marchand, D.E, and Allwardt, A., 1978, Preliminary geologic map showing Quaternary deposits of the northeastern San Joaquin Valley, California. U.S. Geological Survey, Miscellaneous Field Studies Map MF-945, scale 1:125,000.

Matthews, R.A., and Burnett, J.L., 1965, Geologic map of California, Fresno sheet. Olaf P. Jenkins edition. Scale 1:250,000. California Division of Mines and Geology. Sacramento, CA.

Page, R.W., and LeBlanc, R.A., 1969, Geology, Page, R.W. and LeBlanc, R.A., 1969, Geology, hydrology, and water quality in the Fresno area, California. U.S. Geological Survey, Open-File Report OF-69-328, scale 1:126720.