

3.13 Paleontological Resources

This subchapter discusses paleontological resources with information from the Project geotechnical investigation (refer to Subchapter 3.1, *Geological Resources*, of this report).

3.13.1 Regulatory Framework

Section 87.430, Paleontological Resources, of the San Diego County Code of Regulatory Ordinances (Grading Ordinance) states that:

The County Official may require that a qualified paleontologist be present during all or selected grading operations, to monitor for the presence of paleontological resources. If fossils greater than twelve inches in any dimension are encountered, then all grading operations in the area where they were found shall be suspended immediately and not resumed until authorized by the County Official. The permittee shall immediately notify the County Official of the discovery. The County Official shall investigate and determine the appropriate resource recovery operations, which the permittee shall carry out prior to the County Official's authorization to resume normal grading operations.

The San Diego County General Plan COS Element provides policies for protection of natural resources, including paleontological resources and unique geologic features for conservation, many of which are fossiliferous formations. The associated policies, however, do not place legal requirements on projects with regard to paleontological resources. It is the general policy of the County to maintain an inventory of fossils and unique geological formations and to provide opportunities for public education on paleontological resources.

3.13.2 Environmental Setting

Paleontology is the science dealing with pre-historic plant and non-human animal life. Paleontological resources (or fossils) encompass the remains or traces of hard and resistant materials such as bones, teeth, or shells, although plant materials and occasionally less resistant remains (e.g., tissue or feathers) can also be preserved. The formation of fossils typically involves the rapid burial of plant or animal remains and the formation of casts, molds, or impressions in the associated sediment (which subsequently becomes sedimentary rock). Because of this, the potential for fossil remains in a given geologic formation can be predicted based on known fossil occurrences from similar (or correlated) geologic formations in other locations. Accordingly, while there are no recorded fossil occurrences or collection efforts known from the Project impact footprint, paleontological resource potential can be inferred from on-site geology and off-site fossil occurrences in similar materials, as outlined below.

Based on the results of the Project geotechnical investigations (refer to Subchapter 3.1 of this report), surficial materials and geologic formations observed or expected to occur within the Project impact footprint include native topsoils, Quaternary alluvium, the Tertiary Otay Formation and the Jurassic Santiago Peak Volcanics. Native topsoil deposits do not exhibit any potential for significant paleontological resource values, due to their relatively recent age and methods of formation and deposition (i.e., physical and chemical weathering producing soil that is transported and deposited by methods such as water, wind, and gravity).

Quaternary alluvial materials are assigned a low paleontological resource sensitivity, due to their relatively recent age, high-energy formation/deposition environment, and the fact that, with rare exceptions, significant fossil occurrences are unknown from alluvial deposits in San Diego County (Deméré and Walsh 1994).

The Tertiary Otay Formation is assigned a high paleontological resource sensitivity, based on known occurrences of important terrestrial vertebrate fossils from the Otay Mesa area including reptiles, birds, rodents, camels, and oreodonts (Deméré and Walsh 1994).

Paleontological resource sensitivity for the Santiago Peak Volcanics can range from zero to moderate, depending on the nature and sensitivity of the associated units (Deméré and Walsh 1994). Specifically, as noted under Stratigraphy in Subchapter 3.1.1, this formation may contain igneous extrusives (i.e., formed at the surface from a molten origin) and sedimentary (volcaniclastic) rocks. Within the Project impact footprint, the Santiago Peak Volcanics are mapped as volcanic and metavolcanic units, with marginal potential for the occurrence of paleontological resources (Deméré and Walsh 1994).