Appendix H

Paleontological Resources Assessment Report,

Global Water Farms Pilot Project Site,

near the Community of Bombay Beach, Riverside County, California

RIVERSIDE COUNTY
PLANNING DEPARTMENT

*John Earle Hildebrand III*
*Planning Director*

June 7, 2022

CRM Tech
Attn: Tom Tang ttang@crmtech.us

**RE: Conditions of Approval**
**County Paleontological Report No. 1717**
**"Paleontological Resources Assessment Report, Global Water Farms Pilot Project Site, Near the Community of Bombay Beach, Riverside County, California", dated June 1, 2022.**

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County Paleontological Report (PDP) No. 1717, submitted for this case (CUP220005), was prepared by CRM Tech, Inc. and is entitled: "Paleontological Resources Assessment Report, Global Water Farms Pilot Project Site, Near the Community of Bombay Beach, Riverside County, California", dated June 1, 2022.

PDP01717 concluded that the proposed project's potential to impact significant, nonrenewable paleontological resources appears to be high, most especially in lacustrine deposits at lower elevations, but also in the local alluvium at higher elevations.

PDP01717 recommended that a paleontological resource impact mitigation program be developed and implemented during the project to prevent such impacts or reduce them to a level less than significant.

PDP01717 satisfies the requirement for a Paleontological Resource Assessment for CEQA purposes. PDP01717 is hereby accepted for CUP220005. A PRIMP shall be required prior to issuance of a grading permit for this project.

Please email me at dwalsh@rivco.org if you have any questions.

Sincerely,

RIVERSIDE COUNTY PLANNING DEPARTMENT
John Earle Hildebrand III, Planning Director

Daniel P. Walsh, CEG No. 2413
Senior Engineering Geologist

Cc: Planner: Even Langan (elangan@rivco.org)
Applicant: Global Water Farms, Inc.; Attn: Wendy Becker (wbecker@globalwaterfarms.com)
Agent: Global Water Farms, Inc.; Attn: Jonathan Becker (jbecker@globalwaterfarms.com)

File: PDP01717, CUP220005
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**PALEONTOLOGICAL RESOURCES ASSESSMENT REPORT**

# GLOBAL WATER FARMS PILOT PROJECT SITE

**Near the Community of Bombay Beach**
**Riverside County, California**

**For Submittal to:**

County of Riverside Planning Department, Desert Office
77-588 El Duna Court, Suite H
Palm Desert, CA 92211

**Prepared for:**

Terra Nova Planning and Research, Inc.
42635 Melanie Place, Suite 101
Palm Desert, CA 92211

**Prepared by:**

Ben Kerridge, Paleontologist/Report Writer
Daniel Ballester, Field Director
CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

June 1, 2022

Approximately 9.5 acres
USGS Frink NW, Calif., 7.5' (1:24,000) quadrangle
Section 35, T8S R12E, San Bernardino Baseline and Meridian

CRM TECH Contract No. 3836P
Assessor's Parcel Number 731-170-001; County of Riverside Conditional Use Permit Number 220005

## MANAGEMENT SUMMARY

Between February 2022 and May 2022, at the request of the Terra Nova Planning and Research, Inc., CRM TECH performed a paleontological resource assessment on approximately 9.5 acres of rural land in an unincorporated area near the community of Bombay Beach, Riverside County, California. The subject property of the study consists of a portion of Assessor's Parcel Number 731-170-001, located approximately one mile northwest of the Glamis North Hot Spring Resort and six miles north of Bombay Beach, in the northeast quarter of Section 35, Township 8 South Range 12 East, San Bernardino Baseline and Meridian.

The study is a part of the environmental review process for a proposed industrial pilot project, which entails the construction of a water desalination facility and a mounted solar field. The County of Riverside, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the proposed project would adversely affect any significant, nonrenewable paleontological resources, as required by CEQA, and to design a paleontological mitigation program, if necessary.

In order to identify any paleontological resource localities that may exist in or near the project area and to assess the probability for such resources to be encountered during the project, CRM TECH initiated a records search at the appropriate repository, conducted a literature review, and carried out a systematic field survey. The results of these research procedures indicate no known paleontological localities at or near the project location, and no surface manifestation of any fossil remains were observed within project boundaries during the field survey.

Geologic sources suggest a mixture of soil types at this location, including alluvial, eolian, and lacustrine deposits, but mostly point to a high sensitivity for Pleistocene vertebrate fossils, although the County of Riverside General Plan classifies the project vicinity as Low Potential for paleontological resources. The field survey confirmed the presence of lacustrine and alluvial sediment deposits at this location but found no evidence of any paleontological resources on the surface. However, the field survey efforts were hampered by the limited access and poor ground visibility resulting from pockets of dense vegetation growth over portions of the property.

Based on these findings, CRM TECH concludes that the proposed project's potential to impact significant, nonrenewable paleontological resources appears to be high, especially in lacustrine deposits at lower elevations, but also in the local alluvium at higher elevations. Therefore, CRM TECH recommends that a paleontological resource impact mitigation program be developed and implemented during the project to prevent such impacts or reduce them to a level less than significant. As the primary component of the mitigation program, earth-moving operations in the project area should be monitored by a qualified paleontological monitor. Under this condition, the proposed project may be cleared to proceed in compliance with CEQA provisions on paleontological resources.

## TABLE OF CONTENTS



## LIST OF FIGURES

## INTRODUCTION

Between February 2022 and May 2022, at the request of the Terra Nova Planning and Research, Inc., CRM TECH performed a paleontological resource assessment on approximately 9.5 acres of rural land in an unincorporated area near the community of Bombay Beach, Riverside County, California (Figure 1). The subject property of the study consists of a portion of Assessor's Parcel Number 731-170-001, located approximately one mile northwest of the Glamis North Hot Spring Resort and six miles north of Bombay Beach, in the northeast quarter of Section 35, Township 8 South Range 12 East, San Bernardino Baseline and Meridian (Figures 2, 3).

The study is a part of the environmental review process for a proposed industrial pilot project, which entails the construction of a water desalination facility and a mounted solar field. The County of Riverside, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the proposed project would adversely affect any significant, nonrenewable paleontological resources, as required by CEQA, and to design a paleontological mitigation program, if necessary.

In order to identify any paleontological resource localities that may exist in or near the project area and to assess the probability for such resources to be encountered during the project, CRM TECH initiated a records search at the appropriate repository, conducted a literature review, and carried out a systematic field survey. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

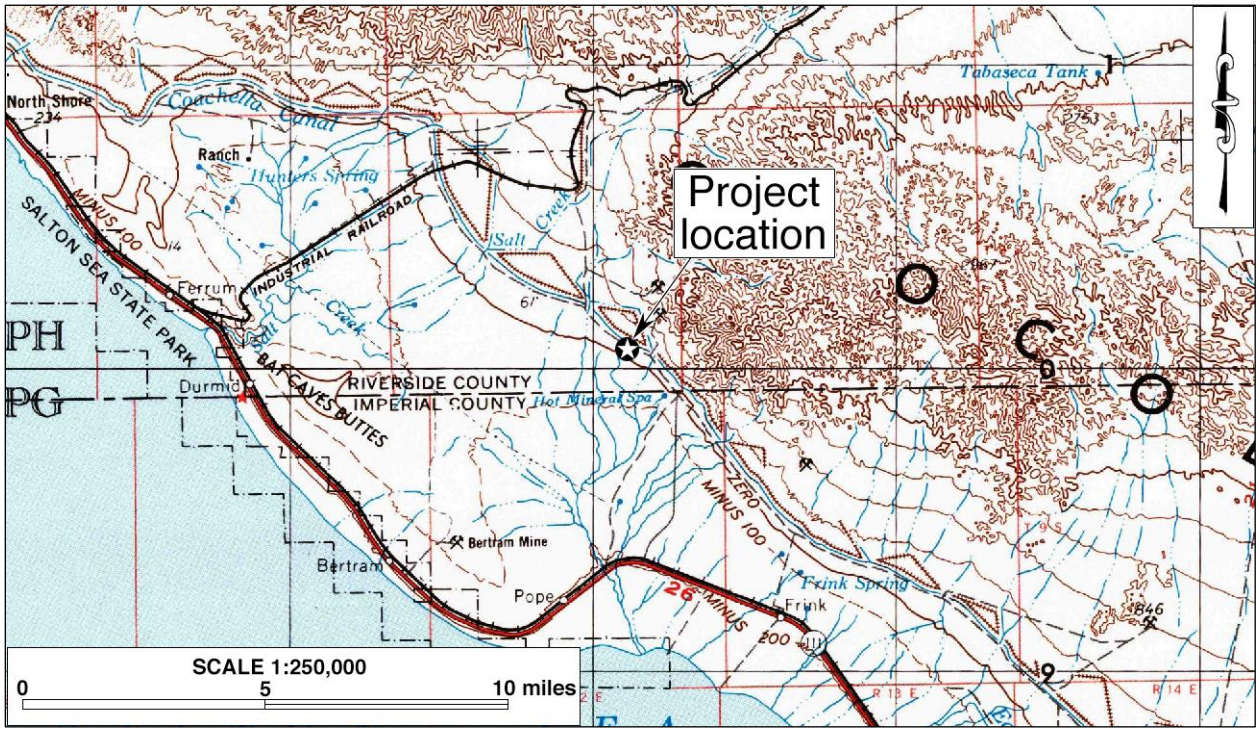


Figure 1. Project vicinity. (Based on USGS Salton Sea, Calif.-Ariz., Calif., 120'x60' quadrangle, 1969 edition)

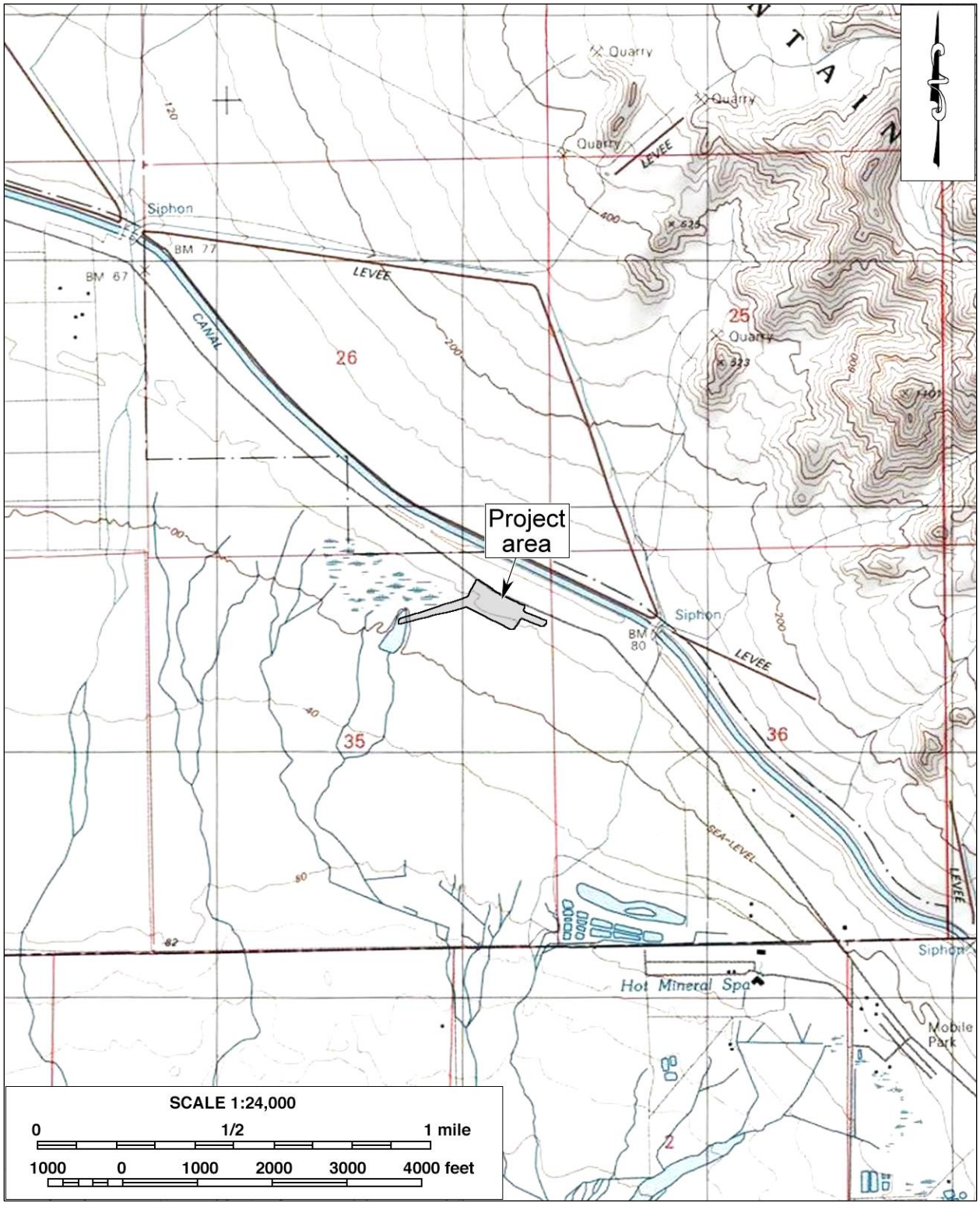


Figure 2. Project area. (Based on USGS Frink NW, Calif., 7.5' quadrangle, 1998 edition)

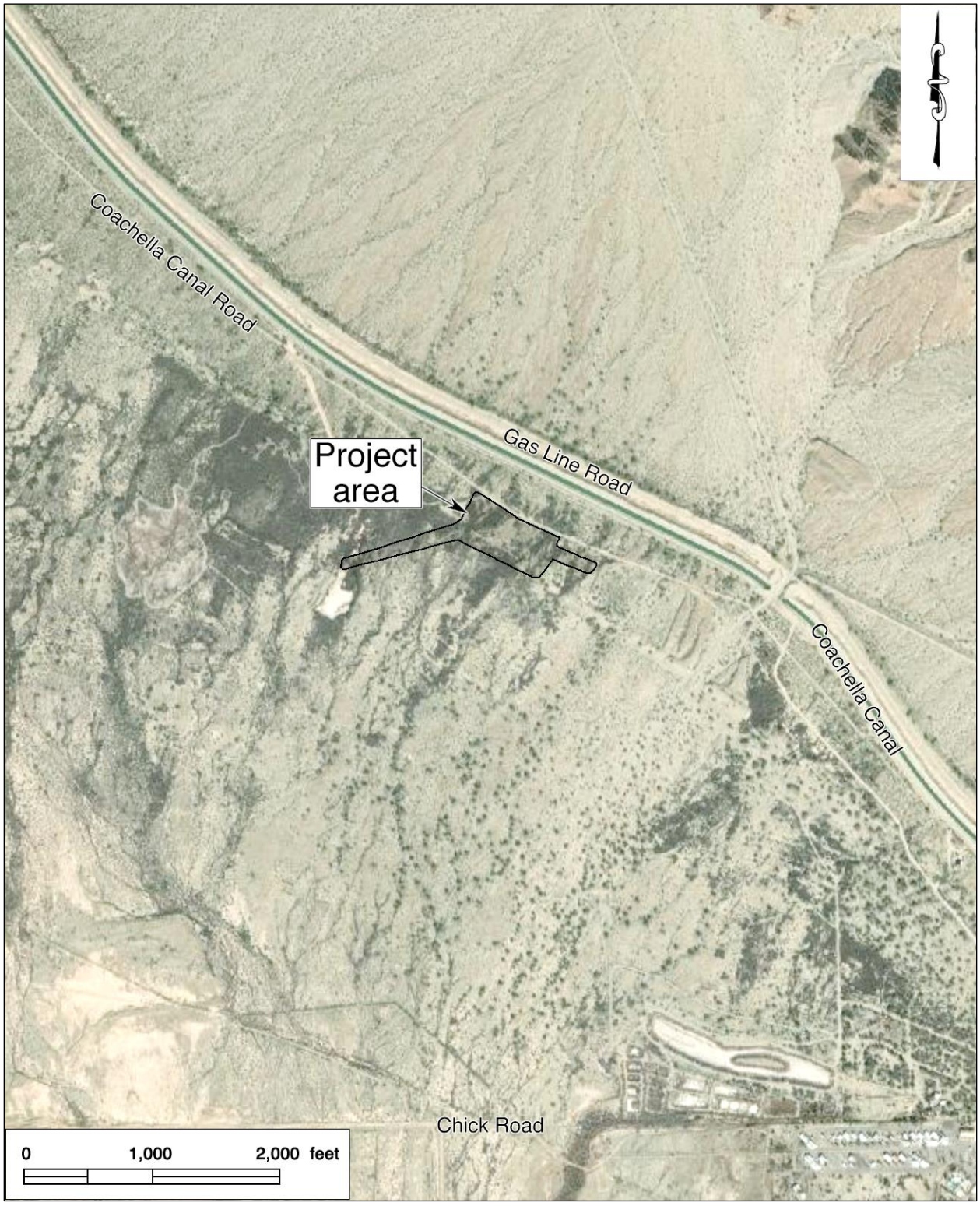


Figure 3. Recent satellite image of the project area.

## PALEONTOLOGICAL RESOURCES

### DEFINITION

Paleontological resources represent the remains of prehistoric life, exclusive of any human remains, and include the localities where fossils were collected as well as the sedimentary rock formations in which they were found. The defining character of fossils or fossil deposits is their geologic age, typically older than recorded human history and/or older than the middle Holocene Epoch, which dates to circa 5,000 radiocarbon years (Society of Vertebrate Paleontology 2010:11).

Common fossil remains include marine and freshwater mollusk shells; the bones and teeth of fish, amphibians, reptiles, and mammals; leaf imprint assemblages; and petrified wood. Fossil traces, another type of paleontological resource, include internal and external molds (impressions) and casts created by these organisms. These items can serve as important guides to the age of the rocks and sediments in which they are contained, and may prove useful in determining the temporal relationships between rock deposits from one area and those from another as well as the timing of geologic events. They can also provide information regarding evolutionary relationships, development trends, and environmental conditions.

Fossil resources generally occur only in areas of sedimentary rock (e.g., sandstone, siltstone, mudstone, claystone, or shale). Because of the infrequency of fossil preservation, fossils, particularly vertebrate fossils, are considered nonrenewable paleontological resources. Occasionally fossils may be exposed at the surface through the process of natural erosion or because of human disturbances; however, they generally lay buried beneath the surficial soils. Thus, the absence of fossils on the surface does not preclude the possibility of their being present within subsurface deposits, while the presence of fossils at the surface is often a good indication that more remains may be found in the subsurface.

### SIGNIFICANCE CRITERIA

According to guidelines proposed by Eric Scott and Kathleen Springer (2003:6) of the San Bernardino County Museum, paleontological resources can be considered to be of significant scientific interest if they meet one or more of the following criteria:

1. The fossils provide information on the evolutionary relationships and developmental trends exhibited among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or the interactions between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life; and/or
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

## PALEONTOLOGICAL SENSITIVITY

The fossil record is unpredictable, and the preservation of organic remains is rare, requiring a particular sequence of events involving physical and biological factors. Skeletal tissue with a high percentage of mineral matter is the most readily preserved within the fossil record; soft tissues not intimately connected with the skeletal parts, however, are the least likely to be preserved (Raup and Stanley 1978). For this reason, the fossil record contains a biased selection not only of the types of organisms preserved but also of certain parts of the organisms themselves. As a consequence, paleontologists are unable to know with certainty, the quantity of fossils or the quality of their preservation that might be present within any given geologic unit.

Sedimentary units that are paleontologically sensitive are those geologic units (mappable rock formations) with a high potential to contain significant nonrenewable paleontological resources. More specifically, these are geologic units within which vertebrate fossils or significant invertebrate fossils have been determined by previous studies to be present or are likely to be present. These units include, but are not limited to, sedimentary formations that contain significant paleontological resources anywhere within their geographical extent as well as sedimentary rock units temporally or lithologically amenable to the preservation of fossils.

A geologic formation is defined as a stratigraphic unit identified by its lithic characteristics (e.g., grain size, texture, color, and mineral content) and stratigraphic position. There is a direct relationship between fossils and the geologic formations within which they are enclosed and, with sufficient knowledge of the geology and stratigraphy of a particular area, it is possible for paleontologists to reasonably determine the formation's potential to contain significant nonrenewable vertebrate, invertebrate, marine, or plant fossil remains.

The paleontological sensitivity for a geologic formation is determined by the potential for that formation to produce significant nonrenewable fossils. This determination is based on what fossil resources the particular geologic formation has produced in the past at other nearby locations. Determinations of paleontologic sensitivity must consider not only the potential for yielding vertebrate fossils but also the potential of yielding a few significant fossils that may provide new and significant taxonomic, phylogenetic, and/or stratigraphic data.

The Society of Vertebrate Paleontology issued a set of standard guidelines intended to assist paleontologists to assess and mitigate any adverse effects/impacts to nonrenewable paleontological resources. The guidelines defined four categories of paleontological sensitivity for geologic units that might be impacted by a proposed project, as listed below (Society of Vertebrate Paleontology 2010:1-2):

- **High Potential**: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- **Undetermined Potential**: Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment.
- **Low Potential**: Rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances.
- **No Potential**: Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

# SETTING

## GEOLOGIC SETTING

The project area is located near the southeastern end of the Coachella Valley, which occupies the northwestern portion of the Colorado Desert geomorphic province (Jenkins 1980:40-41). The Colorado Desert province, one of 11 in the State of California, is bounded by the Peninsular Ranges province on the southwest, the eastern Transverse Ranges province on the north, and the southern portion of the Mojave Desert province on the northeast (*ibid*.). It widens to the southeast as it extends through the Imperial Valley and into Mexico.

One of the major features within the Colorado Desert province is the Salton Trough, a 290-kilometer-long (approximately 180 miles) structural depression containing the present-day Salton Sea. The Salton Trough represents the northernmost portion of a northwest-southeast trending rift valley known as the Gulf of California Rift Zone that encompasses the body of water from which its name derives (Alles 2011; USGS 1991). This highly active rift zone is a transtensional basin or graben, straddling the oblique-divergent plate boundary between the North American and Pacific plates in southern California and northwestern Mexico (Dorsey 2010).

The geology of the Salton Trough can be traced to the Late Cenozoic, during which paleoenvironment and geological conditions varied widely and included marine, freshwater, and terrestrial sedimentary depositions (Waters 1980). Miocene paleoenvironment of the Salton Trough was that a marine embayment that gradually became cut off from the Gulf of California by the delta built up at the mouth of the Colorado River. Rocks containing marine fossils that were deposited during this period can be found outcropping at Painted Hill, Garnet Hill, and at least two places in the Indio Hills (*ibid.*; Proctor 1968:Plate 1).

Approximately four million years ago, sediment eroded from the formation of the Grand Canyon was carried down the Colorado River and deposited at the eastern gulf coast, forming an advancing delta that eventually extended across the sea to the west coast and creating a barrier between the Sea of Cortez and the Salton Trough, preventing gulf waters from entering the valley. Conversely, the delta prevents any water in the trough from flowing to the gulf except at times when the trough is filled and the water level rises over the delta, resulting in estuarine depositional contexts. The last of these brackish paleoenvironments appears to be the early portion of the Palm Springs Formation, dating to the late Pliocene (approximately 2.5-3 million years ago; Waters 1980; Alles 2011).

In the Quaternary Period, the Salton Trough was the site of Holocene Lake Cahuilla, which was in fact a series of lakes that filled portions of the depression, including much of the Coachella Valley, at different times. Along the western shoreline of the lake, tufa was deposited on some of the rocks. At Travertine Point, the tufa is in some places over a foot thick and has been deposited in layers, forming bands somewhat like the rings in a tree. The rings in these tufa bands developed from weathering of the tufa when the lake was absent and the tufa deposits between the rings represent times when the lake waters were present. Based on one tufa coated boulder near the northeast portion of Travertine Point, there have been at least five lake fillings, and the changes in tufa thickness between the erosion rings indicate that these different fillings had varied duration.

## CURRENT NATURAL SETTING

The project area is located in a sparsely populated rural area along the northeastern shoreline of the Salton Sea, an inland saltwater lake that occupies the lowest portion of the lakebed of Holocene Lake Cahuilla. The general area lies near the vaguely delineated "border" between the Coachella Valley and the Imperial Valley. Dictated by this geographic setting, the climate and environment of the surrounding region are typical of southern California desert country, marked by extremes in temperature and aridity. Temperatures in the region reach over 120 degrees in summer. Average annual precipitation is less than five inches, and average annual evaporation rate exceeds three feet.

The project area consists of an irregularly shaped patch of undeveloped desert floor surrounded mostly by land of similar character, with Coachella Canal Road running along the northeastern boundary and the canal itself 250 feet beyond (Figure 3). It occupies the southwestern end of a wide bajada, the convergence of several alluvial fans that have eroded from the extended finger ridges of the Chocolate Mountains further to the northeast, approximately a mile away at the nearest spot. The terrain of the project area is uneven and rough, with elevations ranging from 0 to 50 feet above mean sea level. Several arroyos cross the property from northeast to southwest, with elevations declining the same direction.

The project area lies across the former shoreline of Holocene Lake Cahuilla, which reached the present-day 42-foot contour line at its last high stand before beginning to desiccate around 1731 A.D. (Wilke 1978; Waters 1983; Bard 2022), with most of the property sitting above that elevation. Surface soil at higher elevations in the project area is composed of a light brown, coarse-grained alluvial sand with clusters of angular and sub-angular granitic rocks (Figure 4). At lower elevations, the surface soil features deposits of highly compacted silty clay mixed with small to large rocks covered with tufa, a variety of limestone formed when carbonate minerals precipitate out of ambient temperature water and associated with the ancient lake.

Figure 4. Current natural setting of the project area, view to the northwest. (Photograph taken on May 17, 2022)

## METHODS AND PROCEDURES

### RECORDS SEARCHES

The records search service for this study was provided by the Western Science Center (WSC) in Hemet, California. This institution maintains files of regional paleontological localities as well as supporting maps and documents. The records search results were used to identify known previously performed paleontological resource assessments as well as known paleontological localities within a one-mile radius of the project location. A copy of the records search results is attached to this report in Appendix 2.

### LITERATURE REVIEW

In conjunction with the records searches, CRM TECH paleontologist Ben Kerridge pursued a literature review on the project area and vicinity under the direction of principal paleontologist Ron Schmidtling. Sources consulted during the review include primarily topographic, geologic, and soil maps of the Salton Trough region area, published geologic literature pertaining to the project location, the Riverside County General Plan and Geographic Information System, aerial and satellite images available at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software, and materials in the CRM TECH library, including unpublished reports produced during similar surveys in the vicinity.

### FIELD SURVEY

On May 17, 2022, CRM TECH paleontological surveyors Daniel Ballester and Hunter O'Donnell carried out the field survey of the project area under Ron Schmidtling's direction. Wherever possible, the survey was completed at an intensive level by walking a series of parallel north-south transects spaced 15 meters (approximately 50 feet) apart. Due to the presence of thick clusters of vegetation growth (Figure 4), however, the transect system could not be maintained throughout the survey, while portions of the project area were impassable.

In these areas, the field crew followed the courses of the transects as closely as possible and inspected the ground surface wherever it was exposed. Using these methods, the project area was inspected systematically for any evidence of paleontological resources and to verify soil types identified by the geologic literature to the best of the field crew's ability. Ground visibility was generally poor to fair (30 to 40 percent) because large quantities of living and dead vegetation obscured the surface over much of the property.

## RESULTS AND FINDINGS

### RECORDS SEARCHES

The WSC did not identify any known paleontological localities within the project area or within a one-mile radius (Radford 2022; see Appendix 2). The WSC describes the surface soils in the project area as lacustrine surficial deposits of Pleistocene to Holocene age, which are considered to be of

high paleontological sensitivity. These units elsewhere in the Colorado Desert region have produced fossil specimens of a variety of species, including extinct ones, such as ancient horse, camel, sabertooth cat, and bighorn sheep (*ibid.*). The WSC deems any fossil specimens encountered during the project to be scientifically significant and remarks that any excavation within the project area would impact these paleontologically sensitive Pleistocene soils. For these reasons, the WSC recommends a paleontological mitigation program be implemented to monitor, salvage, and curate any fossil remains discovered during the course of the project (*ibid.*).

## LITERATURE REVIEW

California Division of Mines and Geology (1967) maps the surface geology in the project area as mostly *Qal* with some *Ql* in the southwestern portion (Figure 5). *Qal* is described as recent alluvial sand, silt, clay, and gravel mixed with older alluvium from local sources combined with Holocene silt, sand, and clay from the Colorado River floodplain (*ibid.*). *Ql* is described claystone, sand, and beach gravel undifferentiated locally from *Qal* and is known to contain abundant nonmarine fossils of Pleistocene age (*ibid.*). That map also shows the project area to be in a highly active tectonic corridor in the immediate vicinity of fault lines (*ibid.*).

Gutierrez et al. (2010) identify the soils in the project area as *Q* or alluvium, lake, playa, and terrace deposits of quaternary age, unconsolidated to semi-consolidated, and mostly nonmarine. Riverside County paleontological sensitivity maps classify the project location as Low Potential (RCIT 2022). According to definitions outlined in the County's General Plan:

> Lands for which previous field surveys and documentation demonstrate as having a low potential for containing significant paleontological resources subject to adverse impacts. The mapping of low potential was determined based on actual documentation and was not generalized to cover all areas of a particular rock unit on a geologic map. (County of Riverside 2015:4.9-11)

## FIELD SURVEY

Throughout the course of the field survey, no surface manifestation of any paleontological remains was observed within the project area. However, the ground surface in much of the project area was covered by dense vegetation, which prevented an accurate assessment of the paleontological sensitivity of the native soils at those locations.

## CONCLUSION AND RECOMMENDATIONS

CEQA guidelines (Title 14 CCR App. G, Sec. V(c)) require that public agencies in the State of California determine whether a proposed project would "directly or indirectly destroy a unique paleontological resource" during the environmental review process. The present study, conducted in compliance with this provision, is designed to identify any significant, non-renewable paleontological resources that may exist within or adjacent to the project area, and to assess the possibility for such resources to be encountered in future excavation and construction activities.

In summary of the research results presented above, no paleontological localities were previously found at or near the project location, and no surface manifestation of any fossil remains were


Figure 5. Geologic map of the project vicinity. (Source: California Division of Mines and Geology 1967)

observed within project boundaries during the field survey. Geologic sources suggest a mixture of soil types at this location, including alluvial, eolian, and lacustrine deposits, but mostly point to a high sensitivity for Pleistocene vertebrate fossils, although the County of Riverside General Plan classifies the project vicinity as Low Potential for paleontological resources. The field survey confirmed the presence of lacustrine and alluvial sediment deposits at this location but found no evidence of any paleontological resources on the surface. However, the field survey efforts were hampered by the limited access and poor ground visibility resulting from pockets of dense vegetation growth over portions of the property.

Based on these findings, CRM TECH concludes that the proposed project's potential to impact significant, nonrenewable paleontological resources appears to be high, most especially in lacustrine deposits at lower elevations, but also in the local alluvium at higher elevations. Therefore, CRM TECH recommends that a paleontological resource impact mitigation program be developed and implemented during the project to prevent such impacts or reduce them to a level less than significant. The mitigation program should be developed in accordance with the provisions of CEQA (Scott and Springer 2003) as well as the proposed guidelines of the Society of Vertebrate Paleontology (2010), and should include but not be limited to the following components:

- Earth-moving operations should be monitored for potential paleontological remains. The monitor should be prepared to quickly salvage fossils, if they are unearthed, to avoid construction delays, but must have the power to temporarily halt or divert construction equipment to allow for removal of abundant or large specimens.
- Collected samples of sediment should be processed to recover small fossils, and all recovered specimens should be identified and curated at a repository with permanent retrievable storage.
- A report of findings, including an itemized inventory of recovered specimens, should be prepared upon completion of the procedures outlined above. The report should include a discussion of the significance of the paleontological findings, if any. The report and the inventory, when submitted to the County of Riverside, would signify completion of the program to mitigate potential impacts on paleontological resources.

Under this condition, the proposed project may be cleared to proceed in compliance with CEQA provisions on paleontological resources.

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## APPENDIX 1

# PERSONNEL QUALIFICATIONS

**PRINCIPAL PALEONTOLOGIST**
**Ron Schmidtling, M.S.**

## Education

| | |
|---|---|
| 1995 | M.S., Geology, University of California, Los Angeles. |
| 1991 | Pasadena City College, Pasadena, California. |
| 1985 | B.A., Archaeology, Paleontology, Ancient Folklore, and Art History, University of Southern Mississippi, Hattiesburg. |

## Professional Experience:

| | |
|---|---|
| 2020- | Principal Paleontologist, CRM TECH, Colton, California. |
| 2014- | Instructor of Earth Science, History of Life, Ecology, and Evolutionary Biology, Columbia College Hollywood, Reseda, California. |
| 2013, 2015 | Volunteer, excavation of a camarasaur and a diplodocid in southern Utah, Natural History Museum of Los Angeles County, California. |
| 1993-2014 | Consultant, Getty Conservation Institute, Brentwood, California. |

- Geological Consultant on the Renaissance Bronze Project, characterizing constituents of bronze core material;
- Paleontological Consultant for Antiquities/Conservation, identifying the foraminifera and mineral constituents of a limestone torso of Aphrodite;
- Scientific Consultant on the Brentwood Site Building Project, testing building materials for their suitability in the museum galleries.

| | |
|---|---|
| 1999-2001 | Archaeological and Paleontological Monitor, Michael Brandman Associates, Irvine, California. |
| 1997 | Department of Archaeology, University of California, Los Angeles. |
| 1994 | Scientific Illustrator and Teaching Assistant, Department of Earth and Space Sciences and Department of Biological Sciences, University of California, Los Angeles. |

## Memberships

AAPS (Association of Applied Paleontological Sciences), USA; CSEOL (Center for the Study of Evolution and the Origin of Life), Department of Earth Sciences, University of California, Los Angeles.

## Publications and Reports

Author, co-author, and contributor on numerous paleontological publications and paleontological resource management reports.

## PROJECT PALEONTOLOGIST/REPORT WRITER
## Ben Kerridge, M.A.

### Education

| | |
|---|---|
| 2019-2020 | Physical Geology, California Geology, and Historical Geology Coursework, Fullerton College, Fullerton, California. |
| 2014 | Geoarchaeological Field School, Institute for Field Research, Kephallenia, Greece. |
| 2010 | M.A., Anthropology, California State University, Fullerton. |
| 2004 | B.A., Anthropology, California State University, Fullerton. |

### Professional Experience

| | |
|---|---|
| 2015- | Project Archaeologist/Paleontologist/Report Writer, CRM TECH, Colton, California. |
| 2015 | Teaching Assistant, Institute for Field Research, Kephallenia, Greece. |
| 2009-2014 | Publications Delivery Manager, CH2M HILL, Santa Ana, California. |
| 2010- | Naturalist, Newport Bay Conservancy, Newport Beach, California. |
| 2006-2009 | Technical Publishing Specialist, CH2M HILL, Santa Ana, California. |
| 2002-2006 | English Composition/College Preparation Tutor, various locations, California. |

## PALEONTOLOGICAL SURVEYOR
## Hunter C. O'Donnell, B.A.

### Education

| | |
|---|---|
| 2018 | M.A. (anticipated), Applied Archaeology, California State University, San Bernardino. |
| 2015 | B.A. (*cum laude*), Anthropology, California State University, San Bernardino. |
| 2012 | A.A., Social and Behavioral Sciences, Mt. San Antonio College, Walnut, California. |
| 2011 | A.A., Natural Sciences and Mathematics, Mt. San Antonio College, Walnut, California. |
| 2014 | Archaeological Field School, Santa Rosa Mountains; supervised by Bill Sapp of the United States Forest Service and Daniel McCarthy of the San Manuel Band of Mission Indians. |

### Professional Experience

| | |
|---|---|
| 2016- | Graduate Research Assistant, Applied Archaeology, California State University, San Bernardino. |
| 2016-2017 | Cultural Intern, Cultural Department, Pechanga Band of Luiseño Indians, Temecula, California. |
| 2015 | Archaeological Intern, U.S. Bureau of Land Management, Barstow, California. |
| 2015 | Peer Research Consultant: African Archaeology, California State University, San Bernardino. |

**PALEONTOLOGICAL SURVEYOR/FIELD DIRECTOR**
**Daniel Ballester, M.S.**

## Education

| | |
|---|---|
| 2013 | M.S., Geographic Information System (GIS), University of Redlands, California. |
| 1998 | B.A., Anthropology, California State University, San Bernardino. |
| 1997 | Archaeological Field School, University of Las Vegas and University of California, Riverside. |
| 1994 | University of Puerto Rico, Rio Piedras, Puerto Rico. |
| 2007 | Certificate in Geographic Information Systems (GIS), California State University, San Bernardino. |

- Cross-trained in paleontological field procedures and identifications by CRM TECH Geologist/Paleontologist Harry M. Quinn.

## Professional Experience

2002- Field Director/GIS Specialist, CRM TECH, Riverside/Colton, California.
- Report writing, site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew. Manages and updates CRM TECH's GIS database, produces maps and extracts data using GIS. Manages field crews during paleontological and archaeological field surveys, testing and data recovery projects. Oversees work to ensure correct procedures.

2011-2012 GIS Specialist for Caltrans District 8 Project, Garcia and Associates, San Anselmo, California.
- Created archaeological site maps based off points taken with hand-held GPS unit; responsible for accurately inputting data.

2009-2010 Field Crew Chief, Garcia and Associates, San Anselmo, California.

2009-2010 Field Crew, ECorp, Redlands.

1999-2002 Project Paleontologist/Archaeologist, CRM TECH, Riverside, California.
- Conducted paleontological and archaeological field surveys, excavations, and monitoring.

1998-1999 Field Crew, K.E.A. Environmental, San Diego, California.
- Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.

1998 Field Crew, A.S.M. Affiliates, Encinitas, California.
- Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.

1998 Field Crew, Archaeological Research Unit, University of California, Riverside.
- Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

**APPENDIX 2**

# RECORDS SEARCH RESULTS

**(Confidential)**

# WESTERN SCIENCE CENTER

CRM TECH
Nina Gallardo
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 22, 2022

Dear Ms. Gallardo,

This letter presents the results of a record search conducted for the Proposed Global Water Farms Pilot Project (CRM TECH # 3836P) in Riverside County, California. The project site consists of approximately 9.5 acres on APN 731-170-001 located approximately 1 mile northwest of the Glamis North Hot Springs Resort in Section 35 of Township 8 South, and Range 12 East, on the *Frink NW, CA* USGS 7.5 minute quadrangle.

The geologic units underlying the project area are mapped entirely as lacustrine surficial deposits dating from the Pleistocene to the Holocene (Powell, Fleck & Cossette, 2018). Pleistocene surficial units are considered to be of high paleontological sensitivity, and while the Western Science Center does not have localities within the project area or within a 1 mile radius we do have numerous fossil localities from similarly mapped units from throughout the region, including those associated with Desert Sunlight Solar Project and Desert Harvest Solar Project also found within the Colorado Desert region. Southern California Pleistocene alluvial and surficial units are well documented to contain extinct fauna including those associated with ancient horse (*Equus sp.*), camel (*Camelops hesternus*), sabertooth cat (*Smilodon fatalis)* and bighorn sheep (*Ovis canadensis*) many more.

Any fossil specimens recovered from the Proposed Global Water Farms Pilot Project would be scientifically significant. Excavation activity associated with the development of the project area would impact the paleontologically sensitive Pleistocene units, and it is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils from the study area.

If you have any questions, or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford
Collections Manager

# Global Water Farms Pilot Project

Project area, one mile radius, geologic mapping and any WSC fossil localities.

**Legend**

- Project area and one mile radius
- Ql: Lacustrine deposits (Pleistocene to Holocene)
- Qya: Alluvial deposits (Pleistocene to Holocene)



N

1 mi