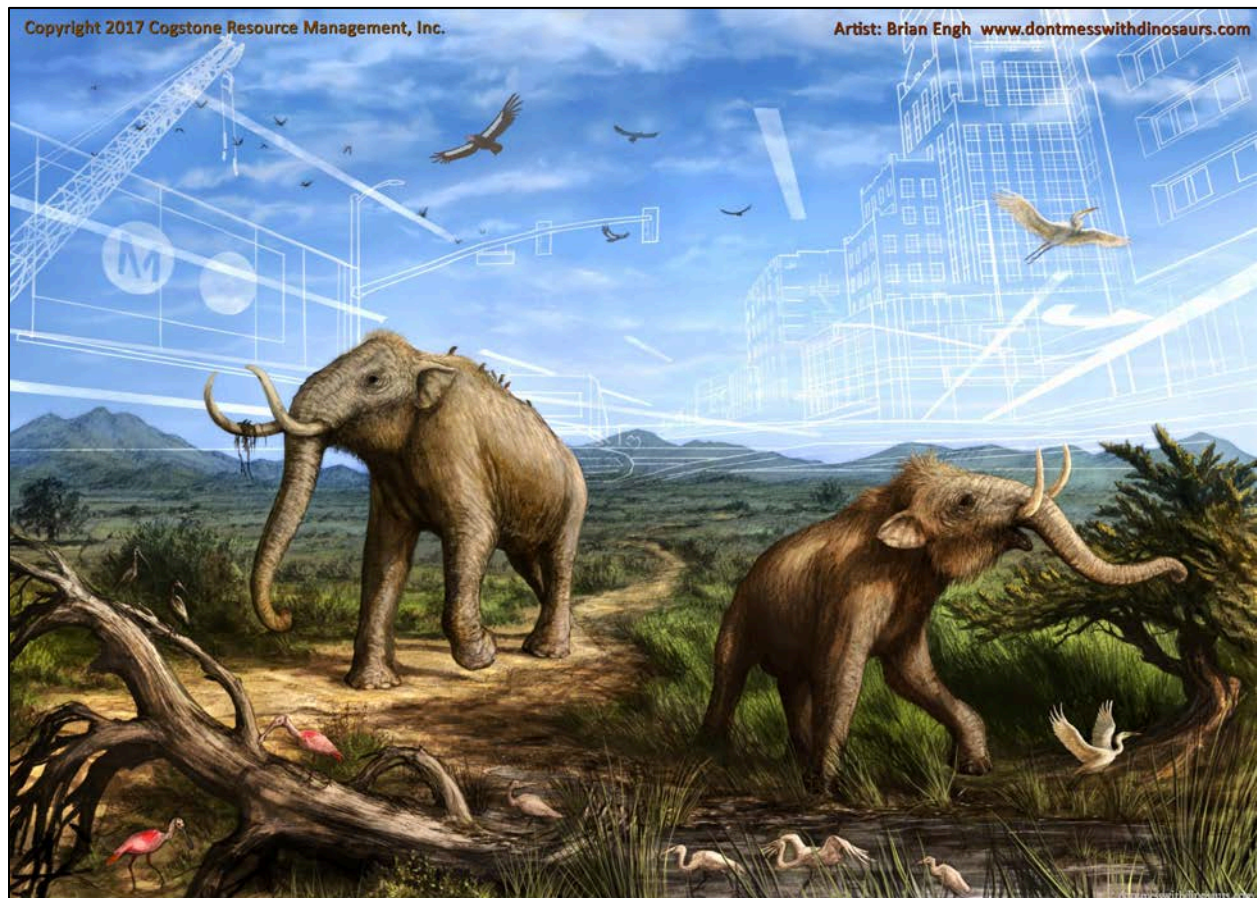




2017 PALEONTOLOGICAL RESOURCES PROGRESS REPORT FOR THE PURPLE LINE EXTENSION, SECTION ONE, LOS ANGELES, CALIFORNIA



Artist's rendering of the Los Angeles Basin in the vicinity of Metro's PLE Section 1, as it might have appeared in the late Pleistocene Epoch, with the present-day landscape of Los Angeles superimposed above.

**2017 PALEONTOLOGICAL RESOURCES
PROGRESS REPORT FOR THE
PURPLE LINE EXTENSION, SECTION ONE,
LOS ANGELES, CALIFORNIA**

Prepared for:

Metropolitan Transportation Authority
One Gateway Plaza, Los Angeles, CA

Authors:

Eric Scott MA, Ashley Leger PhD, Kim Scott MS, John M Harris PhD, and Sherri M Gust MS

Principal Paleontologist:

Sherri M. Gust

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Project Number: 2064

USGS 7.5' Quadrangles: Hollywood; Beverly Hills

Area: four linear miles

Key Words: Pleistocene Alluvium, San Pedro Formation, fossils

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MANAGEMENT SUMMARY

Paleontological mitigation for 2017 is reported here for the Purple Line Extension (PLE) Section 1 excavation work performed by the Los Angeles County Metropolitan Transportation Authority (Metro) and Federal Transit Administration (FTA). All paleontological work was conducted in compliance with the Paleontological Resources Monitoring and Mitigation Plan (PRMMP). At the La Brea, Fairfax, and La Cienega station sites, full time paleontological monitoring was conducted for two shifts per day, six days a week, in all cases where excavation was conducted at depths requiring mitigation.

Fossil vertebrates recovered from April through December at the La Brea Station site included a mammoth femur, a camel radioulna, and a horse tooth and ankle bone, all from the Quaternary older alluvium, as well as fragments of whale skull and rib from the underlying marine strata. This latter site also yielded several fossil wood portions. Bison vertebrae and a turtle scute were found at the Fairfax Station site in June 2017, followed by a proboscidean toe bone in September. No fossils were found at the La Cienega station site.

Fossil specimens recovered prior to 2017 were cleaned and stabilized and are now ready for formal identification. Specimens recovered during 2017 are in the process of cleaning and stabilization, which will continue during 2018; this work is essential prior to analysis and refinement of the identifications. In addition, sediment samples have not yet been washed or bone from them identified; this laboratory work will be conducted in 2018.

Planned excavations for 2018 include the La Brea, Fairfax and La Cienega stations and the tunneling machine drop shaft at Western. Additional fossil finds are anticipated in 2018.

INTRODUCTION

PURPOSE OF STUDY

This report documents the progress of the paleontology mitigation measures for the Purple Line Extension (PLE) project performed by the Metro and the FTA through 2017. All paleontological work was conducted in compliance with the Paleontological Resources Monitoring and Mitigation Plan (PRMMP; Gust 2013). Per this plan, full time paleontological monitoring is required for open excavations which include stations, trenches, cross shafts, etc. at any depth below ten ft. Tunneling, drilling and piles are exempt from monitoring.

SECTION 1 DESCRIPTION & EXCAVATIONS

The PLE project is located in Los Angeles, California. Only Section 1 of the project, extending from La Brea Station westward to La Cienega Station is reported here (Figure 1). The project alignment will extend heavy rail transit, in subway, from the existing Metro Purple Line Wilshire/Western Station to the west. The separated right-of-way will be in a tunnel, with the top of the tunnel at least 30 feet and up to 70 feet below the ground surface.

La Brea Station excavations continued throughout 2017. The upper ten feet of the sediments were documented as artificial fill and were not monitored. Excavations at depths below ten feet were monitored on a full time basis. Large mammal fossils recovered during 2017 included a mammoth thigh bone, camel forearm, horse tooth and ankle bone, and whale skull and rib fragments. Numerous pieces of fossil wood were also recovered.

Monitoring was also conducted at Fairfax Station throughout 2017. Open excavations such as trenching and potholing were monitored and spot-checked respectively. Vertebrate fossils recovered in 2017 included a turtle scute, a proboscidean toe bone, and parts of two bison vertebrae.

Work at La Cienega Station continued throughout 2017. Open excavations such as trenching and potholing were monitored and spot-checked respectively. No fossils were recovered in 2017 from this station.

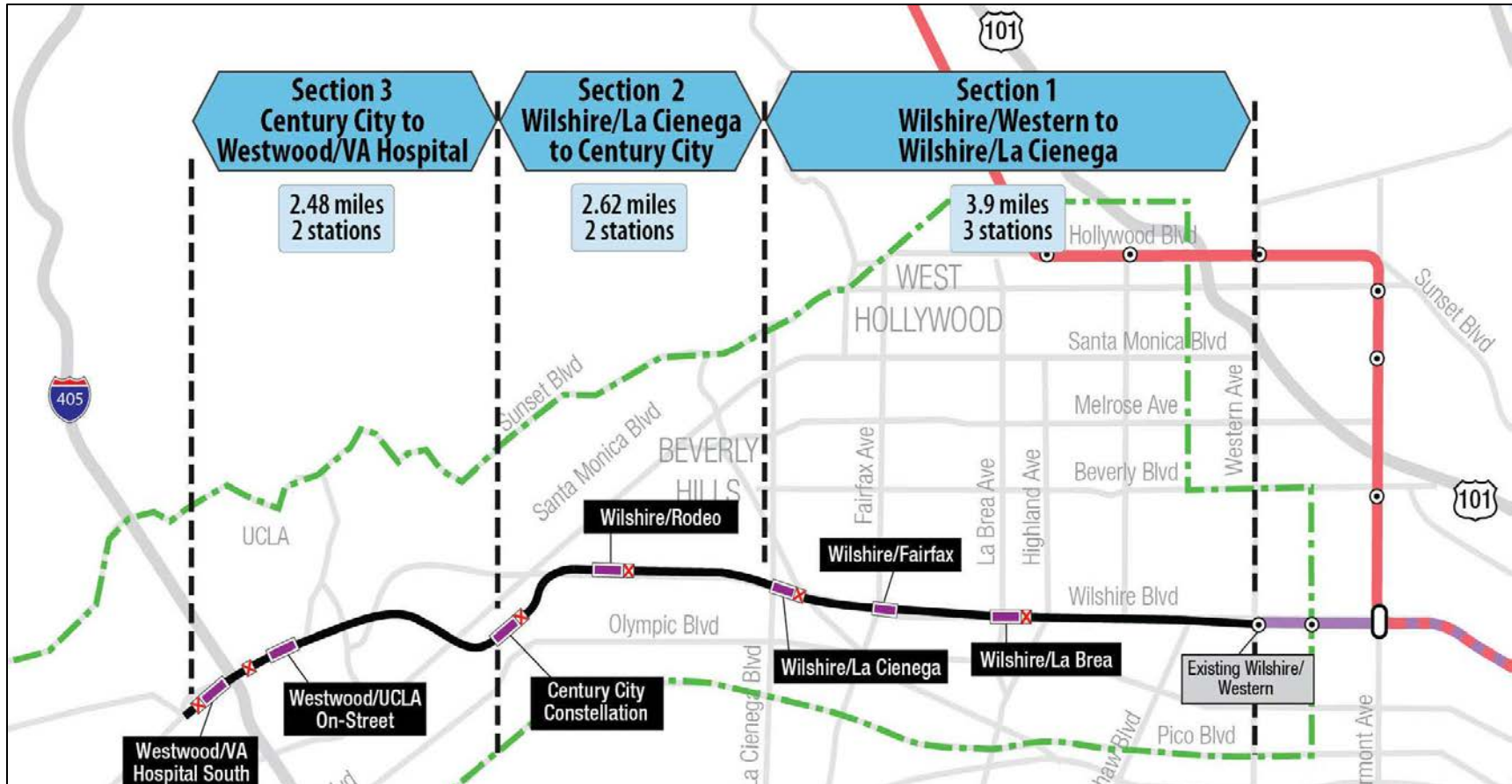


Figure 1. Project Sections and Components

PERSONNEL

Name	Role	Highest Degree Earned	Years of Experience
Sherri Gust	Principal Investigator	MS Anatomy (Evolutionary Morphology)	38
John Harris	Museum Coordination	PhD Geology	46
Eric Scott	Program Manager	MA Anthropology (Biological)	33
Kim Scott	Field and Laboratory Director	MS Biology (Paleontology emphasis)	21
Ashley Leger	Assistant Field Director	PhD Geology and Geological Engineering	10
Holly Duke	Supervisor	BA Archaeology; BA History	6
Andre Simmons	GIS Supervisor	MA Anthropology	7
Molly Valasik	GIS Supervisor	MA Anthropology	8
Candice Brennan	GIS Technician	MA Anthropology	3
Megan Wilson	GIS Technician	MA Anthropology	10
Bethany Ader	Monitor	BS Earth and Planetary Sciences	7
Summer Austin	Monitor	MSc Science (Archaeology)	3
Janis Basuga	Monitor	BS Geology	1
Matthew Cappetta	Monitor	BA Anthropology	3
Alexis Francois	Monitor	BA Anthropology	<1
Eric McDonald	Monitor	MS Geology	5
Jennifer McElhoes	Monitor	MA Anthropology	3
Janell Mort	Monitor	MA Anthropology	13
Jasmyn Nolasco	Monitor	MS Geology	1
Francisco Palacios	Monitor	BS Geology	1
Cassidy Sharp	Monitor	MSc Archaeological Science	3
Marc Serrano	Monitor	BA Anthropology	3

RESOURCE CONTEXT**GEOLOGIC SETTING**

The project area is situated in the Los Angeles Basin, south of the Santa Monica Mountains. This basin is bounded to the north by the Santa Monica Mountains, to the east by the Santa Ana Mountains and associated hills (Puente/Chino, San Jose, and Repetto), to the south by the San Joaquin Hills and the Pacific Ocean, and to the west by the Palos Verdes Hills and the Pacific Ocean. This area is part of the northernmost Peninsular Ranges geomorphic province. The

Peninsular Ranges are a series of mountain ranges separated by northwest-trending valleys, subparallel to faults branching from the San Andreas Fault which for the most part lies to the east of this geomorphic province (Wagner 2002).

STRATIGRAPHY

Fairly detailed geological mapping of the alignment has been completed at a scale of 1:24,000 or less by several authors since 1990 (Dibblee and Ehrenspeck 1991a, 1991b; Yerkes and Graham 1997a, 1997b; Yerkes 1997a, 1997b; Bedrossian et al. 2012; Parsons Brinkerhoff 2014). The most detailed of these was the geotechnical report completed by Parsons Brinkerhoff, which included bore-hole logs that provided depths and thicknesses of the units present (Parsons Brinkerhoff 2014: Appendix A). These data enabled Cogstone to determine where paleontological monitoring would be necessary.

Geological units encountered within the alignment during 2017 monitoring efforts include: modern (less than 200 years old¹) artificial fill; Holocene to late Pleistocene[?] (less than 120 thousand years old [ka]) Quaternary younger alluvium; late Pleistocene (11.7 ka to 126 ka) Quaternary older alluvial deposits including the “Lakewood Formation²”; the middle Pleistocene (270 ka to 900 ka³) San Pedro Formation; and the early Pleistocene to early Pliocene (1.0³ million years old [Ma] to 5.3 Ma) Fernando Formation (Yerkes et al. 2005, Cohen et al. 2017, Parsons Brinkerhoff 2014). Extensive descriptions and cross-sections of the sediments encountered at the PLE Exploratory Shaft at Ogden Drive and Wilshire Boulevard can be found in Scott et al. (2014).

ARTIFICIAL FILL, MODERN

Discontinuous deposits of artificial fill were present at the La Brea, Fairfax, and La Cienega Stations, as deep as 7 ft. below the current surface at those locations (Metro 2011: Appendix A). This fill was generally imported from other locations for construction purposes in the past. Artificial fill sediments generally consist of silty sand, silt, clay and gravel of varying colors, and may include historical trash (K. Scott, pers. obs.; Scott et al. 2014).

QUATERNARY YOUNGER ALLUVIUM, HOLOCENE TO LATE PLEISTOCENE

While Yerkes et al. (2005) identified the deposits as late Pleistocene (less than 126 ka), several prior authors (Dibblee and Ehrenspeck 1991a, 1991b; Yerkes and Graham 1997a, 1997b; Yerkes 1997a, 1997b) identified these sediments as Holocene (less than 11.7 ka), while Bedrossian et al. (2012) classified these deposits as Holocene to late Pleistocene (11.7 ka to 126 ka). All of the authors consulted mapped these deposits along the alignment to the west of South La Jolla Avenue and Wilshire Boulevard.

The younger alluvium was deposited onto alluvial fans and floodplains by streams flowing southward from the Santa Monica Mountains (Dibblee and Ehrenspeck 1991a, 1991b; Yerkes et

1 Dates are for the geological time period (Cohen et al. 2017) unless otherwise noted.

2 Geological units in quotes are not formally recognized by the United States Geological Survey

3 Quinn et al. 2000

al. 2005; Parsons Brinkerhoff 2014). The sediments are typically unconsolidated sands, silts, and clays up to 30 feet thick that incise the Quaternary older alluvial deposits/ “Lakewood Formation” (Yerkes et al. 2005, Metro 2011).

QUATERNARY OLDER ALLUVIAL DEPOSITS, LATE PLEISTOCENE

Mapped as older alluvium (Yerkes and Graham 1997a, 1997b; Yerkes 1997a, 1997b; Parsons Brinkerhoff 2014) and older alluvial fan sediments (Dibblee and Ehrenspeck 1991a, 1991b; Yerkes et al. 2005, Bedrossian et al. 2012) by different authors, these sediments were deposited over the same topography as the younger alluvium but in the wetter environment of the Pleistocene. It is possible that these deposits are Holocene in age at the surface.

Deposited onto alluvial fans and floodplains by streams flowing southward from the Santa Monica Mountains, sediments are typically brown to grey, slightly to moderately consolidated sands, silts, and gravels of stream channels (Dibblee and Ehrenspeck 1991a, 1991b; Yerkes et al. 2005; Parsons Brinkerhoff 2014). Stream sands can interfinger with clays to gravels of overbank deposits and alluvial fans and the unit can range between 15 and 35 feet thick (Parsons Brinkerhoff 2014). The surfaces of these deposits can be dissected with moderately to well-developed soils (Yerkes et al. 2005).

The “Lakewood Formation” is a name typically used by local hydrogeologists for older alluvium related to the aquifer of the Los Angeles to northern Orange County area (Department of Water Resources [DWR] 1961). With the exception of the late Pleistocene older eolian dune sand, DWR (1961) all late Pleistocene older alluvial deposits such as the Palos Verdes Sand, the “Sunny Hill Formation”, and the “San Dimas Formation” were lumped into the new “Lakewood Formation”. Most other geologists not working in hydrogeology do not recognize the “Lakewood Formation”. Parsons Brinkerhoff (2014) described the unit as underling, but lithologically identical to, the finer portions of the older alluvium. Beds of the “Lakewood Formation” are laterally continuous and its base contains marine bivalve fragments.

SAN PEDRO FORMATION, MIDDLE PLEISTOCENE

The San Pedro Formation occurs stratigraphically below the late Pleistocene alluvial deposits. Deposited primarily in a shallow marine environment, sediments consist of unconsolidated silts and sands with some pebbles and cobbles (Yerkes et al. 2005, Scott et al. 2014). Shallow marine invertebrate fossils are common and over 4,000 were collected during the PLE Exploratory Shaft excavations (Powell and Stevens 2000, Yerkes et al. 2005, Scott et al. 2014).

Jacobs (2007) estimated the age of these sediments as between 200 ka to 500 ka; however, Quinn et al. (2000) later estimated these sediments to date to between about 270 ka to 900 ka. At the PLE Exploratory Shaft, neither the 665 ka Lava Creek Ash nor the 760 ka Bishop Ash were encountered, although they had been present in cores of Hancock Park (Quinn et al. 2000).

FERNANDO FORMATION, EARLY PLEISTOCENE TO EARLY PLIOCENE

The marine Fernando Formation underlies the San Pedro Formation and consists of massive, yellowish-brown to olive-grey, siltstone to claystone (Parsons Brinkerhoff 2014). The Fernando

Formation was identified as shallow as 65 feet below the surface. However, it occurs below depths where it would be impacted at the La Brea, Fairfax or La Cienega Stations (Metro 2011).

PALEONTOLOGY

ARTIFICIAL FILL, MODERN

Although some fossils may occasionally be imported in fill, these fossils lack any original context, and so do not have the scientific information to be considered significant.

QUATERNARY YOUNGER ALLUVIUM, HOLOCENE TO LATE PLEISTOCENE

No fossils have been found to date shallower than 15 feet deep at the La Brea, Fairfax, or La Cienega Station excavations. However, late Pleistocene fossils have been found nearby in asphaltic seeps in Hancock Park at depths as shallow as 4 feet. These fossils derive from organisms trapped at the surface but subsequently buried by the slow flowing asphalt. Although no asphaltic deposits of this type have been found during the PLE excavations to date, there is still potential for them at the Fairfax Station until the base of the “La Brea Zone” is reached at about 55 feet deep (Gust 2013).

QUATERNARY OLDER ALLUVIAL DEPOSITS, LATE PLEISTOCENE

Extinct animals recovered from non-asphaltic deposits near to PLE Segment 1 include horse, bison, mammoth, and mastodon (Metro 2010). Fossils occur more abundantly in places where the alluvium contains asphaltum seeps. These acted as traps for animals and plants and preserved their remains. Fossils trapped in this manner are conserved in La Brea Tar Pits and Museum, which houses more than four million specimens ranging from mammoths to saber toothed cats to insects (Harris and Jefferson 1985, Fraser and Sues 2013).

SAN PEDRO FORMATION, MIDDLE PLEISTOCENE

The San Pedro Formation has produced remains of pinnipeds, whales, sea turtles, birds, fish, sharks, rays, and numerous marine invertebrates (Scott et al. 2014, UCMP 2017). While this formation is primarily nearshore marine, fossils of extinct terrestrial animals also occasionally washed into the ocean by streams or rivers and were also preserved.

FERNANDO FORMATION, EARLY PLEISTOCENE TO EARLY PLIOCENE

The Fernando Formation has produced fossils of marine mammals, birds, fish, and invertebrates in the Los Angeles Basin (Metro 2010).

METHODS

PALEONTOLOGICAL AWARENESS TRAINING

Paleontological resources awareness training was presented to all members of the construction crew prior to the start of their work on the project. At the behest of Metro, Cogstone developed a PowerPoint presentation with audio. Skanska-Traylor-Shea (STS) provided this paleontological resources awareness training to all new employees as needed throughout 2017. STS-provided trainings occur weekly for all new STS staff, and trainees each receive a hardhat sticker that must be on their hardhats at all times to verify training. Cogstone field monitors provide the training after the daily morning safety meeting to any workers who lack stickers. A worker whose hardhat has been replaced due to its expiration date receives a review of the training from the field monitor, and is then issued a new sticker.

Training sessions are also currently being given quarterly by a Cogstone representative in the Crenshaw construction yard for any employees who have not had the training. There have been very few attendees for these sessions, as new employees of both STS and Metro complete the PowerPoint training before going to the jobsite.

MONITORING

Paleontological monitoring was required at the La Brea Station for any excavation more than ten feet below the surface. Drilling, utility removals, and piling operations were exempted from monitoring in the PRMMP. Potholing and new trenching for utilities were spot-checked. During full-time monitoring, monitors were required to observe all areas of active excavation, often in close proximity to the equipment. Monitors required a mandatory clear line of site in close proximity to the fresh cut surface in order to look for fossils.

The number of monitors varied with the number of excavations being carried out as each piece of excavation equipment present in a non-adjacent area necessitated a monitor. Typically, larger crews were onsite during the day shift and two areas of the La Brea Station were being excavated simultaneously. This required two full time monitors to be present during the day shift. Swing shift operated with a smaller crew, and thus only one full time monitor was required. With advance notice of additional excavation localities, more monitors were provided for the site. Fairfax Station has slightly different monitoring requirements, and the assistant field director has been in close contact with the foreman so that monitors could be provided when trenching or other associated excavation activities were taking place. When excavations at the La Brea Station paused, the other station areas were spot checked to be sure the crews were compliant. Additional monitors were required during decking operations as more areas were being manipulated simultaneously and longer hours were worked.

The field director or assistant field director was present at the excavation daily to supervise fossil recovery activities and to provide necessary breaks for the monitors. Personnel rotated between monitoring and fossil recovery in approximately two hour shifts. Monitoring activities and fossil

recoveries were documented on the appropriate paperwork, all of which is included in the administrative record for the project.

FOSSIL RECOVERY

Fossils larger than one inch were cordoned off to permit recovery. Larger fossils that required stabilization prior to movement were encased in a plaster jacket. The dirt around larger fossils was excavated to leave the fossil on a column of dirt. The fossil was then covered with tissue paper to cushion it, burlap was cut into strips, dipped into wet plaster and then applied to the fossil.

All fossils and sediment samples were given a field tag with project and site information including a unique field number. Cogstone field numbers have the following format: year, month, date, person's initials, period, discovery number and letter for multiple finds in same location for that day. For example 2016_9_08_BRA.1b informs us that the fossils were discovered in 2016 by Bethany R. Ader on September 8th, that this was her first discovery location of the day and that this particular fossil was the second one observed.

FIELD DOCUMENTATION

Every fossil requires documentation with a standard set of data. This normally includes one or more UTM readings using a global positioning system (GPS) unit in areas where this was accessible, an accurate elevation measurement if possible, the depth below surface for Holocene and Pleistocene fossils, a lithology, and sometimes a true north reading. Discoveries under the deck could not be mapped with a GPS due to the signal "bounce" and restrictions on electronic equipment below the deck. Instead fossils were mapped relative to the nearby piles. Distance and compass readings were measured to I-beams and elevations were measured from known elevations on the overhead decking beams. Lithology was recorded using Munsell Soil Color charts and standard sediment grain size measurements. The data were recorded both on a fossil recovery sheet and a field tag to remain with the fossil.

FOSSIL PREPARATION

Many fossils require only cleaning and stabilization through the use of small tools and hardeners. Each jacket or fossil was photographed before preparation, at mid-point in preparation and when completed for documentation (see Figure 3 for example). All scale bars in all photos are in centimeters. Cleaning usually involved brushing and sometimes use of water. Hardeners used were recorded in the catalog for each specimen and included cyanoacrylate and Paraloid B-67 in acetone.

These same hardeners were used to "glue" pieces of fossils together. In some cases, a stronger adhesive was necessary and in those cases archival epoxy was utilized. Each fossil was labeled using archival ink with the project name, field number, true north arrow (transferred from jacket)

and a small white rectangle was painted on for use by the repository in recording accession numbers (Figure 4).

Sometimes larger fossils required a “cradle”. Cradles were usually a form-fitted plaster called Hydrocal lined with Tyvek paper to provide support and prevent breakage during long term storage or transport. Typical fossils that required cradles were mammoth ribs. Some fossils were too fragile to be removed entirely from their jackets. These were prepared as far as possible and then the jacket reduced to simulate a cradle. An example of this was the mammoth scapula.

All matrix samples were returned to the Cogstone lab and washed using a mechanical screen washing unit with six 1/16th inch screens. Sediments removed from jackets were also washed in this manner. The material remaining in the screen after washing is called concentrate and was then hand-sorted using a microscope and identifiable bone was picked out and placed into vials by field number. The vials were sorted by Sherri Gust into mammal, bird, fish, reptile and amphibian before they were sent to specialists for identification. These microfossils are not individually numbered.

CATALOG

The draft inventory catalog for the project was developed from the fossil recovery sheets and included locality number, field number, field identification, coordinates, elevation, depth below surface, lithology description and other information. Laboratory information such as final identifications is added later. No catalog numbers have been assigned as microfossils need to be added first.

MUSEUM COORDINATION

Cogstone worked closely with the staff of the Tar Pits Museum (formerly the George C. Page Museum of La Brea Discoveries) (TPM) and its parent facility, the Natural History Museum of Los Angeles County (NHMLAC), to coordinate their participation per the Memorandum of Understanding (MOU) (see PRMMP). Numerous meetings have taken place and the museum receives updates and fossil find notifications. Additionally, Cogstone coordinated with the TPM to facilitate preparation of recovered fossils at the museum in public view (see below).

RESULTS

PALEONTOLOGICAL AWARENESS TRAINING

During 2017, paleontological awareness training was presented by the contractor using a PowerPoint with audio provided by Cogstone. Trainings were given on an as-needed basis.

MONITORING

Work to date has been in Section 1 of the PLE project and monitoring has taken place at the La Brea, Fairfax and La Cienega Stations (Table 1; Appendix A). Weekly and monthly monitoring summaries have been provided to Metro detailing the monitoring efforts.

La Brea Station has required full time monitoring during the duration of 2017, but is nearing completion. Monitoring is expected to be completed at La Brea Station before February 2018. Monitoring of Fairfax Station and La Cienega Stations is ongoing. Fairfax Station is still currently excavating in the “Paleo Zone” and the crews are cooperating with the lift restrictions. It is anticipated that excavations are nearing the base of the Paleo Zone. La Cienega Station will finish the last weekend of decking after the first of the year and station excavation will follow. It is also estimated that excavations at Western Yard will commence in the first quarter of 2018.

TABLE 1. PLE MONITORING SUMMARY - 2017

Location	Monitoring Dates	Status
La Brea Station	04-20-2016 to present; decking complete	nearly complete
Fairfax Station	08-05-2016 to present; decking complete	ongoing
La Cienega Station	08-10-2017 to present; decking nearly complete	ongoing

FOSSIL LOCALITIES

Field numbers were assigned to each fossil or sample recovered. Each was documented according to the Paleontological Resources Monitoring and Mitigation Plan (Gust 2013). These field localities were then subsumed into larger paleontological localities (e.g., “PLE LB 001”) based upon location, depth below surface, lithology, and other contextual data. This section discusses the localities and sediments, while the next section discusses the fossils. The discussion is organized by station and by fossil locality number. (Note: locality PLE LB 002 consists of discoveries made in 2016; although fossils from these localities are discussed later herein, the locality itself was reported last year)

LA BREA STATION

PLE LB 001: This locality occupies the western portion of the La Brea Station excavation, and includes field localities 2017_04_12_BRA.1, 2017_04_12_BRA.2, 2017_04_13_JAB.1, and 2017_04_13_JMN.1 (Figure 2). Fossils recovered from PLE LB 001 include remains of Columbian mammoth (*Mammuthus columbi*), extinct large camel (*Camelops hesternus*), and an indeterminate large mammal, as well as fossilized wood fragments. These fossils were recovered from Quaternary older alluvial sediments at depths between 17 ft. and 25 ft. below the surface. Sediments were yellow to grey to brown in color and consisted of variably sorted, poorly indurated clays, silts, and sands. The presence of subrounded grains throughout much of the locality suggests the presence of a paleo stream or small river flowing through the area.

PLE LB 003: This locality is situated between piles 35 and 40, and includes field numbers 2017_10_27_BRA.1, 2017_11_21_CDS.1, and 2017_12_19_SA.1. This locality produced multiple portions of fossilized wood from sediments of the San Pedro Formation, from depths between 73 ft. and 78 ft. below the surface. Sediments consisted of dark grey to dusky green, moderately well sorted, variably indurated sands, silts, and clays.

PLE LB 004: This locality lies in the vicinity of piles 33 to 53, and includes field numbers 2017_06_13_MES.1, 2017_07_12_JMN.1, and 2017_07_12_JMN.2. Fossils recovered from PLE LB 005 include a fourth premolar tooth and an astragalus (ankle bone) of extinct large horse (*Equus occidentalis*), as well as a rib fragment from an indeterminate large mammal. These fossils were recovered from Quaternary older alluvium at elevations between 151 ft. and 165 ft. The alluvial sediments here consisted of yellowish to light olive grey, moderately well sorted, nonindurated, fine- to medium grained sands with small amounts of silt and clay.

PLE LB 005: This locality includes field number 2017_12_19_SA.1. Numerous segments of fossil wood were recovered during the installation of the French drain, at location 23, near pile 35, from approximately 78 ft. below the surface. Sediments consisted of greyish olive, moderately sorted, poor to nonindurated, subrounded to rounded, very fine to very coarse grained sand with small inclusions of very fine pebbles.

PLE LB 006: This locality includes two field numbers, 2017_12_14_JAB.1 and 2017_12_16_JMN.1, discovered near piles 122 and 123 at an elevation of 113 ft. to 115 ft. This locality yielded a fragment of marine mammal bone and fossil wood fragments from sediments of the San Pedro Formation. Sediments here consisted of medium gray to grayish blue poorly sorted, subrounded to angular, very fine- to medium-grained silicious sand, with small percentages of siliceous clay and silt.

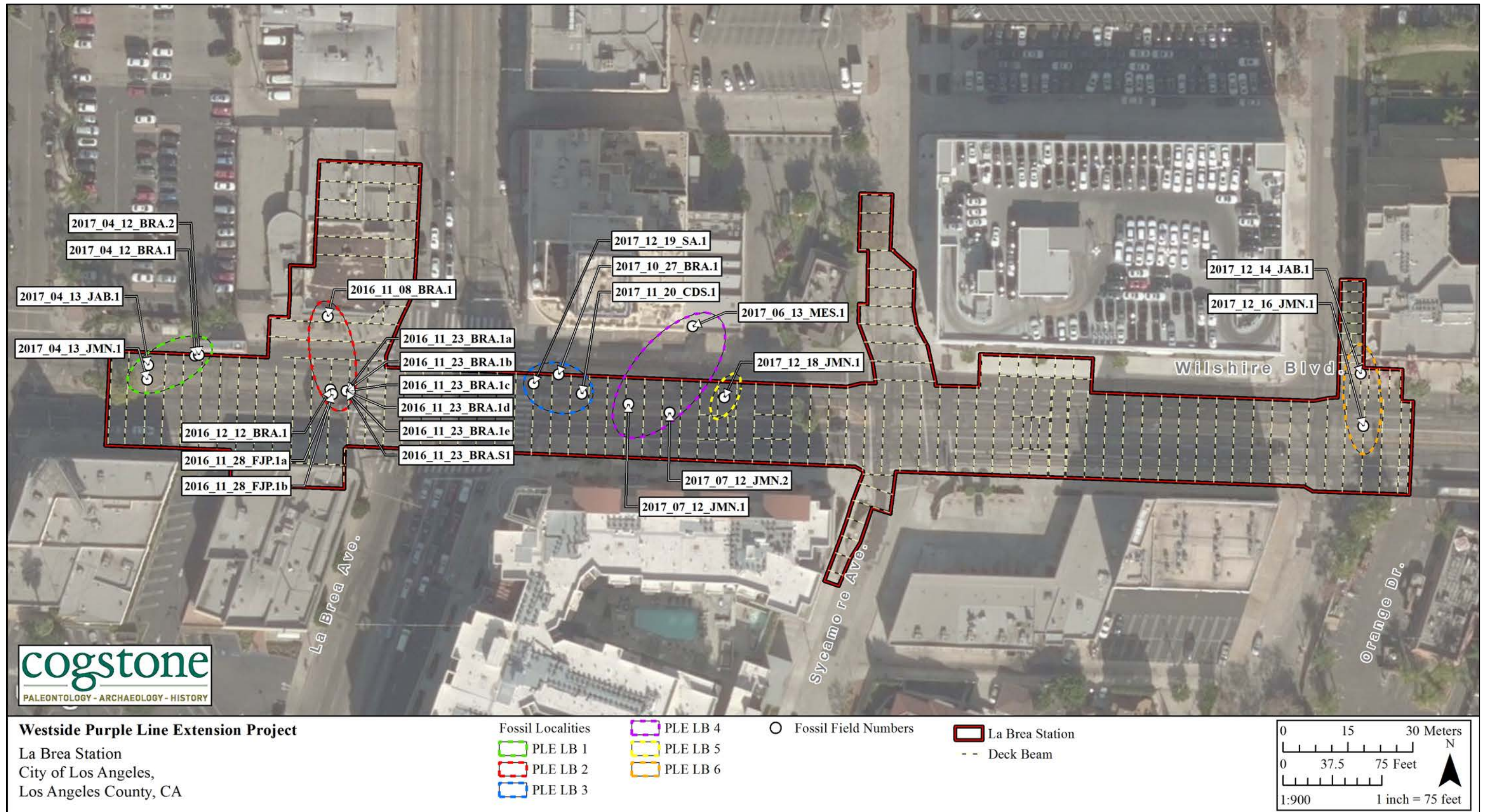


Figure 2. La Brea Station Fossil Location Map

Not *In Situ* Finds

This find contains only one field number, 2017_03_22_BRA.1, discovered in a spoil pile near piles 57 and 58 at an elevation of 178 ft. The fossil is a bone fragment from an indeterminate large mammal.

This find includes field number 2017_07_27_MES.1, and yielded a fossilized bone fragment of an indeterminate large mammal from Quaternary older alluvium at an elevation of 155 ft.

This find includes only one field number, 2017_10_30_BRA.1, and yielded a fossil bone fragment from a depth of 74 ft. below the surface near piles 167 and 168.

This find includes field number, 2017_11_20_BRA.1, which consists of multiple portions of large marine mammal bone; at least one of these portions has been preliminarily identified as part of a whale squamosal, or cheek bone.

This find includes field number 2017_12_18_JMN.1, a large marine mammal bone.

FAIRFAX STATION

PLE FX 001: This locality yielded two fossil bison bones, an atlas (first cervical or neck) vertebra (field number: 2017_06_19_JMN.1a) and a fragment of another neck vertebra (2017_06_19_JMN.1b), recovered from between elevation 145.9 feet and 147 feet near pile 254 (Figure 3). The fossils derived from Quaternary older alluvial sediments, which were yellowish grey-brown to dusky yellow, poorly sorted, sandy mudstones with clay, silt, very fine- to coarse grained sand, and a small percentage of intermixed pebbles.

PLE FX 002: This locality includes a single field number, 2017_06_27_ANF.1, which produced a partial scute of a turtle from Quaternary older alluvium near pile 227 at a depth of 13.3 ft. below the surface. Sediments were dark greenish-grey, well sorted, poorly- to non-indurated, sandy claystone with clay, some very fine- to fine-grained, subrounded to round sand, and a small percentage of coarse-grained, subangular pebbles (5%).

Not *In Situ* Finds

This find includes a single field number, 2017_09_22_JAB.1, which consisted of a phalanx (toe bone) from an indeterminate proboscidean, either mastodon or mammoth.

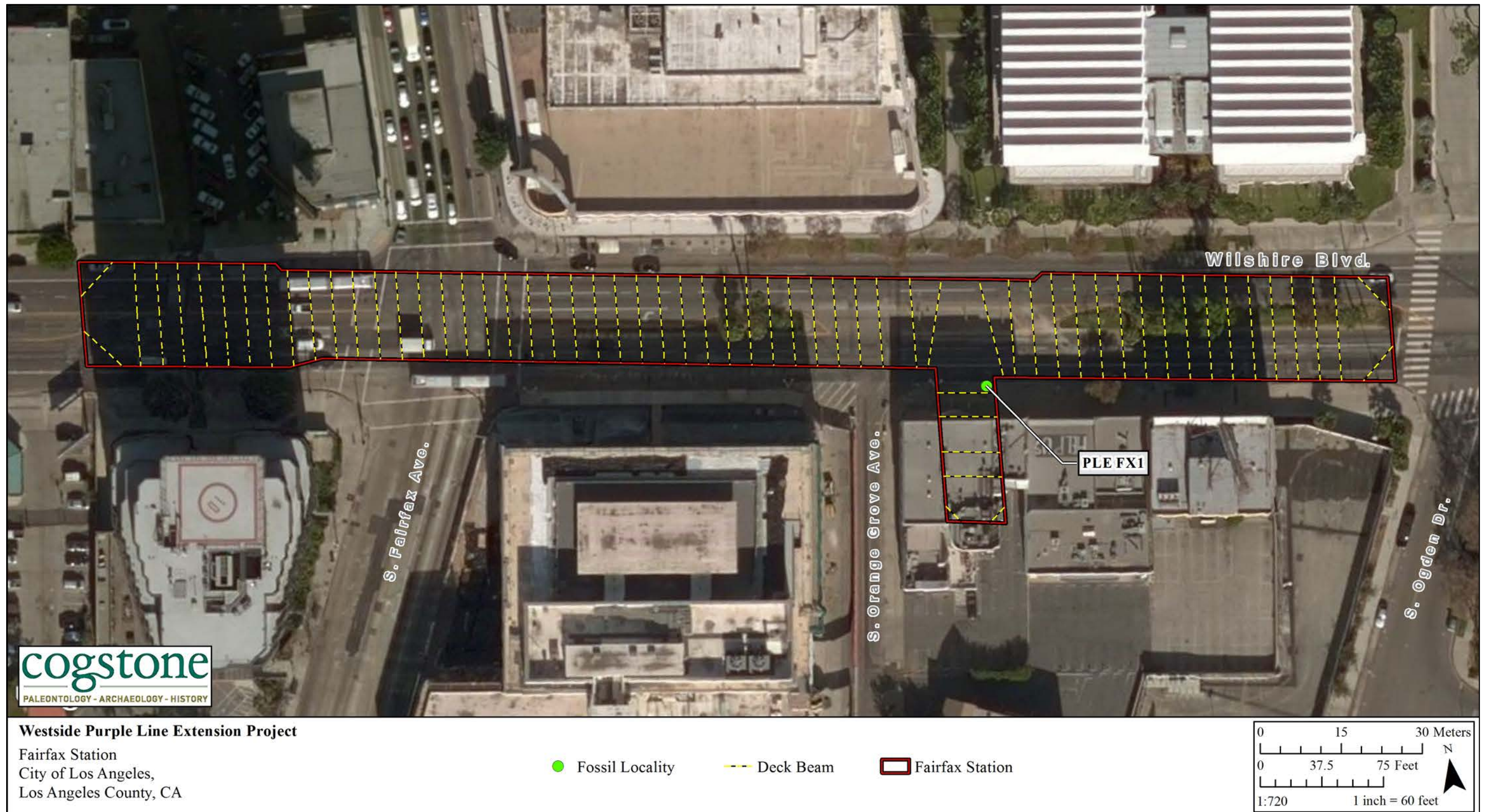


Figure 3. Fairfax Station Fossil Location Map

FOSSILS RECOVERED

Vertebrate and invertebrate fossils were recovered episodically throughout 2017. The results below include both analyses conducted following laboratory preparation and analysis, and provisional interpretations based upon field observations.

LA BREA STATION FOSSILS

PLE LB 001: A discovery, made on April 12, 2017 (field number: 2017_04_12_BRA.1) consisted of fragments of fossil wood from 21 ft. below the surface. These wood fragments are not sufficiently complete to permit more precise identification.

Also on April 12 at locality PLE LB 001, a forelimb fossil from the extinct large camel species *Camelops hesternus* was discovered from Quaternary older alluvium at a depth of 17 ft. below the surface (field number: 2017_04_12_BRA.2). The fossil was a largely complete left radioulna, the fused forelimb bones that extend from the wrist to the elbow (Figure 4). This is the first fossil of extinct camel identified from the PLE excavations. Preparation and stabilization of this specimen is ongoing, but will be completed in early 2018.



Figure 4. Left radioulna of *Camelops hesternus* from PLE LB 001 (field locality 2017_04_12_BRA.2), ventral view; elbow joint is to the left (scale = 5 cm)

Two further discoveries were made at PLE LB 001 on April 13, 2017. One of these (field number: 2017_04_13_JAB.1) consisted of a partial left femur of a proboscidean, discovered during excavations for piles 265-286 at about 20-25 ft. below the surface. Subsequent partial preparation of the fossil revealed that it was a left femur of an extinct Columbian mammoth (Figure 5). The other find for that day (field number: 2017_04_13_JMN.1) consisted of multiple fragments of a large mammal rib. Although the fossil is not sufficiently complete to permit specific identification, the large size of the fragments suggests that the rib is derived from a proboscidean, either mastodon or mammoth.



Figure 5. Partial left femur of *Mammuthus columbi* from PLE LB 001 (field locality 2017_04_13_JAB.1), posterior view; knee joint is to the right (scale = 10 cm)

PLE LB 003: Two fragmentary fossils were recovered from the La Brea Station excavations in October. These included poorly preserved wood portions recovered at an elevation of 121 ft. (field number: 2017_10_27_BRA.1). This fossil is interpreted to derive from the fossiliferous San Pedro Formation, which underlies Quaternary older alluvium in this region.

PLE LB 004: A fossilized tooth of an extinct large horse was recovered on June 13, 2017 (field number: 2017_06_13_MES.1). The fossil was 29.75 feet below the surface in Quaternary alluvium. Following laboratory cleaning and stabilization, the tooth was identified as an upper right fourth premolar of a large species of *Equus*, probably the Western horse *Equus occidentalis* (Figure 6).



Figure 6. Upper right fourth premolar tooth of large horse, *Equus* sp. cf. *E. occidentalis*, from PLE LB 005 (field locality 2017_06_13_MES.1), side view to left, occlusal (wearing surface) view to right (scale = 1 cm)

PLE LB 005. On November 21, 2017 several poorly preserved unidentifiable wood fragments were recovered (field number: 2017_11_21_CDS.1), from the San Pedro Formation.

PLE LB 006. On December 16, 2017, two poorly preserved and unidentifiable wood fragments were recovered at PLE LB 009 from the San Pedro Formation between piles 122 and 123, at a depth of 83 ft. below the surface (field number: 2017_12_16_JMN.1).

Not In Situ Finds

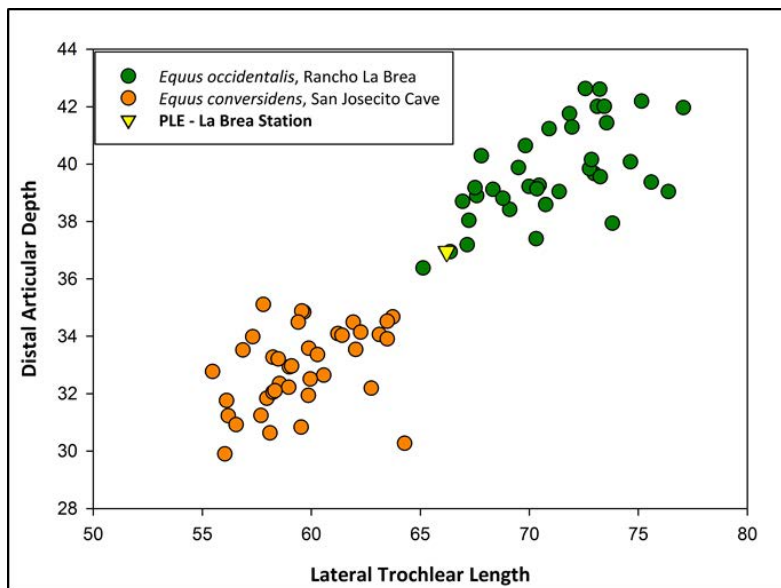
On March 3, 2017 a large mammal bone fragment (field number: 2017_03_22_BRA.1) was recovered from the back dirt of a pile excavation. The fragment has no features that would permit further identification.

On July 12a partial astragalus (ankle bone) of an extinct horse was collected (field number: 2017_07_12_JMN.2). The fossil was not *in situ*. Although broken, the fossil (Figure 7) was complete enough to permit measurements for comparison with other known Pleistocene horse species. Based upon size, the fossil likely represents a small individual of the large horse species *Equus occidentalis* (Figure 8).



Figure 7. Partial right astragalus of extinct horse from PLE LB 005 (field locality 2017_07_12_JMN.2), dorsal (top) view to left, medial (inner) view to right (scale = 1 cm)

Figure 8 (at right). Two dimensional size comparison plot of horse ankle bone from field locality 2017_07_12_JMN.2, showing measurements of the PLE specimen (yellow triangle) falling within the size range of the Ice Age horse species *Equus occidentalis* (green circles)



Also on July 12, a fossilized fragment of a large mammal rib was collected (field number: 2017_07_12_JMN.1).

On July 27, 2017 a fragment of fossil bone was collected (field number: 2017_07_27_MES.1). The fossil was found between piles 324 and 325, approximately 40 feet below the surface; however, it was not *in situ*.

On October 30, 2017 an unidentifiable mammal bone fragment (field number: 2017_10_30_BRA.1) from a depth of 120 ft. was recovered. The bone fragment is interpreted a large marine mammal.

On November 20, 2017, multiple poorly preserved large marine mammal bone fragments were recovered in spoils piles. Although not sufficiently complete to permit assignment to species, the nature of the remains indicates that they derive from a large marine mammal, most likely a whale.

On December 14, 2017 a large mammal rib segment (field number: 2017_12_14_JAB.1) from the San Pedro Formation was recovered from spoil piles about 78 ft. below the surface. The fossil is too incomplete to be identified other than as large marine mammal.

On December 18, 2017 a fragment of fossilized bone from an indeterminate large marine mammal was discovered (field number: 2017_12_18_JMN.1). It was not *in situ*.

The final fossil discovery of 2017 on December 19 consisted of several poorly preserved unidentifiable wood fragments (field number: 2017_12_19_SA.1), recovered from the San Pedro Formation about 78 ft. below the surface near pile 35.

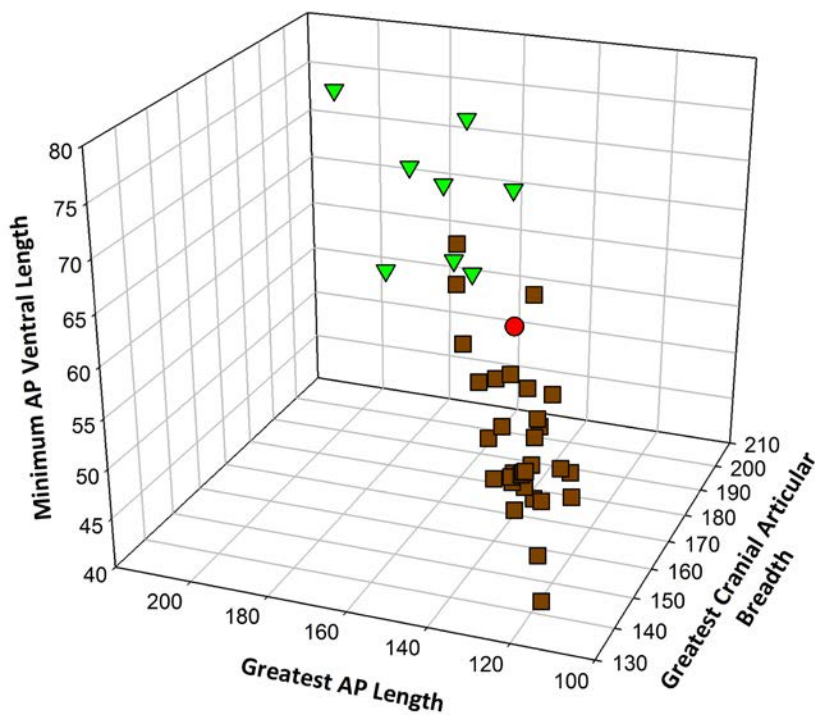
FAIRFAX STATION FOSSILS

PLE FX 001: The first discovery of 2017 at this station was a vertebra of an extinct bison (field number: 2017_06_19_JMN.1a), as well as a fragment of a second vertebra (field number: 2017_06_19_JMN.1b) recovered the next day. The original discovery, found 21 feet below the surface in Quaternary older alluvium, was identified after cleaning and stabilization as an atlas vertebra, the first vertebra in the neck just behind the skull (Figure 9). The size of the fossil indicated that the bone came from a very large animal, and measurements taken on the specimen confirm this (Figure 10). It is most likely that the fossil represents a large, male individual of the extinct species *Bison antiquus*.



Figure 9. Atlas of *Bison antiquus*, ventral view, from PLE FX 001 (field locality 2017_06_19_JMN.1a)

Figure 10. Three dimensional size comparison plot showing measurements of the bison atlas vertebra from field locality 2017_06_19_JMN.1a (red circle) within the size range of fossils of *Bison antiquus* (brown squares), but smaller than the larger *B. latifrons* (green triangles)



The smaller vertebra fragment (field number: 2017_06_19_JMN.1b) was identified as a neural spine of a separate neck vertebra, possibly the fourth or fifth cervical vertebra (Figure 11). This specimen was initially interpreted to be a distinct discovery separate from the atlas (assigned field number 2017_06_20_JMN.1), but subsequent review confirmed that both fossils came from the same locality.



Figure 11. Neural spine of 4th or 5th cervical (neck) vertebra from PLE FX 001 (field locality 2017_06_19_JMN.1b), side view (to left) and front view (to right) (scale = 1 cm)

Not In Situ Finds

On June 27, 2017, a partial scute of a turtle was recovered (field number: 2017_06_28_ANF.1). This most likely represents the California pond turtle *Actinemys marmorata* (Figure 12).

Figure 12. Partial scute of pond turtle, most likely *Actinemys marmorata*, from PLE FX 002 (field locality 2017_06_28_ANF.1)



A phalanx or toe bone of an extinct proboscidean (Figure 13) was discovered on September 22, 2017 (2017_09_22_JAB.1).

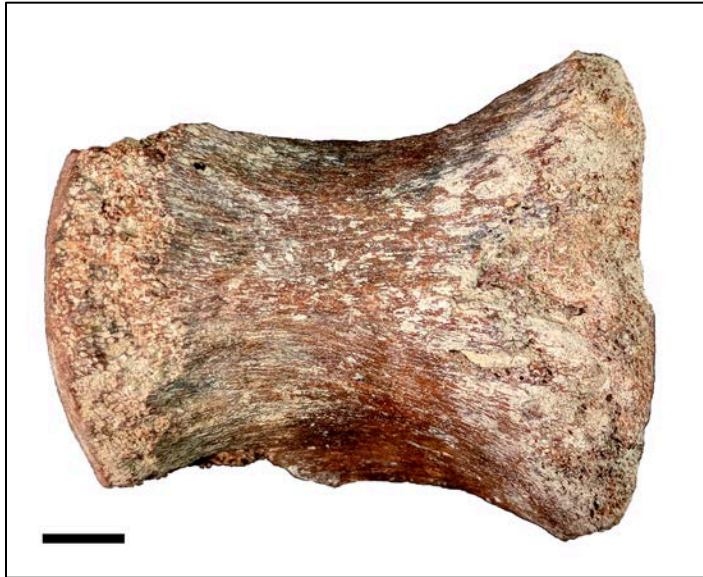


Figure 13. Phalanx (toe bone) of an indeterminate proboscidean, either mastodon or mammoth, from PLE FX no# (field locality 2017_09_22_JAB.1) (scale = 1 cm)

LABORATORY WORK

Laboratory work including preparation, stabilization, and analysis of recovered fossils took place throughout 2017. Fossils under review included those recovered prior to 2017 as well as those excavated over the past year. This section highlights some of the more intensive laboratory work conducted on specimens recovered in 2016 from the La Brea Station excavation.

JUVENILE MAMMOTH SKULL – “HAYDEN”

The most significant fossil identified thus far from the project was a largely complete skull of a juvenile mammoth (*Mammuthus columbi*) from locality PLE LB 002 (field number: 2016_11_28_FJP.1a, discovered in November 2016 at the La Brea Station excavation. Due to the orientation of the skull in the excavation, determining whether the fossil derived from a mastodon or a mammoth was not immediately possible. Following initial preparation of the specimen, however, the preserved teeth showed the ridged enamel plates characteristic of mammoths (Figure 14). This confirmed that the skull represented an individual of Columbian mammoth (*Mammuthus columbi*). Additionally, the preserved teeth were not from a fully adult animal. Based upon tooth eruption and wear, the skull was determined to be that of a juvenile mammoth equivalent to a 6-12 year old individual (following Agenbroad and Brunelle 1994).



Figure 14. Erupting molar teeth of juvenile mammoth from PLE LB 002 (field locality 2016_11_28_FJP.1a), exposed by early excavation, showing characteristic mammoth tooth morphology



Figure 15. Juvenile mammoth skull arriving at La Brea Tar Pits and Museum

In order to more fully prepare and stabilize the skull, Cogstone and Metro collaborated closely with the Tar Pits Museum (TPM) to move the fossils from Cogstone’s laboratory to the museum (Figure 15). This permitted preparation of the mammoth skull in the “Fishbowl” laboratory inside the museum (Figure 16). Because the “Fishbowl” is fully visible to the public, all visitors to the museum were able to see the Metro skull in various stages of preparation.



Figure 16. Preparation of juvenile mammoth skull in “fishbowl” laboratory of the La Brea Tar Pits and Museum

Work conducted during 2017 exposed the upper molars and the base of the skull and tusks of this individual. The exquisite preservation of the fossil made it exceptionally photogenic. Nicknamed “Hayden”, the skull became quite the media star. “Hayden” was featured on CBS’s “This Morning” and in multiple print sources including USA Today, Associated Press, and even the UK Daily Mail.

After the ventral side of the skull was prepared, Cogstone paleontologists planned the next steps with the Vertebrate Paleontology Preparator from the Natural History Museum of Los Angeles County (NHMLAC), the skull’s eventual repository. These steps involved construction of a “clam shell” bedding jacket that will safeguard the specimen yet allow scientists to study the skull from all sides. This archival-quality jacket was completed in the “Fishbowl” laboratory of the LBTP&M during 2017.



Figure 17. Cogstone paleontologist Dr. Ashley Leger being interviewed by USA Today, June 15, 2017

Due to scheduled construction at the LBTP&M, the juvenile mammoth skull was moved back to Cogstone’s paleontological laboratory in Riverside, California for continued preparation. Before the skull was flipped over to permit preparation of the dorsal side, Dr. Leger took measurements of the cranium to use for comparison to other mammoth skulls. When the preparation is completed, Dr. Leger will take measurements on the dorsal side of the skull and compare them with those of 50 other Columbian mammoth skulls from across the United States. This will hopefully allow determination of its sex. Mammoths, like elephants, have several sexually dimorphic characteristics that differentiate the sexes. The most useful features include measurements of the pelvis and the shape of the tusks. Because “Hayden” is a young individual, the tusks are not fully grown, and determining sex using the tusks would be difficult. But by using up to 30 different metrics on the cranium, Dr. Leger expects to be able to determine its sex.

This specimen continues to fascinate and delight, and there are several more media interviews already planned and approved by Metro for 2018.

MAMMOTH TUSKS

In November 2016, Cogstone monitors at the La Brea Station site recovered a large proboscidean tusk (Figure 19) as well as some fragments of mastodon tooth from PLE LB 002 (field locality: 2016_11_23. BRA.1b). At that time it was not possible to confidently determine whether the tusk was a mastodon or a mammoth. Following preparation of the tusk, however, enamel



Figure 18. Main section of proboscidean tusk from field locality 2016_11_23. BRA.1b (scale = 10 cm)

patterns could be observed in the cross section of the tusk that permitted it to be more fully identified. This is because of a feature in the enamel of elephant tusks termed “Schreger lines”.

The tusks of elephants and their near relatives are characterized in part by a series of intersecting lines, laid down by the cells (odontoblasts) that secreted dentin as the tusk was forming. In cross section, these lines form a characteristic checkerboard pattern termed the Schreger pattern, named for the scientist who first described this feature in 1800. Schreger patterns are useful for validating elephant ivory carvings; objects made of elephant ivory display Schreger patterns, whereas those carved out of hippo or narwhal ivory (or made out of plastic) do not.

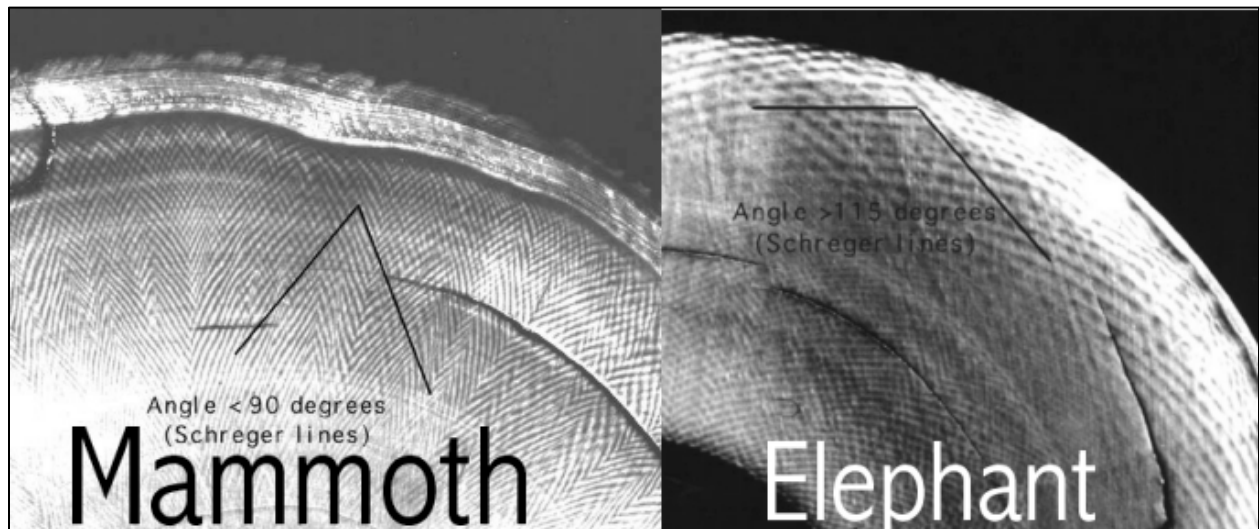


Figure 19. Examples of the Schreger patterns of mammoth (left) and elephant tusks. (Image courtesy “The Fossil Forum”, 2014)

Schreger patterns occur in the tusks of all elephant relatives, but differ slightly among various elephant groups. For example, it is possible to distinguish the tusks of African elephants from those of Asian elephants on the basis of their different Schreger patterns. Similarly, tusks of extinct mammoths can be distinguished from those of elephants or mastodons using Schreger lines (Palombo & Villa, 2001).

The Schreger pattern observed in the tusk from field locality 2016_11_23. BRA.1b clearly resembled published accounts of Schreger lines from mammoths, rather than mastodons. Based upon these data, the tusk is now considered to represent an adult individual of Columbian mammoth, *Mammuthus columbi*.

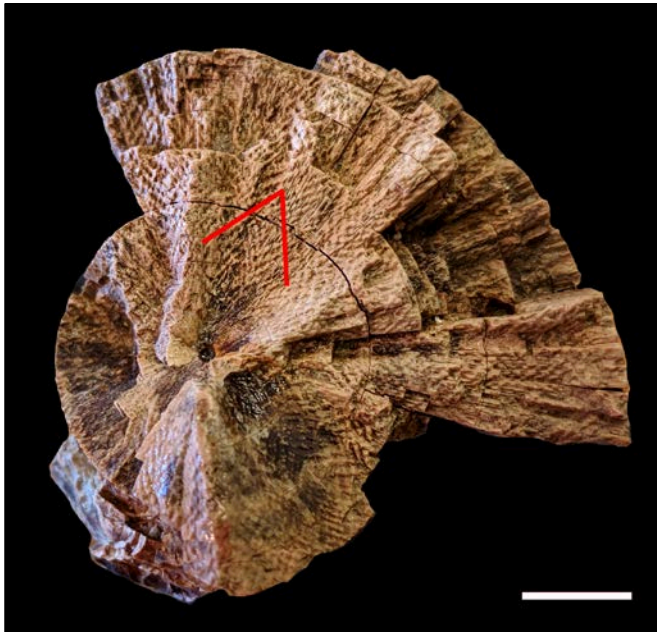


Figure 20. Schreger lines in the tusk from field locality 2016_11_23. BRA.1b, showing an angle of less than 90 degrees, similar to the pattern observed in extinct mammoth tusks (scale = 1 cm)

MICROFOSSILS

Preparation and cleaning of the fossils discussed above produced sediments with the potential to contain microfossil remains. Such minute fossils can be extremely significant, in that they can provide data on paleoenvironmental conditions that cannot necessarily be obtained from larger macrofossils. (Fossil remains of gophers, for example, would indicate relatively moist soil conditions for the immediate area where they were discovered; living gophers require a moist substrate to survive, and they do not travel great distances in their lives.) The sediments obtained from preparation of the fossils discussed above have therefore been water washed through fine mesh screens, and the resulting concentrate has been examined and picked for microfossils. These remains will be further analyzed in 2018.

FUTURE WORK

The fossils recovered in 2016 and 2017 continue to undergo cleaning and stabilization. This work will continue during 2018.

Additionally, Cogstone will investigate the potential for radiocarbon dating the juvenile mammoth fossil from PLE LB 002. Such dating would require fossil material that was sufficiently well preserved to permit the presence of organic materials – either the bone itself, or immediately adjacent organic remains from the same site. As preparation of the skull continues, the potential for obtaining samples suitable for radiocarbon dating will be more fully explored.

Upcoming excavations for 2018 include all three stations – La Brea, Fairfax and La Cienega – and the drop shaft at Western. We anticipate additional fossils will be recovered in 2018.

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APPENDIX A. MONITORING SUMMARY

2017 PLE Section 1 Paleontology Progress Report

DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
1/3/2017	none	B. Ader	Day	Fairfax
1/3/2017	none	J. Basuga	Day	La Brea
1/3/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/4/2017	none	B. Ader	Day	Fairfax
1/4/2017	none	J. Basuga	Day	La Brea
1/4/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/5/2017	none	B. Ader	Day	Fairfax
1/5/2017	none	F. Palacios	Day	La Brea
1/5/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/6/2017	none	J. Basuga	Day	La Brea
1/6/2017	none	M. Cappetta	Swing	La Brea
1/6/2017	none	F. Palacios	Day	La Brea & Fairfax
1/7/2017	none	J. Basuga	Day	La Brea & Fairfax
1/7/2017	none	M. Cappetta	Swing	La Brea & Fairfax
1/7/2017	none	F. Palacios	Day	La Brea & Fairfax
1/9/2017	none	J. Basuga	Day	La Brea
1/9/2017	none	B. Ader	Day	La Brea & Fairfax
1/9/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/10/2017	none	B. Ader	Day	Fairfax
1/10/2017	none	J. Basuga	Day	La Brea
1/10/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/11/2017	none	B. Ader	Day	Fairfax
1/11/2017	none	J. Basuga	Day	La Brea
1/11/2017	none	M. Serrano	Swing	La Brea
1/12/2017	none	B. Ader	Day	Fairfax
1/12/2017	none	F. Palacios	Day	La Brea
1/12/2017	none	M. Serrano	Swing	La Brea
1/13/2017	none	F. Palacios	Day	La Brea
1/13/2017	none	M. Serrano	Swing	La Brea
1/13/2017	none	B. Ader	Day	La Brea & Fairfax
1/14/2017	none	J. Basuga	Day	La Brea
1/14/2017	none	F. Palacios	Day	La Brea & Fairfax
1/16/2017	none	B. Ader	Day	La Brea
1/16/2017	none	J. Basuga	Day	La Brea
1/16/2017	none	F. Palacios	Swing	La Brea
1/17/2017	none	B. Ader	Day	La Brea
1/17/2017	none	J. Basuga	Day	La Brea
1/17/2017	none	F. Palacios	Swing	La Brea
1/18/2017	none	B. Ader	Day	La Brea
1/18/2017	none	J. Basuga	Day	La Brea
1/18/2017	none	M. Serrano	Swing	La Brea
1/19/2017	none	F. Palacios	Day	La Brea
1/19/2017	none	M. Serrano	Swing	La Brea
1/19/2017	none	B. Ader	Day	La Brea & Fairfax
1/20/2017	none	F. Palacios	Day	La Brea

DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
1/20/2017	none	J. Basuga	Day	La Brea
1/20/2017	none	M. Serrano	Swing	La Brea
1/21/2017	none	J. Basuga	Day	La Brea
1/21/2017	none	F. Palacios	Day	La Brea
1/21/2017	none	M. Serrano	Swing	La Brea
1/23/2017	none	B. Ader	Day	All Stations
1/23/2017	none	J. Basuga	Day	All Stations
1/24/2017	none	B. Ader	Day	La Brea
1/24/2017	none	J. Basuga	Day	La Brea
1/24/2017	none	F. Palacios	Swing	La Brea
1/25/2017	none	B. Ader	Day	La Brea
1/25/2017	none	J. Basuga	Day	La Brea
1/25/2017	none	M. Serrano	Swing	La Brea
1/26/2017	none	B. Ader	Day	La Brea
1/26/2017	none	F. Palacios	Day	La Brea
1/26/2017	none	M. Serrano	Swing	La Brea
1/27/2017	none	F. Palacios	Day	La Brea
1/27/2017	none	J. Basuga	Day	La Brea
1/27/2017	none	M. Serrano	Swing	La Brea
1/28/2017	none	J. Basuga	Day	La Brea
1/28/2017	none	F. Palacios	Day	La Brea
1/28/2017	none	M. Serrano	Swing	La Brea & Fairfax
1/30/2017	none	B. Ader	Day	Fairfax
1/30/2017	none	J. Basuga	Day	La Brea
1/30/2017	none	F. Palacios	Swing	La Brea
1/31/2017	none	B. Ader	Day	Fairfax
1/31/2017	none	J. Basuga	Day	La Brea
1/31/2017	none	M. Serrano	Swing	La Brea
2/1/2017	none	B. Ader	Day	Fairfax
2/1/2017	none	J. Basuga	Day	La Brea
2/1/2017	none	M. Serrano	Swing	La Brea
2/2/2017	none	B. Ader	Day	Fairfax
2/2/2017	none	F. Palacios	Day	La Brea
2/2/2017	none	M. Serrano	Swing	La Brea
2/3/2017	none	B. Ader	Day	Fairfax
2/3/2017	none	F. Palacios	Day	La Brea
2/3/2017	none	M. Serrano	Swing	La Brea
2/4/2017	none	J. Basuga	Day	La Brea
2/4/2017	none	F. Palacios	Day	La Brea
2/6/2017	none	J. Basuga	Day	La Brea
2/6/2017	none	M. Serrano	Swing	La Brea & Fairfax
2/6/2017	none	F. Palacios	Day	Fairfax
2/7/2017	none	J. Basuga	Day	La Brea & Fairfax
2/7/2017	none	F. Palacios	Day	Fairfax
2/7/2017	none	M. Serrano	Swing	La Brea & Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
2/8/2017	none	B. Ader	Day	La Brea
2/8/2017	none	J. Basuga	Day	Fairfax
2/8/2017	none	M. Serrano	Swing	La Brea & Fairfax
2/9/2017	none	B. Ader	Day	La Brea
2/9/2017	none	F. Palacios	Day	Fairfax
2/9/2017	none	M. Cappetta	Swing	La Brea
2/10/2017	none	B. Ader	Day	Fairfax
2/10/2017	none	J. Basuga	Day	La Brea
2/10/2017	none	F. Palacios	Swing	Fairfax
2/10/2017	none	A. Simmons	Swing	Fairfax
2/10/2017	none	J. Mort	Swing	Fairfax
2/10/2017	none	M. Serrano	Graveyard	Fairfax
2/10/2017	none	M. Cappetta	Graveyard	Fairfax
2/11/2017	none	B. Ader	Day	Fairfax
2/11/2017	none	J. Basuga	Day	Fairfax
2/11/2017	none	J. Mort	Swing	Fairfax
2/11/2017	none	M. Serrano	Graveyard	Fairfax
2/12/2017	none	B. Ader	Day	Fairfax
2/12/2017	none	M. Cappetta	Swing	Fairfax
2/12/2017	none	M. Serrano	Graveyard	Fairfax
2/13/2017	none	F. Palacios	Day	La Brea
2/13/2017	none	M. Cappetta	Swing	Fairfax
2/13/2017	none	J. Basuga	Day	La Brea
2/14/2017	none	F. Palacios	Day	La Brea
2/14/2017	none	J. Basuga	Day	La Brea
2/14/2017	none	M. Cappetta	Swing	Fairfax
2/15/2017	none	B. Ader	Day	All Stations
2/15/2017	none	J. Basuga	Day	La Brea
2/15/2017	none	F. Palacios	Day	Fairfax
2/15/2017	none	M. Serrano	Swing	Fairfax
2/16/2017	none	B. Ader	Day	La Brea
2/16/2017	none	M. Serrano	Swing	La Brea & Fairfax
2/17/2017	none	B. Ader	Day	La Brea & Fairfax
2/17/2017	none	F. Palacios	Day	Fairfax
2/18/2017	none	B. Ader	Day	La Brea
2/19/2017	none	F. Palacios	Day	Fairfax
2/20/2017	none	J. Basuga	Day	La Brea & Fairfax
2/20/2017	none	M. Serrano	Swing	La Brea
2/20/2017	none	M. Cappetta	Day	Fairfax
2/21/2017	none	B. Ader	Day	La Brea & Fairfax
2/21/2017	none	J. Basuga	Day	La Brea
2/21/2017	none	M. Serrano	Swing	La Brea
2/21/2017	none	F. Palacios	Day	Fairfax
2/22/2017	none	M. Serrano	Swing	La Brea
2/22/2017	none	F. Palacios	Day	La Brea & Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
2/23/2017	none	J. Basuga	Day	La Brea
2/23/2017	none	F. Palacios	Day	Fairfax
2/23/2017	none	M. Cappetta	Swing	La Brea
2/24/2017	none	J. Basuga	Day	La Brea
2/24/2017	none	F. Palacios	Swing	Fairfax
2/24/2017	none	B. Ader	Day	Fairfax
2/24/2017	none	E. McDonald	Day	Fairfax
2/24/2017	none	J. Mort	Swing	Fairfax
2/24/2017	none	J. Nolasco	Day	La Brea
2/24/2017	none	M. Cappetta	Swing	La Brea
2/24/2017	none	M. Serrano	Graveyard	Fairfax
2/25/2017	none	B. Ader	Day	Fairfax
2/25/2017	none	E. McDonald	Day	Fairfax
2/25/2017	none	J. Basuga	Day	La Brea
2/25/2017	none	J. Nolasco	Day	La Brea
2/26/2017	none	M. Cappetta	Day	Fairfax
2/27/2017	none	M. Serrano	Day	Fairfax
2/27/2017	none	F. Palacios	Swing	La Brea
2/27/2017	none	J. Basuga	Day	La Brea
2/28/2017	none	B. Ader	Day	La Brea
2/28/2017	none	J. Basuga	Day	Fairfax
2/28/2017	none	M. Serrano	Swing	La Brea
3/1/2017	none	B. Ader	Day	Fairfax
3/1/2017	none	J. Basuga	Day	La Brea
3/1/2017	none	M. Cappetta	Swing	La Brea
3/2/2017	none	B. Ader	Day	Fairfax
3/2/2017	none	F. Palacios	Day	La Brea
3/2/2017	none	M. Cappetta	Swing	La Brea
3/3/2017	none	J. Basuga	Day	La Brea
3/3/2017	none	F. Palacios	Day	Fairfax
3/3/2017	none	M. Serrano	Swing	Fairfax
3/4/2017	none	J. Basuga	Day	La Brea
3/4/2017	none	F. Palacios	Day	La Brea
3/6/2017	none	J. Basuga	Day	Fairfax
3/6/2017	none	F. Palacios	Day	La Brea
3/6/2017	none	M. Serrano	Swing	La Brea & Fairfax
3/7/2017	none	J. Nolasco	Day	Fairfax
3/7/2017	none	J. Basuga	Day	La Brea
3/7/2017	none	M. Serrano	Swing	La Brea
3/8/2017	none	B. Ader	Day	La Brea
3/8/2017	none	F. Palacios	Day	Fairfax
3/8/2017	none	M. Serrano	Swing	La Brea
3/9/2017	none	B. Ader	Day	La Brea
3/9/2017	none	F. Palacios	Day	Fairfax
3/9/2017	none	M. Cappetta	Swing	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
3/10/2017	none	B. Ader	Day	Fairfax
3/10/2017	none	J. Basuga	Day	La Brea
3/10/2017	none	M. Cappetta	Swing	La Brea
3/11/2017	none	J. Nolasco	Day	La Brea
3/11/2017	none	J. Basuga	Day	La Brea
3/12/2017	none	M. Cappetta	Day	Fairfax
3/13/2017	none	F. Palacios	Day	La Brea
3/13/2017	none	J. Basuga	Day	Fairfax
3/13/2017	none	M. Serrano	Swing	La Brea
3/14/2017	none	B. Ader	Day	La Brea
3/14/2017	none	J. Nolasco	Day	La Brea
3/14/2017	none	J. Basuga	Day	Fairfax
3/14/2017	none	M. Serrano	Swing	La Brea
3/15/2017	none	B. Ader	Day	La Brea
3/15/2017	none	F. Palacios	Day	Fairfax
3/15/2017	none	M. Serrano	Swing	La Brea
3/16/2017	none	B. Ader	Day	La Brea
3/16/2017	none	F. Palacios	Day	Fairfax
3/16/2017	none	M. Cappetta	Swing	La Brea
3/17/2017	none	B. Ader	Day	Fairfax
3/17/2017	none	J. Basuga	Day	La Brea
3/17/2017	none	J. Nolasco	Day	Fairfax
3/17/2017	none	F. Palacios	Swing	Fairfax
3/17/2017	none	E. McDonald	Swing	Fairfax
3/17/2017	none	M. Cappetta	Swing	La Brea
3/18/2017	none	J. Basuga	Day	La Brea
3/18/2017	none	J. Nolasco	Day	Fairfax
3/18/2017	none	B. Ader	Day	Fairfax
3/19/2017	none	B. Ader	Day	Fairfax
3/20/2017	none	J. Basuga	Day	La Brea
3/20/2017	none	F. Palacios	Day	Fairfax
3/20/2017	none	M. Cappetta	Swing	Fairfax
3/21/2017	none	J. Basuga	Day	La Brea
3/21/2017	none	M. Serrano	Swing	La Brea
3/21/2017	none	F. Palacios	Day	Fairfax
3/22/2017	2017_03_22_BRA.1 bone fragment	B. Ader	Day	La Brea
3/22/2017	none	F. Palacios	Day	Fairfax
3/22/2017	none	M. Serrano	Swing	La Brea
3/23/2017	none	B. Ader	Day	La Brea
3/23/2017	none	F. Palacios	Day	Fairfax
3/23/2017	none	M. Cappetta	Swing	Fairfax
3/24/2017	none	J. Basuga	Day	La Brea
3/24/2017	none	B. Ader	Day	Fairfax
3/24/2017	none	J. Nolasco	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
3/24/2017	none	E. McDonald	Swing	Fairfax
3/24/2017	none	F. Palacios	Swing	Fairfax
3/24/2017	none	M. Cappetta	Graveyard	Fairfax
3/25/2017	none	B. Ader	Day	Fairfax
3/25/2017	none	J. Nolasco	Day	Fairfax
3/26/2017	none	B. Ader	Day	Fairfax
3/27/2017	none	J. Basuga	Day	La Brea
3/27/2017	none	F. Palacios	Day	Fairfax
3/27/2017	none	M. Serrano	Swing	La Brea
3/28/2017	none	J. Basuga	Day	La Brea
3/28/2017	none	F. Palacios	Day	Fairfax
3/28/2017	none	M. Serrano	Swing	La Brea
3/29/2017	none	B. Ader	Day	La Brea
3/29/2017	none	F. Palacios	Day	Fairfax
3/29/2017	none	M. Serrano	Swing	La Brea
3/30/2017	none	B. Ader	Day	La Brea
3/30/2017	none	F. Palacios	Day	Fairfax
3/30/2017	none	M. Serrano	Swing	Fairfax
3/31/2017	none	J. Basuga	Day	La Brea
3/31/2017	none	B. Ader	Day	Fairfax
3/31/2017	none	E. McDonald	Graveyard	Fairfax
3/31/2017	none	J. Nolasco	Day	Fairfax
3/31/2017	none	M. Serrano	Swing	Fairfax
3/31/2017	none	F. Palacios	Swing	Fairfax
3/31/2017	none	M. Cappetta	Swing	Fairfax
4/1/2017	none	J. Basuga	Day	La Brea
4/1/2017	none	B. Ader	Day	Fairfax
4/1/2017	none	J. Nolasco	Day	Fairfax
4/2/2017	none	J. Mort	Day	Fairfax
4/2/2017	none	B. Ader	Day	Fairfax
4/3/2017	none	B. Ader	Day	La Brea
4/3/2017	none	M. Serrano	Day	La Brea
4/3/2017	none	F. Palacios	Day	Fairfax
4/3/2017	none	M. Cappetta	Swing	Fairfax
4/4/2017	none	B. Ader	Day	La Brea
4/4/2017	none	M. Serrano	Day	La Brea
4/4/2017	none	F. Palacios	Day	Fairfax
4/4/2017	none	M. Cappetta	Swing	La Brea
4/5/2017	none	B. Ader	Day	La Brea
4/5/2017	none	M. Serrano	Day	La Brea
4/5/2017	none	F. Palacios	Day	Fairfax
4/5/2017	none	M. Cappetta	Swing	La Brea
4/6/2017	none	J. Basuga	Day	La Brea
4/6/2017	none	J. Nolasco	Swing	La Brea
4/6/2017	none	M. Serrano	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
4/6/2017	none	F. Palacios	Day	Fairfax
4/7/2017	none	J. Basuga	Day	La Brea
4/7/2017	none	B. Ader	Day	Fairfax
4/7/2017	none	F. Palacios	Swing	Fairfax
4/7/2017	none	M. Cappetta	Day	La Brea
4/7/2017	none	M. Serrano	Swing	Fairfax
4/8/2017	none	J. Basuga	Day	La Brea
4/8/2017	none	B. Ader	Day	Fairfax
4/8/2017	none	M. Cappetta	Graveyard	Fairfax
4/8/2017	none	J. Nolasco	Day	Fairfax
4/9/2017	none	B. Ader	Day	Fairfax
4/10/2017	none	J. Basuga	Day	La Brea
4/10/2017	none	M. Serrano	Day	La Brea
4/10/2017	none	M. Cappetta	Swing	La Brea
4/10/2017	none	F. Palacios	Day	Fairfax
4/11/2017	none	B. Ader	Day	La Brea
4/11/2017	none	M. Serrano	Day	La Brea
4/11/2017	none	M. Cappetta	Swing	La Brea
4/11/2017	none	F. Palacios	Day	Fairfax
4/12/2017	2017_04_12_BRA.1 wood pieces; 2017_04_12_BRA.2 <i>Camelops hesternus</i> bone	B. Ader	Day	La Brea
4/12/2017	none	M. Serrano	Day	La Brea
4/12/2017	none	M. Cappetta	Swing	La Brea
4/12/2017	none	F. Palacios	Day	Fairfax
4/13/2017	2017_04_13_JAB.1 proboscidean femur	J. Basuga	Day	La Brea
4/13/2017	2017_04_13_JMN.1 portion of rib bone	J. Nolasco	Day	La Brea
4/13/2017	none	A. Leger	Day	La Brea
4/13/2017	none	M. Cappetta	Swing	La Brea
4/13/2017	none	F. Palacios	Day	Fairfax
4/14/2017	none	A. Leger	Day	La Brea
4/14/2017	none	J. Nolasco	Day	La Brea
4/14/2017	none	B. Ader	Day	La Brea
4/14/2017	none	J. Basuga	Day	La Brea
4/14/2017	none	J. Nolasco	Day	La Brea & Fairfax
4/17/2017	none	B. Ader	Day	La Brea
4/17/2017	none	J. Nolasco	Day	La Brea
4/17/2017	none	F. Palacios	Swing	La Brea
4/17/2017	none	J. Basuga	Day	Fairfax
4/18/2017	none	B. Ader	Day	La Brea
4/18/2017	none	J. Basuga	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
4/18/2017	none	J. Nolasco	Day	Fairfax
4/18/2017	none	F. Palacios	Swing	La Brea
4/19/2017	none	J. Basuga	Day	La Brea
4/19/2017	none	J. Nolasco	Day	La Brea
4/19/2017	none	M. Cappetta	Swing	Fairfax
4/19/2017	none	F. Palacios	Swing	La Brea
4/20/2017	none	B. Ader	Day	La Brea
4/20/2017	none	J. Basuga	Day	La Brea
4/20/2017	none	M. Cappetta	Day	Fairfax
4/20/2017	none	F. Palacios	Swing	La Brea
4/21/2017	none	J. Basuga	Day	La Brea & Fairfax
4/21/2017	none	B. Ader	Day	Fairfax
4/21/2017	none	J. Nolasco	Day	La Brea
4/21/2017	none	M. Serrano	Swing	Fairfax
4/21/2017	none	F. Palacios	Graveyard	Fairfax
4/22/2017	none	B. Ader	Day	Fairfax
4/22/2017	none	J. Nolasco	Day	La Brea
4/22/2017	none	M. Cappetta	Swing	Fairfax
4/22/2017	none	J. Basuga	Day	Fairfax
4/22/2017	none	J. Nolasco	Day	La Brea
4/23/2017	none	M. Serrano	Day	Fairfax
4/24/2017	none	M. Serrano	Day	Fairfax
4/24/2017	none	J. Nolasco	Day	La Brea
4/24/2017	none	F. Palacios	Day	La Brea
4/24/2017	none	M. Cappetta	Swing	La Brea
4/25/2017	none	B. Ader	Day	La Brea
4/25/2017	none	J. Nolasco	Day	La Brea
4/25/2017	none	J. Basuga	Swing	La Brea
4/25/2017	none	M. Serrano	Day	Fairfax
4/26/2017	none	J. Nolasco	Day	La Brea
4/26/2017	none	B. Ader	Day	La Brea
4/26/2017	none	F. Palacios	Day	Fairfax
4/26/2017	none	M. Cappetta	Swing	La Brea
4/27/2017	none	B. Ader	Day	La Brea
4/27/2017	none	J. Basuga	Swing	La Brea
4/27/2017	none	M. Serrano	Day	Fairfax
4/27/2017	none	F. Palacios	Day	La Brea
4/28/2017	none	M. Serrano	Day	La Brea
4/28/2017	none	F. Palacios	Day	La Brea
4/29/2017	none	M. Serrano	Day	La Brea
4/29/2017	none	B. Ader	Day	Fairfax
4/29/2017	none	H. Duke	Day	Fairfax
4/29/2017	none	J. Basuga	Swing	Fairfax
4/30/2017	none	H. Duke	Day	Fairfax
4/30/2017	none	F. Palacios	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
5/1/2017	none	M. Serrano	Day	Fairfax
5/1/2017	none	F. Palacios	Day	La Brea
5/2/2017	none	B. Ader	Day	La Brea
5/2/2017	none	M. Cappetta	Swing	La Brea
5/2/2017	none	F. Palacios	Day	La Brea
5/2/2017	none	M. Serrano	Day	Fairfax
5/3/2017	none	B. Ader	Day	La Brea
5/3/2017	none	J. Basuga	Day	La Brea
5/3/2017	none	F. Palacios	Day	Fairfax
5/4/2017	none	B. Ader	Day	La Brea
5/4/2017	none	J. McElhoes	Day	Fairfax
5/4/2017	none	J. Basuga	Day	La Brea
5/5/2017	none	M. Serrano	Day	La Brea
5/5/2017	none	B. Ader	Day	Fairfax
5/5/2017	none	J. Basuga	Day	Fairfax
5/5/2017	none	F. Palacios	Swing	Fairfax
5/6/2017	none	B. Ader	Day	Fairfax
5/6/2017	none	F. Palacios	Swing	Fairfax
5/6/2017	none	J. Nolasco	Day	Fairfax
5/6/2017	none	M. Serrano	Swing	La Brea
5/7/2017	none	J. Nolasco	Day	Fairfax
5/7/2017	none	B. Ader	Day	Fairfax
5/8/2017	none	B. Ader	Day	Fairfax
5/8/2017	none	J. Nolasco	Day	La Brea
5/8/2017	none	M. Serrano	Swing	La Brea
5/8/2017	none	J. McElhoes	Day	Fairfax
5/8/2017	none	J. Basuga	Day	La Brea
5/9/2017	none	J. Nolasco	Day	La Brea
5/9/2017	none	M. Serrano	Swing	La Brea
5/9/2017	none	J. Basuga	Day	Fairfax
5/10/2017	none	J. Nolasco	Day	La Brea
5/10/2017	none	J. McElhoes	Day	Fairfax
5/10/2017	none	F. Palacios	Swing	La Brea
5/10/2017	none	J. Basuga	Day	Fairfax
5/11/2017	none	B. Ader	Day	Fairfax
5/11/2017	none	F. Palacios	Swing	La Brea
5/11/2017	none	J. Basuga	Day	La Brea
5/12/2017	none	J. Nolasco	Day	La Brea
5/12/2017	none	B. Ader	Day	Fairfax
5/12/2017	none	M. Serrano	Swing	Fairfax
5/12/2017	none	F. Palacios	Swing	Fairfax
5/12/2017	none	J. Basuga	Day	Fairfax
5/13/2017	none	B. Ader	Day	Fairfax
5/13/2017	none	J. Basuga	Day	Fairfax
5/15/2017	none	F. Palacios	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
5/15/2017	none	J. Nolasco	Day	La Brea
5/15/2017	none	M. Serrano	Swing	La Brea
5/15/2017	none	J. Basuga	Day	La Brea
5/16/2017	none	B. Ader	Day	Fairfax
5/16/2017	none	F. Palacios	Day	La Brea
5/16/2017	none	J. Nolasco	Day	La Brea
5/16/2017	none	M. Serrano	Swing	La Brea
5/17/2017	none	J. Basuga	Day	Fairfax
5/17/2017	none	B. Ader	Day	La Brea
5/17/2017	none	J. McElhoes	Day	La Brea
5/17/2017	none	M. Serrano	Swing	La Brea
5/18/2017	none	J. Nolasco	Day	Fairfax
5/18/2017	none	B. Ader	Day	La Brea
5/18/2017	none	F. Palacios	Swing	La Brea
5/18/2017	none	J. Basuga	Day	La Brea
5/19/2017	none	F. Palacios	Swing	Fairfax
5/19/2017	none	J. Nolasco	Day	Fairfax
5/19/2017	none	M. Serrano	Swing	Fairfax
5/19/2017	none	B. Ader	Day	Fairfax
5/19/2017	none	J. Basuga	Day	La Brea
5/20/2017	none	B. Ader	Day	Fairfax
5/20/2017	none	J. Basuga	Day	La Brea
5/22/2017	none	J. Nolasco	Day	La Brea
5/22/2017	none	F. Palacios	Day	Fairfax
5/22/2017	none	M. Serrano	Swing	La Brea
5/23/2017	none	J. Basuga	Day	Fairfax
5/23/2017	none	B. Ader	Day	La Brea
5/23/2017	none	J. Nolasco	Day	La Brea
5/23/2017	none	M. Serrano	Swing	La Brea
5/24/2017	none	B. Ader	Day	La Brea
5/24/2017	none	J. McElhoes	Day	La Brea
5/24/2017	none	M. Serrano	Swing	La Brea
5/24/2017	none	F. Palacios	Day	Fairfax
5/25/2017	none	J. Basuga	Day	La Brea
5/25/2017	none	J. Nolasco	Day	La Brea
5/25/2017	none	F. Palacios	Day	Fairfax
5/26/2017	none	J. Basuga	Day	La Brea
5/26/2017	none	J. Nolasco	Day	La Brea
5/26/2017	none	F. Palacios	Day	Fairfax
5/30/2017	none	J. Nolasco	Day	La Brea
5/30/2017	none	B. Ader	Day	Fairfax
5/30/2017	none	F. Palacios	Day	La Brea
5/30/2017	none	M. Serrano	Graveyard	La Brea
5/31/2017	none	M. Serrano	Swing	La Brea
5/31/2017	none	J. McElhoes	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
5/31/2017	none	J. Basuga	Day	Fairfax
5/31/2017	none	J. Nolasco	Day	La Brea
6/1/2017	none	F. Palacios	Day	Fairfax
6/1/2017	none	M. Serrano	Swing	La Brea
6/1/2017	none	J. Basuga	Day	Fairfax
6/1/2017	none	J. Nolasco	Day	La Brea
6/2/2017	none	B. Ader	Day	Fairfax
6/2/2017	none	J. Basuga	Day	Fairfax
6/2/2017	none	M. Serrano	Graveyard	Fairfax
6/2/2017	none	F. Palacios	Swing	Fairfax
6/2/2017	none	J. Nolasco	Day	La Brea
6/3/2017	none	J. Nolasco	Day	Fairfax
6/3/2017	none	B. Ader	Day	Fairfax
6/5/2017	none	B. Ader	Day	Fairfax
6/5/2017	none	J. Basuga	Day	La Brea
6/5/2017	none	J. Nolasco	Day	La Brea
6/5/2017	none	M. Serrano	Swing	La Brea
6/6/2017	none	F. Palacios	Day	La Brea
6/6/2017	none	J. Nolasco	Day	La Brea
6/6/2017	none	B. Ader	Day	Fairfax
6/6/2017	none	M. Serrano	Swing	La Brea
6/7/2017	none	F. Palacios	Day	Fairfax
6/7/2017	none	J. Basuga	Day	La Brea
6/7/2017	none	J. Nolasco	Day	La Brea
6/7/2017	none	M. Serrano	Swing	La Brea
6/8/2017	none	F. Palacios	Day	La Brea
6/8/2017	none	J. Basuga	Day	La Brea
6/8/2017	none	B. Ader	Day	Fairfax
6/8/2017	none	M. Serrano	Swing	La Brea
6/9/2017	none	J. Basuga	Day	La Brea
6/9/2017	none	B. Ader	Day	Fairfax
6/9/2017	none	J. Nolasco	Day	La Brea
6/10/2017	none	B. Ader	Day	La Brea
6/10/2017	none	J. Nolasco	Day	La Brea
6/12/2017	none	F. Palacios	Day	La Brea
6/12/2017	none	J. Basuga	Swing	La Brea
6/12/2017	none	J. McElhoses	Day	La Brea
6/12/2017	none	B. Ader	Day	Fairfax
6/13/2017	none	F. Palacios	Day	La Brea
6/13/2017	none	J. Nolasco	Day	La Brea
6/13/2017	none	M. Serrano	Swing	La Brea
6/13/2017	none	B. Ader	Day	Fairfax
6/14/2017	none	F. Palacios	Day	La Brea
6/14/2017	none	J. Basuga	Day	Fairfax
6/14/2017	none	J. Nolasco	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
6/13/2017	2017_06_13_MES.1 horse tooth	M. Serrano	Swing	La Brea
6/15/2017	none	J. Basuga	Day	La Brea
6/15/2017	none	J. Nolasco	Day	La Brea
6/15/2017	none	M. Serrano	Swing	La Brea
6/15/2017	none	B. Ader	Day	Fairfax
6/16/2017	none	B. Ader	Day	Fairfax
6/16/2017	none	J. Mort	Swing	Fairfax
6/16/2017	none	J. Nolasco	Day	La Brea
6/16/2017	none	A. Francois	Day	Fairfax
6/16/2017	none	M. Serrano	Graveyard	Fairfax
6/16/2017	none	S. Austin	Day	Fairfax
6/17/2017	none	S. Austin	Day	Fairfax
6/17/2017	none	J. McElhoes	Day	La Brea
6/17/2017	none	B. Ader	Day	Fairfax
6/19/2017	none	A. Francois	Day	La Brea
6/19/2017	none	J. McElhoes	Day	La Brea
6/19/2017	2017_06_19_JMN.1 bison atlas	J. Nolasco	Day	Fairfax
6/19/2017	none	M. Serrano	Swing	La Brea
6/20/2017	none	A. Francois	Day	La Brea
6/20/2017	none	B. Ader	Day	La Brea
6/20/2017	none	M. Serrano	Swing	La Brea
6/20/2017	2017_06_20_JMN.1 bison neural spine C4 or C5	J. Nolasco	Day	Fairfax
6/21/2017	none	A. Francois	Day	La Brea
6/21/2017	none	B. Ader	Day	La Brea
6/21/2017	none	J. Nolasco	Day	Fairfax
6/21/2017	none	M. Serrano	Swing	La Brea
6/22/2017	none	A. Francois	Day	La Brea
6/22/2017	none	B. Ader	Day	La Brea
6/22/2017	none	J. Nolasco	Day	Fairfax
6/22/2017	none	M. Serrano	Swing	La Brea
6/23/2017	none	B. Ader	Day	La Brea
6/23/2017	none	A. Francois	Day	La Brea
6/23/2017	none	J. Nolasco	Day	Fairfax
6/23/2017	none	M. Serrano	Swing	La Brea
6/24/2017	none	B. Ader	Day	La Brea
6/26/2017	none	J. Nolasco	Day	La Brea
6/26/2017	none	A. Francois	Day	Fairfax
6/26/2017	none	M. Serrano	Day	La Brea
6/26/2017	none	F. Palacios	Day	Fairfax
6/27/2017	2017_06_27_ANF.1 partial turtle shell	A. Francois	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
6/27/2017	none	J. Nolasco	Day	La Brea
6/27/2017	none	F. Palacios	Day	Fairfax
6/28/2017	none	B. Ader	swing	La Brea
6/28/2017	none	J. Basuga	Day	Fairfax
6/28/2017	none	J. Nolasco	Day	La Brea
6/28/2017	none	F. Palacios	Day	Fairfax
6/29/2017	none	B. Ader	Swing	La Brea
6/29/2017	none	J. Basuga	Day	Fairfax
6/29/2017	none	J. Nolasco	Day	La Brea
6/29/2017	none	A. Francois	Day	Fairfax
6/29/2017	none	F. Palacios	Swing	Fairfax
6/30/2017	none	B. Ader	Swing	La Brea
6/30/2017	none	J. Nolasco	Day	La Brea
6/30/2017	none	J. Basuga	Day	Fairfax
6/30/2017	none	A. Francois	Day	Fairfax
7/5/2017	none	A. Francois	Day	Fairfax
7/5/2017	none	B. Ader	Day	Fairfax
7/5/2017	none	J. Nolasco	Day	La Brea
7/5/2017	none	F. Palacios	Swing	Fairfax
7/5/2017	none	M. Serrano	Swing	La Brea
7/6/2017	none	J. Nolasco	Day	La Brea
7/6/2017	none	M. Serrano	Swing	La Brea
7/6/2017	none	A. Francois	Day	Fairfax
7/6/2017	none	F. Palacios	Swing	Fairfax
7/6/2017	none	J. Basuga	Day	Fairfax
7/7/2017	none	J. Nolasco	Day	La Brea
7/7/2017	none	M. Serrano	Swing	La Brea
7/7/2017	none	A. Francois	Day	Fairfax
7/7/2017	none	F. Palacios	Swing	Fairfax
7/7/2017	none	J. Basuga	Day	Fairfax
7/8/2017	none	A. Francois	Day	La Brea
7/8/2017	none	J. Nolasco	Day	La Brea
7/10/2017	none	B. Ader	Day	Fairfax
7/10/2017	none	A. Francois	Day	La Brea
7/10/2017	none	F. Palacios	Swing	La Brea
7/10/2017	none	J. Basuga	Day	La Brea
7/11/2017	none	A. Francois	Day	Fairfax
7/11/2017	none	B. Ader	Day	La Brea
7/11/2017	none	J. Basuga	Day	La Brea & Fairfax
7/11/2017	none	J. Nolasco	Day	La Brea
7/11/2017	none	M. Serrano	Swing	La Brea
7/12/2017	2017_07_12_JMN.1 partial rib bone; 2017_07_12_JMN.2 horse astragalus	J. Nolasco	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
7/12/2017	none	M. Serrano	Swing	La Brea
7/12/2017	none	A. Francois	Day	Fairfax
7/12/2017	none	J. Basuga	Day	Fairfax
7/12/2017	none	F. Palacios	Day	La Brea
7/13/2017	none	F. Palacios	Day	La Brea
7/13/2017	none	J. Nolasco	Day	La Brea
7/13/2017	none	M. Serrano	Swing	La Brea
7/13/2017	none	A. Francois	Day	Fairfax
7/13/2017	none	B. Ader	Day	Fairfax
7/14/2017	none	F. Palacios	Day	La Brea
7/14/2017	none	J. Nolasco	Day	La Brea
7/14/2017	none	J. Basuga	Day	Fairfax
7/14/2017	none	M. Serrano	Swing	La Brea
7/14/2017	none	B. Ader	Day	Fairfax
7/15/2017	none	A. Francois	Day	La Brea
7/15/2017	none	J. Nolasco	Day	La Brea
7/15/2017	none	M. Serrano	Swing	La Brea
7/15/2017	none	S. Austin	Day	La Brea
7/17/2017	none	B. Ader	Swing	La Brea
7/17/2017	none	A. Francois	Day	Fairfax
7/17/2017	none	J. Nolasco	Day	Fairfax
7/17/2017	none	J. Basuga	Day	La Brea
7/17/2017	none	F. Palacios	Day	La Brea
7/18/2017	none	M. Serrano	Swing	La Brea
7/18/2017	none	A. Francois	Day	Fairfax
7/18/2017	none	J. Nolasco	Day	Fairfax
7/18/2017	none	J. Basuga	Day	La Brea
7/18/2017	none	F. Palacios	Day	La Brea
7/19/2017	none	M. Serrano	Swing	La Brea
7/19/2017	none	B. Ader	Day	Fairfax
7/19/2017	none	F. Palacios	Day	La Brea
7/19/2017	none	J. Nolasco	Day	Fairfax
7/19/2017	none	J. Basuga	Day	La Brea
7/20/2017	none	M. Serrano	Swing	La Brea
7/20/2017	none	A. Francois	Day	Fairfax
7/20/2017	none	J. Nolasco	Day	Fairfax
7/20/2017	none	F. Palacios	Day	La Brea
7/20/2017	none	J. Basuga	Day	La Brea
7/21/2017	none	B. Ader	Day	Fairfax
7/21/2017	none	M. Serrano	Swing	La Brea
7/21/2017	none	A. Francois	Day	Fairfax
7/21/2017	none	J. Basuga	Day	La Brea
7/21/2017	none	F. Palacios	Day	La Brea
7/22/2017	none	J. Basuga	Day	La Brea
7/22/2017	none	S. Austin	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
7/24/2017	none	B. Ader	Day	La Brea
7/24/2017	none	F. Palacios	Day	La Brea
7/24/2017	none	A. Francois	Day	Fairfax
7/24/2017	none	M. Serrano	Swing	La Brea
7/24/2017	none	J. Basuga	Day	Fairfax
7/25/2017	none	F. Palacios	Day	La Brea
7/25/2017	none	J. Basuga	Day	La Brea
7/25/2017	none	M. Serrano	Swing	La Brea
7/25/2017	none	J. Nolasco	Day	Fairfax
7/25/2017	none	A. Francois	Day	Fairfax
7/26/2017	none	F. Palacios	Day	La Brea
7/26/2017	none	J. Basuga	Day	La Brea
7/26/2017	none	M. Serrano	Swing	La Brea
7/26/2017	none	J. Nolasco	Day	Fairfax
7/26/2017	none	A. Francois	Day	Fairfax
7/27/2017	none	B. Ader	Day	La Brea
7/27/2017	none	F. Palacios	Day	La Brea
7/27/2017	2017_07_27_MES.1 rib bone fragment	M. Serrano	Swing	La Brea
7/27/2017	none	J. Nolasco	Day	Fairfax
7/27/2017	none	A. Francois	Day	Fairfax
7/28/2017	none	B. Ader	Day	La Brea
7/28/2017	none	M. Serrano	Swing	La Brea
7/28/2017	none	J. Basuga	Day	Fairfax
7/28/2017	none	J. Nolasco	Day	Fairfax
7/28/2017	none	F. Palacios	Day	La Brea
7/29/2017	none	J. Mort	Swing	La Brea
7/29/2017	none	J. Nolasco	Day	Fairfax
7/29/2017	none	S. Austin	Day	La Brea
7/31/2017	none	B. Ader	Day	La Brea
7/31/2017	none	J. Basuga	Day	La Brea
7/31/2017	none	M. Serrano	Swing	La Brea
7/31/2017	none	F. Palacios	Day	Fairfax
7/31/2017	none	A. Francois	Day	Fairfax
8/1/2017	none	A. Francois	Day	La Brea
8/1/2017	none	B. Ader	Day	Fairfax
8/1/2017	none	F. Palacios	Day	Fairfax
8/1/2017	none	J. Nolasco	Day	Fairfax
8/1/2017	none	M. Serrano	Swing	La Brea
8/1/2017	none	J. Mort	Swing	Fairfax
8/2/2017	none	A. Francois	Day	La Brea
8/2/2017	none	J. Basuga	Day	La Brea
8/2/2017	none	M. Serrano	Swing	La Brea
8/2/2017	none	F. Palacios	Day	Fairfax
8/2/2017	none	J. Nolasco	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
8/2/2017	none	J. Mort	Swing	Fairfax
8/3/2017	none	A. Francois	Day	La Brea
8/3/2017	none	J. Basuga	Day	La Brea
8/3/2017	none	M. Serrano	Swing	La Brea
8/3/2017	none	F. Palacios	Day	Fairfax
8/3/2017	none	J. Mort	Swing	Fairfax
8/3/2017	none	J. Nolasco	Day	Fairfax
8/4/2017	none	A. Francois	Day	La Brea
8/4/2017	none	B. Ader	Day	La Brea
8/4/2017	none	M. Serrano	Swing	La Brea
8/4/2017	none	J. Basuga	Day	Fairfax
8/4/2017	none	J. Mort	Swing	Fairfax
8/4/2017	none	J. Nolasco	Day	Fairfax
8/4/2017	none	F. Palacios	Swing	La Brea
8/5/2017	none	J. Nolasco	Day	Fairfax
8/5/2017	none	S. Austin	Day	La Brea
8/5/2017	none	F. Palacios	Swing	La Brea
8/7/2017	none	B. Ader	Day	La Brea
8/7/2017	none	J. Basuga	Day	La Brea
8/7/2017	none	M. Serrano	Swing	La Brea
8/7/2017	none	A. Francois	Day	Fairfax
8/7/2017	none	F. Palacios	Day	Fairfax
8/7/2017	none	J. Mort	Swing	Fairfax
8/8/2017	none	A. Francois	Day	La Brea
8/8/2017	none	J. Basuga	Day	La Brea
8/8/2017	none	M. Serrano	Swing	La Brea
8/8/2017	none	J. Mort	Swing	Fairfax
8/8/2017	none	J. Nolasco	Day	Fairfax
8/8/2017	none	F. Palacios	Swing	Fairfax
8/9/2017	none	B. Ader	Day	La Brea
8/9/2017	none	J. Basuga	Day	La Brea
8/9/2017	none	J. Mort	Swing	La Brea & Fairfax
8/9/2017	none	M. Serrano	Swing	La Brea
8/9/2017	none	J. Nolasco	Day	Fairfax
8/9/2017	none	F. Palacios	Day	Fairfax
8/10/2017	none	A. Francois	Day	La Brea
8/10/2017	none	B. Ader	Day	La Brea
8/10/2017	none	M. Serrano	Swing	La Brea
8/10/2017	none	J. Basuga	Day	Fairfax
8/10/2017	none	J. Nolasco	Day	Fairfax
8/11/2017	none	J. Basuga	Day	La Brea
8/11/2017	none	J. Nolasco	Day	Fairfax
8/11/2017	none	B. Ader	Day	La Brea
8/11/2017	none	F. Palacios	Swing	La Brea
8/12/2017	none	B. Ader	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
8/12/2017	none	S. Austin	Day	La Brea
8/12/2017	none	F. Palacios	Swing	La Brea
8/14/2017	none	A. Francois	Day	La Brea
8/14/2017	none	B. Ader	Day	La Brea
8/14/2017	none	J. Mort	Swing	Fairfax
8/14/2017	none	J. Basuga	Day	La Brea
8/14/2017	none	F. Palacios	Day	Fairfax
8/14/2017	none	M. Serrano	Swing	La Brea
8/15/2017	none	J. Mort	Swing	La Brea
8/15/2017	none	A. Francois	Day	Fairfax
8/15/2017	none	J. Nolasco	Day	La Brea
8/15/2017	none	F. Palacios	Day	La Brea
8/15/2017	none	M. Serrano	Swing	Fairfax
8/16/2017	none	J. Basuga	Day	La Brea
8/16/2017	2017_08_16_JLM.1 fossil shell fragment in float	J. Mort	Swing	La Brea
8/16/2017	none	A. Francois	Day	Fairfax
8/16/2017	none	F. Palacios	Day	Fairfax
8/16/2017	none	M. Serrano	Swing	Fairfax
8/16/2017	none	J. Nolasco	Day	La Brea
8/17/2017	none	J. Mort	Swing	La Brea
8/17/2017	none	J. Nolasco	Day	La Brea
8/17/2017	none	A. Francois	Day	Fairfax
8/17/2017	none	J. Basuga	Day	Fairfax
8/17/2017	none	M. Serrano	Swing	Fairfax
8/18/2017	none	J. Nolasco	Day	Fairfax
8/18/2017	none	M. Serrano	Swing	Fairfax
8/18/2017	none	A. Francois	Day	La Brea
8/18/2017	none	F. Palacios	Swing	La Brea
8/18/2017	none	J. Basuga	Day	La Brea
8/19/2017	none	A. Francois	Day	La Brea
8/19/2017	none	J. Mort	Swing	La Brea
8/19/2017	none	J. Nolasco	Day	La Brea
8/21/2017	none	J. Nolasco	Day	La Brea
8/21/2017	none	M. Serrano	Swing	La Brea
8/21/2017	none	F. Palacios	Swing	Fairfax
8/21/2017	none	J. Basuga	Day	Fairfax
8/21/2017	none	A. Leger	Day	La Brea
8/22/2017	none	J. Nolasco	Day	La Brea
8/22/2017	none	A. Francois	Day	La Brea
8/22/2017	none	M. Serrano	Swing	La Brea
8/22/2017	none	F. Palacios	Swing	Fairfax
8/22/2017	none	J. Basuga	Day	Fairfax
8/23/2017	none	J. Mort	Swing	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
8/23/2017	none	J. Nolasco	Day	La Brea
8/23/2017	none	J. Basuga	Day	Fairfax
8/23/2017	none	F. Palacios	Swing	Fairfax
8/23/2017	none	A. Leger	Day	La Brea
8/24/2017	none	J. Mort	Swing	La Brea
8/24/2017	none	A. Francois	Day	La Brea
8/24/2017	none	M. Serrano	Day	La Brea
8/24/2017	none	F. Palacios	Swing	Fairfax
8/24/2017	none	J. Basuga	Day	Fairfax
8/25/2017	none	A. Francois	Day	La Brea
8/25/2017	none	J. Mort	Swing	La Brea
8/25/2017	none	M. Serrano	Day	La Brea
8/25/2017	none	F. Palacios	Swing	Fairfax
8/25/2017	none	J. Basuga	Day	Fairfax
8/26/2017	none	A. Francois	Day	La Brea
8/26/2017	none	J. Mort	Swing	La Brea
8/26/2017	none	J. Basuga	Day	La Brea
8/28/2017	none	J. Nolasco	Day	La Brea
8/28/2017	none	J. Basuga	Day	La Brea
8/28/2017	none	M. Serrano	Swing	La Brea
8/28/2017	none	F. Palacios	Swing	Fairfax
8/28/2017	none	A. Leger	Day	Fairfax
8/29/2017	none	J. Nolasco	Day	La Brea
8/29/2017	none	M. Serrano	Swing	La Brea
8/29/2017	none	J. Basuga	Day	La Brea
8/29/2017	none	A. Leger	Day	Fairfax
8/29/2017	none	F. Palacios	Swing	Fairfax
8/30/2017	none	J. Mort	Swing	La Brea
8/30/2017	none	J. Nolasco	Day	La Brea
8/30/2017	none	J. Basuga	Day	Fairfax
8/30/2017	none	A. Francois	Day	La Brea
8/30/2017	none	F. Palacios	Swing	Fairfax
8/31/2017	none	S. Austin	Swing	La Brea
8/31/2017	none	J. Basuga	Day	Fairfax
8/31/2017	none	J. Nolasco	Day	La Brea
8/31/2017	none	M. Serrano	Day	La Brea
8/31/2017	none	F. Palacios	Swing	Fairfax
9/1/2017	none	F. Palacios	Swing	La Brea
9/1/2017	none	B. Ader	Day	La Brea
9/1/2017	none	A. Francois	Day	La Brea
9/1/2017	none	M. Serrano	Swing	Fairfax
9/5/2017	none	M. Serrano	Swing	Fairfax
9/5/2017	none	B. Ader	Day	La Brea
9/5/2017	none	J. Mort	Swing	La Brea
9/5/2017	none	J. Nolasco	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
9/5/2017	none	J. Basuga	Day	Fairfax
9/5/2017	none	F. Palacios	Swing	Fairfax
9/6/2017	none	M. Serrano	Swing	Fairfax
9/6/2017	none	A. Francois	Day	La Brea
9/6/2017	none	J. Mort	Swing	La Brea
9/6/2017	none	J. Nolasco	Day	La Brea
9/6/2017	none	F. Palacios	Day	La Cienega & Fairfax
9/7/2017	none	M. Serrano	Swing	Fairfax
9/7/2017	none	B. Ader	Day	La Brea
9/7/2017	none	J. Mort	Swing	La Brea
9/7/2017	none	J. Nolasco	Day	La Brea
9/7/2017	none	F. Palacios	Day	Fairfax
9/7/2017	none	J. Basuga	Day	Fairfax
9/8/2017	none	M. Serrano	Swing	Fairfax
9/8/2017	none	A. Francois	Day	La Brea
9/8/2017	none	J. Mort	Swing	La Brea
9/8/2017	none	J. Nolasco	Day	La Brea
9/8/2017	none	F. Palacios	Day	Fairfax
9/8/2017	none	J. Basuga	Day	Fairfax
9/8/2017	none	M. Serrano	Swing	Fairfax
9/9/2017	none	A. Francois	Day	La Brea
9/9/2017	none	J. Basuga	Day	La Brea
9/11/2017	none	B. Ader	Day	La Brea
9/11/2017	none	J. Nolasco	Day	La Brea
9/11/2017	none	J. Basuga	Day	Fairfax
9/11/2017	none	M. Serrano	Swing	Fairfax
9/11/2017	none	F. Palacios	Swing	La Brea
9/12/2017	none	B. Ader	Day	La Brea
9/12/2017	none	J. Mort	Swing	La Brea
9/12/2017	none	J. Nolasco	Day	La Brea
9/12/2017	none	J. Basuga	Day	Fairfax
9/12/2017	none	M. Serrano	Swing	Fairfax
9/13/2017	none	A. Francois	Day	La Brea
9/13/2017	none	B. Ader	Day	La Brea
9/13/2017	none	J. Mort	Swing	La Brea
9/13/2017	none	J. Basuga	Day	Fairfax
9/13/2017	none	M. Serrano	Swing	Fairfax
9/14/2017	none	J. Mort	Swing	La Brea
9/14/2017	none	J. Nolasco	Day	La Brea
9/14/2017	none	M. Serrano	Swing	Fairfax
9/14/2017	none	F. Palacios	Day	Fairfax
9/14/2017	none	S. Austin	Day	La Brea & La Cienega
9/15/2017	none	J. Nolasco	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
9/15/2017	none	J. Basuga	Day	Fairfax
9/15/2017	none	M. Serrano	Swing	Fairfax
9/15/2017	none	F. Palacios	Day	La Brea
9/15/2017	none	J. Basuga	Day	Fairfax
9/16/2017	none	A. Francois	Day	La Brea
9/16/2017	none	S. Austin	Day	La Brea & La Cienega
9/18/2017	none	J. Nolasco	Day	La Brea
9/18/2017	none	S. Austin	Day	La Brea & La Cienega
9/18/2017	none	B. Ader	Swing	Fairfax
9/18/2017	none	F. Palacios	Swing	La Brea
9/18/2017	none	J. Basuga	Day	Fairfax
9/19/2017	none	J. Nolasco	Day	Fairfax
9/19/2017	none	J. Mort	Swing	La Brea
9/19/2017	none	M. Serrano	Swing	Fairfax
9/19/2017	none	S. Austin	Day	La Brea & La Cienega
9/20/2017	none	J. Mort	Swing	La Brea
9/20/2017	none	A. Francois	Day	La Brea
9/20/2017	none	J. Nolasco	Day	La Brea
9/20/2017	none	F. Palacios	Day	Fairfax
9/20/2017	none	J. Basuga	Day	Fairfax
9/20/2017	none	M. Serrano	Swing	Fairfax
9/21/2017	none	J. Mort	Swing	La Brea
9/21/2017	none	J. Basuga	Day	Fairfax
9/21/2017	none	B. Ader	Day	Fairfax
9/21/2017	none	F. Palacios	Day	La Brea
9/21/2017	none	J. Nolasco	Day	La Brea
9/21/2017	none	M. Serrano	Swing	Fairfax
9/22/2017	none	A. Francois	Day	La Brea
9/22/2017	none	F. Palacios	Day	La Brea
9/22/2017	2017_09_22_JAB.1 proboscidean toe	J. Basuga	Day	Fairfax
9/22/2017	none	J. Mort	Swing	Fairfax
9/22/2017	none	M. Serrano	Swing	Fairfax
9/25/2017	none	F. Palacios	Swing	La Brea
9/25/2017	none	J. Basuga	Day	Fairfax
9/25/2017	none	J. Nolasco	Day	Fairfax
9/25/2017	none	M. Serrano	Swing	Fairfax
9/26/2017	none	J. Mort	Swing	La Brea
9/26/2017	none	J. Basuga	Day	Fairfax
9/26/2017	none	J. Nolasco	Day	Fairfax
9/26/2017	none	S. Austin	Day	La Brea
9/26/2017	none	M. Serrano	Swing	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
9/27/2017	none	A. Francois	Day	La Brea
9/27/2017	none	J. Mort	Swing	La Brea
9/27/2017	none	J. Basuga	Day	Fairfax
9/27/2017	none	M. Serrano	Swing	Fairfax
9/27/2017	none	J. Nolasco	Day	La Brea
9/28/2017	none	J. Mort	Swing	La Brea & Fairfax
9/28/2017	none	J. Basuga	Day	Fairfax
9/28/2017	none	M. Serrano	Swing	Fairfax
9/28/2017	none	J. Nolasco	Day	La Brea
9/28/2017	none	S. Austin	Day	La Brea
9/28/2017	none	F. Palacios	Day	Fairfax
9/29/2017	none	A. Francois	Day	La Brea
9/29/2017	none	J. Basuga	Day	Fairfax
9/29/2017	none	J. Mort	Swing	Fairfax
9/29/2017	none	M. Serrano	Swing	Fairfax
9/29/2017	none	F. Palacios	Day	La Brea
9/30/2017	none	A. Francois	Day	La Brea
9/30/2017	none	S. Austin	Day	La Brea
10/2/2017	none	J. Nolasco	Day	La Brea
10/2/2017	none	B. Ader	Day	Fairfax
10/2/2017	none	F. Palacios	Swing	Fairfax
10/2/2017	none	J. Basuga	Day	La Brea
10/2/2017	none	S. Austin	Swing	La Brea
10/3/2017	none	F. Palacios	Swing	Fairfax
10/3/2017	none	J. Basuga	Day	Fairfax
10/3/2017	none	B. Ader	Day	La Brea
10/3/2017	none	J. Mort	Swing	La Brea
10/3/2017	none	J. Nolasco	Day	La Brea
10/4/2017	none	F. Palacios	Swing	Fairfax
10/4/2017	none	J. Basuga	Day	Fairfax
10/4/2017	none	J. Mort	Swing	La Brea
10/4/2017	none	J. Nolasco	Day	La Brea
10/4/2017	none	A. Francois	Day	La Brea
10/5/2017	none	J. Basuga	Day	La Brea
10/5/2017	none	J. Mort	Swing	La Brea
10/5/2017	none	J. Nolasco	Day	La Brea
10/5/2017	none	F. Palacios	Swing	Fairfax
10/6/2017	none	J. Basuga	Day	Fairfax
10/6/2017	none	S. Austin	Swing	Fairfax
10/6/2017	none	A. Francois	Day	La Brea
10/6/2017	none	B. Ader	Day	La Brea
10/7/2017	none	B. Ader	Day	La Brea
10/9/2017	none	J. Nolasco	Day	La Brea
10/9/2017	none	B. Ader	Day	La Brea
10/9/2017	none	S. Austin	Swing	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
10/9/2017	none	J. Basuga	Day	Fairfax
10/9/2017	none	F. Palacios	Swing	Fairfax
10/10/2017	none	J. Mort	Swing	La Brea
10/10/2017	none	J. Nolasco	Day	La Brea
10/10/2017	none	J. Basuga	Day	Fairfax
10/10/2017	none	F. Palacios	Swing	Fairfax
10/10/2017	none	B. Ader	Day	La Brea
10/11/2017	none	J. Basuga	Day	Fairfax
10/11/2017	none	J. Mort	Swing	La Brea
10/11/2017	none	J. Nolasco	Day	La Brea
10/11/2017	none	A. Francois	Day	La Brea
10/11/2017	none	F. Palacios	Swing	Fairfax
10/12/2017	none	J. Basuga	Day	La Brea
10/12/2017	none	J. Mort	Swing	La Brea
10/12/2017	none	J. Nolasco	Day	La Brea
10/12/2017	none	F. Palacios	Swing	Fairfax
10/13/2017	none	J. Basuga	Day	Fairfax
10/13/2017	none	S. Austin	Swing	Fairfax
10/13/2017	none	B. Ader	Day	La Brea
10/13/2017	none	A. Francois	Day	La Brea
10/14/2017	none	B. Ader	Day	La Brea
10/16/2017	none	S. Austin	Swing	La Brea
10/16/2017	none	B. Ader	Day	La Brea
10/16/2017	none	J. Nolasco	Day	La Brea
10/16/2017	none	J. Basuga	Day	Fairfax
10/16/2017	none	F. Palacios	Swing	Fairfax
10/17/2017	none	B. Ader	Day	La Brea
10/17/2017	none	J. Mort	Swing	La Brea
10/17/2017	none	F. Palacios	Swing	Fairfax
10/17/2017	none	J. Nolasco	Day	La Brea
10/17/2017	none	J. Basuga	Day	Fairfax
10/18/2017	none	A. Francois	Day	La Brea
10/18/2017	none	B. Ader	Day	La Brea
10/18/2017	none	J. Basuga	Day	La Brea
10/18/2017	none	J. Mort	Swing	La Brea
10/19/2017	none	S. Austin	Day	La Brea
10/19/2017	none	J. Mort	Swing	La Brea
10/19/2017	none	F. Palacios	Swing	Fairfax
10/19/2017	none	J. Basuga	Day	Fairfax
10/19/2017	none	J. Nolasco	Day	La Brea
10/20/2017	none	A. Francois	Day	La Brea
10/20/2017	none	J. Nolasco	Day	La Brea
10/20/2017	none	J. Basuga	Day	Fairfax
10/20/2017	none	F. Palacios	Swing	Fairfax
10/23/2017	none	J. Basuga	Day	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
10/23/2017	none	J. Nolasco	Day	La Brea
10/23/2017	none	F. Palacios	Swing	La Brea
10/23/2017	none	M. Serrano	Swing	Fairfax
10/24/2017	none	J. Basuga	Day	Fairfax
10/24/2017	none	J. Nolasco	Day	La Brea
10/24/2017	none	B. Ader	Day	La Brea
10/24/2017	none	J. Mort	Swing	La Brea
10/24/2017	none	M. Serrano	Swing	Fairfax
10/25/2017	none	B. Ader	Day	La Brea
10/25/2017	none	J. Basuga	Day	Fairfax
10/25/2017	none	A. Francois	Day	La Brea
10/25/2017	none	M. Serrano	Swing	Fairfax
10/25/2017	none	F. Palacios	Day	Fairfax
10/25/2017	none	J. Mort	Swing	La Brea
10/26/2017	none	B. Ader	Day	Fairfax
10/26/2017	2017_10_26_JAB.1 broken glass bottlenecks (2, but in one mass)	J. Basuga	Day	Fairfax
10/26/2017	none	F. Palacios	Day	La Brea
10/26/2017	none	J. Nolasco	Day	La Brea
10/26/2017	none	M. Serrano	Swing	Fairfax
10/27/2017	none	J. Basuga	Day	Fairfax
10/27/2017	none	A. Francois	Day	La Brea
10/27/2017	2017_10_27_BRA.1 wood log and fragments	B. Ader	Day	La Brea
10/27/2017	none	F. Palacios	Swing	Fairfax
10/30/2017	2107_10_30_BRA.1 mammal long bone fragment	B. Ader	Day	La Brea
10/30/2017	none	J. Basuga	Day	Fairfax
10/30/2017	none	J. Nolasco	Day	La Brea
10/30/2017	none	F. Palacios	Swing	La Brea
10/30/2017	none	M. Serrano	Swing	Fairfax
10/31/2017	none	J. Nolasco	Day	La Brea
10/31/2017	none	J. Basuga	Day	Fairfax
10/31/2017	none	M. Serrano	Swing	Fairfax
10/31/2017	none	B. Ader	Day	La Brea
10/31/2017	none	J. Mort	Swing	La Brea
11/1/2017	none	A. Francois	Day	La Brea
11/1/2017	none	B. Ader	Day	La Brea
11/1/2017	none	F. Palacios	Day	Fairfax
11/1/2017	none	J. Basuga	Day	Fairfax
11/1/2017	none	J. Mort	Swing	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
11/1/2017	none	M. Serrano	Swing	Fairfax
11/2/2017	none	B. Ader	Day	Fairfax
11/2/2017	none	J. Basuga	Day	Fairfax
11/2/2017	none	F. Palacios	Day	La Brea
11/2/2017	none	J. Nolasco	Day	La Brea
11/2/2017	none	M. Serrano	Swing	Fairfax
11/2/2017	none	J. Mort	Swing	La Brea & La Cienega
11/3/2017	none	J. Nolasco	Day	La Brea
11/3/2017	none	J. Basuga	Day	Fairfax
11/3/2017	none	F. Palacios	Day	Fairfax
11/3/2017	none	A. Francois	Day	La Brea
11/4/2017	none	B. Ader	Day	La Brea
11/6/2017	none	B. Ader	Day	La Brea
11/6/2017	none	F. Palacios	Swing	La Brea
11/6/2017	none	J. Basuga	Day	Fairfax
11/6/2017	none	J. Nolasco	Day	La Brea
11/6/2017	none	M. Serrano	Swing	Fairfax
11/7/2017	none	J. Basuga	Day	Fairfax
11/7/2017	none	B. Ader	Day	La Brea
11/7/2017	none	J. Nolasco	Day	La Brea
11/7/2017	none	J. Mort	Swing	La Brea
11/7/2017	none	M. Serrano	Swing	Fairfax
11/8/2017	none	A. Francois	Day	La Brea
11/8/2017	none	J. Basuga	Day	Fairfax
11/8/2017	none	F. Palacios	Day	La Brea
11/8/2017	none	M. Serrano	Swing	Fairfax
11/8/2017	none	J. Mort	Swing	La Brea
11/9/2017	none	J. Nolasco	Day	La Brea
11/9/2017	none	J. Basuga	Day	Fairfax
11/9/2017	none	F. Palacios	Day	La Brea
11/9/2017	none	J. Mort	Swing	La Brea
11/9/2017	none	M. Serrano	Swing	Fairfax
11/10/2017	none	J. Nolasco	Day	La Brea
11/10/2017	none	J. Basuga	Day	Fairfax
11/10/2017	none	F. Palacios	Day	La Brea
11/13/2017	none	J. Nolasco	Day	La Brea
11/13/2017	none	A. Francois	Day	La Brea
11/13/2017	none	J. Basuga	Day	Fairfax
11/13/2017	none	M. Serrano	Swing	Fairfax
11/13/2017	none	F. Palacios	Swing	La Brea
11/14/2017	none	J. Mort	Swing	La Brea
11/14/2017	none	J. Nolasco	Day	La Brea
11/14/2017	none	J. Basuga	Day	Fairfax
11/14/2017	none	M. Serrano	Swing	Fairfax

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
11/14/2017	none	B. Ader	Day	La Brea
11/15/2017	none	J. Mort	Swing	La Brea
11/15/2017	none	A. Francois	Day	La Brea
11/15/2017	none	J. Basuga	Day	Fairfax
11/15/2017	none	M. Serrano	Swing	Fairfax
11/15/2017	none	F. Palacios	Day	Fairfax
11/15/2017	none	B. Ader	Day	La Brea
11/16/2017	none	B. Ader	Day	La Brea
11/16/2017	none	F. Palacios	Day	Fairfax
11/16/2017	none	J. Nolasco	Day	La Brea
11/16/2017	none	M. Serrano	Swing	Fairfax
11/16/2017	none	J. Mort	Swing	La Brea
11/17/2017	none	B. Ader	Day	La Brea
11/17/2017	none	F. Palacios	Swing	Fairfax
11/17/2017	none	J. Basuga	Day	Fairfax
11/17/2017	none	J. Nolasco	Day	La Brea
11/20/2017	none	J. Nolasco	Day	La Brea
11/20/2017	2017_11_20_BRA.1 whale bones	B. Ader	Swing	La Brea
11/20/2017	none	J. Basuga	Day	Fairfax
11/20/2017	none	C. Sharp	Day	La Brea
11/20/2017	none	F. Palacios	Swing	Fairfax
11/21/2017	none	J. Mort	Swing	La Brea
11/21/2017	none	F. Palacios	Swing	Fairfax
11/21/2017	2017_11_21_CDS.1 5 small wood fragments	C. Sharp	Day	La Brea
11/21/2017	none	J. Basuga	Day	La Brea
11/21/2017	none	J. Nolasco	Day	La Brea
11/22/2017	none	J. Nolasco	Day	La Brea
11/22/2017	none	A. Francois	Day	La Brea
11/22/2017	none	M. Serrano	Day	Fairfax
11/27/2017	none	J. Basuga	Day	La Brea
11/27/2017	none	M. Serrano	Swing	Fairfax
11/27/2017	none	F. Palacios	Swing	Fairfax
11/27/2017	none	J. Nolasco	Day	La Brea
11/28/2017	none	J. Basuga	Day	Fairfax
11/28/2017	none	B. Ader	Day	La Brea
11/28/2017	none	J. Nolasco	Day	La Brea
11/28/2017	none	J. Mort	Swing	La Brea
11/29/2017	none	B. Ader	Day	La Brea
11/29/2017	none	J. Nolasco	Day	La Brea
11/29/2017	none	F. Palacios	Day	Fairfax
11/29/2017	none	J. Mort	Swing	La Brea & Fairfax
11/30/2017	none	B. Ader	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
11/30/2017	none	F. Palacios	Day	Fairfax
11/30/2017	none	J. Mort	Swing	La Brea
11/30/2017	none	J. Basuga	Day	Fairfax
11/30/2017	none	J. Nolasco	Day	La Brea
11/30/2017	none	M. Serrano	Swing	Fairfax
12/1/2017	none	J. Basuga	Day	Fairfax
12/1/2017	none	F. Palacios	Day	Fairfax
12/1/2017	none	J. Mort	Swing	La Cienega & Fairfax
12/1/2017	none	A. Francois	Day	La Brea
12/1/2017	none	J. Nolasco	Day	La Brea
12/2/2017	none	B. Ader	Day	La Brea
12/2/2017	none	C. Sharp	Day	La Brea
12/4/2017	none	F. Palacios	Swing	La Brea
12/4/2017	more fragments from log 2017_10_27_BRA.1	B. Ader	Day	La Brea
12/4/2017	none	J. Nolasco	Day	La Brea
12/4/2017	none	M. Serrano	Swing	Fairfax
12/5/2017	none	J. Basuga	Day	La Brea
12/5/2017	none	J. Nolasco	Day	La Brea
12/5/2017	none	J. Mort	Swing	La Brea
12/5/2017	none	M. Serrano	Swing	Fairfax
12/6/2017	none	J. Basuga	Day	Fairfax
12/6/2017	none	B. Ader	Day	La Brea
12/6/2017	none	J. Nolasco	Day	La Brea
12/6/2017	none	J. Mort	Swing	La Brea
12/6/2017	none	M. Serrano	Swing	Fairfax
12/7/2017	none	J. Basuga	Day	La Brea
12/7/2017	none	F. Palacios	Day	Fairfax
12/7/2017	none	J. Mort	Swing	La Brea
12/7/2017	none	J. Nolasco	Day	La Brea
12/7/2017	none	M. Serrano	Swing	Fairfax
12/8/2017	none	J. Basuga	Day	Fairfax
12/5/2017	none	C. Sharp	Swing	Fairfax
12/8/2017	none	A. Francois	Day	La Brea
12/8/2017	none	J. Nolasco	Day	La Brea
12/9/2017	none	B. Ader	Day	La Brea
12/9/2017	none	C. Sharp	Swing	Fairfax
12/11/2017	none	B. Ader	Day	La Brea
12/11/2017	none	J. Basuga	Day	Fairfax
12/11/2017	none	F. Palacios	Swing	La Brea
12/11/2017	none	J. Nolasco	Day	La Brea
12/11/2017	none	M. Serrano	Swing	Fairfax
12/12/2017	none	B. Ader	Day	La Brea

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DATE	RESOURCES NEWLY OBSERVED	NAME	SHIFT	STATION
12/12/2017	none	J. Basuga	Day	Fairfax
12/12/2017	none	J. Mort	Swing	La Brea
12/12/2017	none	J. Nolasco	Day	La Brea
12/12/2017	none	S. Austin	Day	Fairfax
12/12/2017	none	M. Serrano	Swing	Fairfax
12/13/2017	none	A. Francois	Day	La Brea
12/13/2017	none	B. Ader	Day	La Brea
12/13/2017	none	F. Palacios	Day	Fairfax
12/13/2017	none	J. Mort	Swing	La Brea
12/13/2017	none	J. Nolasco	Day	Fairfax
12/13/2017	none	M. Serrano	Swing	Fairfax
12/14/2017	none	A. Francois	Day	La Brea
12/14/2017	2017_12_14_JAB.1 partial whale rib	J. Basuga	Day	La Brea
12/14/2017	none	C. Sharp	Swing	Fairfax
12/14/2017	none	F. Palacios	Day	Fairfax
12/14/2017	none	J. Nolasco	Day	Fairfax
12/14/2017	none	J. Mort	Swing	La Brea
12/15/2017	none	C. Sharp	Swing	Fairfax
12/15/2017	none	F. Palacios	Day	Fairfax
12/15/2017	none	J. Basuga	Day	Fairfax
12/15/2017	none	A. Francois	Day	La Brea
12/16/2017	2017_12_16_JMN.1 wood fragments	J. Nolasco	Day	La Brea
12/18/2017	none	J. Mort	Swing	La Brea
12/18/2017	2017_12_18_JMN.1 whale fragment	J. Nolasco	Day	La Brea
12/18/2017	none	J. Basuga	Day	Fairfax
12/18/2017	none	A. Francois	Day	Fairfax
12/18/2017	none	M. Serrano	Swing	Fairfax
12/19/2017	none	A. Francois	Day	Fairfax
12/19/2017	none	J. Mort	Swing	La Brea
12/19/2017	2017_12_19_SA.1 large pieces of wood	S. Austin	Day	La Brea
12/19/2017	none	J. Basuga	Day	Fairfax
12/19/2017	none	M. Serrano	Swing	Fairfax
12/20/2017	none	J. Mort	Swing	La Brea
12/20/2017	none	J. Nolasco	Day	La Brea
12/20/2017	none	M. Serrano	Swing	Fairfax
12/21/2017	none	J. Basuga	Day	La Brea
12/21/2017	none	J. Mort	Swing	La Brea
12/21/2017	none	J. Nolasco	Day	La Brea
12/21/2017	none	M. Serrano	Swing	Fairfax
12/22/2017	none	A. Francois	Day	Fairfax
12/22/2017	none	J. Basuga	Day	La Brea

APPENDIX B. LABORATORY WORK SUMMARY

2017 PLE Section 1 Paleontology Progress Report

DATE	NAME	HOURS	TASK
1/27/2017	B. Ader	6.00	Lab Preparation
2/22/2017	B. Ader	7.50	2016_11_23_BRA.1
5/25/2017	B. Ader	10.00	2016_11_29_FJP.1
5/31/2017	B. Ader	9.00	2016_11_29_FJP.1
5/31/2017	F. Palacios	8.00	2016_11_29_FJP.1
6/27/2017	B. Ader	5.00	Mammoth skull move and prep
7/1/2017	B. Ader	7.00	2016_11_29_FJP.1
7/2/2017	B. Ader	7.50	2016_11_29_FJP.1
7/8/2017	B. Ader	7.50	2016_11_29_FJP.1; 2017_06_19_JMN.1
7/9/2017	B. Ader	7.00	2016_11_29_FJP.1; 2017_06_19_JMN.1
7/15/2017	B. Ader	4.00	2016_11_29_FJP.1; 2017_06_19_JMN.1; 2017_07_13_JMN.1
7/16/2017	B. Ader	4.00	2016_11_29_FJP.1; 2017_06_19_JMN.1
7/22/2017	B. Ader	7.00	2016_11_29_FJP.1
7/23/2017	B. Ader	6.00	2016_11_29_FJP.1
7/29/2017	B. Ader	5.00	2016_11_29_FJP.1; 2017_07_27_MES.1
9/9/2017	B. Ader	8.00	2016_11_23_BRA.1; 2016_11_29_FJP.1
9/19/2017	B. Ader	5.50	2016_11_29_FJP.1
9/20/2017	B. Ader	4.00	2016_11_29_FJP.1
12/18/2017	B. Ader	8.00	2016_11_29_FJP.1
12/18/2017	C. Sharp	8.00	2016_11_29_FJP.1
12/19/2017	C. Sharp	8.00	2016_11_29_FJP.1; 2017_04_12_BRA.2
12/20/2017	C. Sharp	8.00	2016_11_29_FJP.1; 2017_04_12_BRA.2
12/21/2017	C. Sharp	8.00	2016_11_29_FJP.1; 2017_04_12_BRA.2
12/22/2017	C. Sharp	8.00	2016_11_29_FJP.1; 2017_04_12_BRA.2