

General Biological Resources Assessment Update Red Hill Cinder Mine Expansion Project

Unincorporated Area of Southwestern Inyo County, California
USGS – *Little Lake* Quadrangle,
Sections 30 & 31 of Township 22 South, Range 38 East

Prepared for:

Lilburn Corporation

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Certification

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Certification: I hereby certify that the statements furnished herein, and in the attached exhibits present data and information required for this Biological Resources Report to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief. This report was prepared in accordance with professional requirements and standards. Fieldwork conducted for this assessment was overseen by me. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project proponent and that I have no financial interest in the project.

A handwritten signature in black ink, appearing to read "Shay Lawrey". The signature is written in a cursive, flowing style.

Shay Lawrey, Ecologist/Regulatory Specialist

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1 Introduction

On behalf of Lilburn Corporation, in March 2020, Jericho Systems, Inc. (Jericho) conducted a general biological resources assessment (BRA) and habitat assessments for the burrowing owl (*Athene cunicularia*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) for the Red Hill Cinder Mine Expansion Project (project). The first BRA and habitat assessments were performed in 2018 which concluded that if the site had not been disturbed by January 2019, a re-evaluation of habitat should be performed. The project has not yet proceeded, therefore, this report represents the results of the habitat re-evaluation.

The purpose of the BRA was to address potential effects of the project to designated critical habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW [formerly California Department of Fish and Game]) and/or the California Native Plant Society (CNPS).

The project site was assessed for sensitive species known to occur locally. Attention was focused on those State- and/or federally-listed as threatened or endangered species and California Fully Protected species that have been documented in the project vicinity, whose habitat requirements are present within the vicinity of the project site. Results of the survey and habitat assessment are intended to provide sufficient baseline information to the project proponent and, if required, to federal and State regulatory agencies, including the U.S. Fish and Wildlife Service (USFWS) and CDFW, respectively, to determine if impacts will occur and to identify mitigation measures to offset those impacts.

In addition to the BRA and habitat assessments conducted in 2018, Jericho biologists Daniel Smith, Eugene Jennings and Todd White also conducted a Jurisdictional Delineation (JD) of the project site. For the March 2020 re-evaluation, Jericho biologists Christian Nordal and CJ Fotheringham also conducted an updated JD. The purpose of the JD is to determine the extent of State and federal jurisdictional waters within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and CDFW under Section 1602 of the California Fish and Game Code (FGC), respectively.

1.1 Project Description

The project will consist of expanding the existing Red Hill Quarry onto an approximately 60-acre site that is adjacent the northeast of the existing cinder mine. The expansion area is entirely within privately-owned land (Assessor Parcel Number [APN]: 03709011), surrounded by Bureau of Land Management (BLM) public lands and the Fossil Falls Scenic Area to the south. The expansion project is covered under the existing 1979 Red Hill Quarry mining permit, which is good through 2019. The project is adjacent the southeast side of Red Hill, which is a cinder cone volcano comprised of pumice and lava rock. The project will completely avoid impacts to the cinder cone itself.

1.2 Project Location

The project site is located approximately 0.75 miles east of U.S. Route 395 (US 395), adjacent the southeast side of Red Hill, approximately 5 miles south of Coso Junction and 2.4 miles north of Little Lake, near the unincorporated area of Coso, in southwestern Inyo County, California (Figure 1). The project site is situated in the northeast corner of the *Little Lake* USGS 7.5-minute series quadrangle, in Sections 30 and 31 of Township 22 South, Range 38 East, Mount Diablo Base Meridian.

The project area is accessed from US 395 by Cinder Road (Figures 1&2).

1.3 Environmental Setting

The project site is situated near Coso, in the southern end of the Rose Valley, between the Sierra Nevada Mountains to the west and the Coso Range to the east, in the western Mojave Desert. The Coso area is subject to both seasonal and annual variations in temperature and precipitation. Average annual maximum temperatures peak at 95.6 degrees Fahrenheit (° F) in July and fall to an average annual minimum temperature of 29.1° F in January. Average annual precipitation is greatest from November through March and reaches a peak in February (1.3 inches). Precipitation is lowest in the month of June (0.09 inches). Annual precipitation averages 6.5 inches. The topography of the project area is relatively flat on the eastern portion and sloped on the western portion, along the base of Red Hill. Elevation on site ranges from approximately 3,340 feet above mean sea level (amsl) in the eastern portion of the site, to 3,430 feet amsl in the westernmost portion of the site, nearest the base of the Red Hill cinder cone.

Hydrologically, the project area is located within an undefined Hydrologic Sub-Area (HSA 624.10) which comprises a 170,880-acre drainage area within the larger Indian Wells-Searles Valleys Watershed (HUC 18090205).

Soils within the project area are comprised primarily of cinder sand derived from the adjacent Red Hill cinder volcano.

The general project vicinity consists existing mining operations (Red Hill Quarry) and undeveloped open space. Habitat surrounding the project site consists primarily of *Ambrosia dumosa* Shrubland Alliance (white bursage scrub). The project site itself is devoid of vegetation, consisting entirely of cinder sand and gravel. Much of the project site is relatively undisturbed, however the south/southwestern most portion of the site is disturbed due to the existing mining operations.

2 Assessment Methodology

2.1 Biological Resources Assessment

Data regarding biological resources on the project site were obtained through literature review and field investigations. Prior to performing the surveys, available databases and documentation relevant to the project site were reviewed for documented occurrences of sensitive species in the area. The U.S. Fish and Wildlife Service (USFWS) threatened and endangered species occurrence data overlay and the most recent versions of the California Natural Diversity Database (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) databases, as well as the BLM California Special Status Plants list, were searched for sensitive species data on the *Little Lake*, *Coso Junction*, *Cactus Peak* and *Volcano Peak* USGS 7.5-minute series quadrangles. The project site is situated in the northeastern portion of the *Little Lake* quad. The site's proximity to the *Coso Junction*, *Cactus Peak* and *Volcano Peak* quads lead to their inclusion in the review. These databases contain records of reported occurrences of State- and federally-listed species or otherwise sensitive species and habitats that may occur within the vicinity of the project site. Other available technical information on the biological resources of the area was also reviewed including previous surveys and recent findings. These records were revalidated on March 17, 2020.

Jericho biologists Daniel Smith, Eugene Jennings and Todd White conducted a biological resources assessment of the project area on January 29, 2018. Jericho biologists Christian Nordal and CJ

Fotheringham conducted a site re-evaluation on March 14, 2020. The survey area encompassed the entire project site and included 100 percent coverage of the site with transects spaced approximately 10 meters apart, as well as an approximately 500-foot buffer area surrounding the site. Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined per known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. The focus of the faunal species surveys was to identify potential habitat for special status wildlife within the project area.

2.2 Jurisdictional Delineation

On January 30, 2018, Jericho biologists Daniel Smith, Eugene Jennings and Todd White also evaluated the project site and adjacent areas for the presence of riverine/riparian/wetland habitat and jurisdictional waters, i.e. waters of the U.S. as regulated by the U.S. Army Corps of Engineer (USACE) and Regional Water Quality Control (RWQCB), and/or jurisdictional streambed and associated riparian habitat as regulated by the California Department Fish and Wildlife (CDFW). The project site was re-evaluated for these features on March 17, 2020 by Jericho biologists Christian Nordal and CJ Fotheringham.

Prior to the field visit, aerial photographs of the site were viewed and compared with the surrounding USGS 7.5-minute topographic quadrangle maps to identify drainage features within the survey area as indicated from topographic changes, blue-line features, or visible drainage patterns. The U.S. Fish and Wildlife Service National Wetland Inventory and Environmental Protection Agency (EPA) Water Program “My Waters” data layer were also reviewed to determine whether any hydrologic features and wetland areas had been documented within the vicinity of the site. Similarly, the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soil maps for southwestern Inyo County were used to identify the soil series in the area and to check these soils to determine whether they are regionally identified as hydric soils. Upstream and downstream connectivity of waterways (if present) was reviewed in the field and on aerial photographs and topographic maps to determine jurisdictional status.

During the field surveys, the survey team carefully assessed the site for depressions, inundation, presence of hydrophytic vegetation, staining, cracked soil, ponding, and indicators of active surface flow and corresponding physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris. Suspected jurisdictional areas were checked for the presence of definable channels, soils, and hydrology.

Evaluation of potential federal jurisdiction followed the regulations set forth in 33CFR part 328 and the USACE guidance documents and evaluation of potential State jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010)..

To be considered a *jurisdictional wetland* under the federal Clean Water Act, Section 404, an area must possess three (3) wetland characteristics: hydrophytic *vegetation*, hydric *soils*, and wetland *hydrology*.

- ▶ ***Hydrophytic vegetation***: Hydrophytic vegetation is plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, and herb layers) is considered hydrophytic. Hydrophytic species are those included on the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2013). Each species on the list is rated per a wetland indicator category, as shown in Table 1. To be considered hydrophytic, the species must have *wetland indicator status*, i.e., be rated as OBL, FACW or FAC.

Table 1: Wetland Indicator Vegetation Categories

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability 67 to 99%)
Facultative (FAC)	Equally likely to occur in wetlands and non-wetlands (estimated probability 34 to 66%)
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%)
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%)

- ▶ **Hydric Soil:** Soil maps from the USDA-NRCS Web Soil Survey (USDA 2016) were reviewed for soil types found within the project area. Hydric soils are saturated or inundated long enough during the growing season to develop anaerobic conditions that favor growth and regeneration of hydrophytic vegetation. There are several indirect indicators that may signify the presence of hydric soils including hydrogen sulfide generation, the presence of iron and manganese concretions, certain soil colors, gleying, and the presence of mottling. Generally, hydric soils are dark in color or may be gleyed (bluish, greenish, or grayish), resulting from soil development under anoxic (without oxygen) conditions. Bright mottles within an otherwise dark soil matrix indicate periodic saturation with intervening periods of soil aeration. Hydric indicators are particularly difficult to observe in sandy soils, which are often recently deposited soils of flood plains (entisols) and usually lack sufficient fines (clay and silt) and organic material to allow use of soil color as a reliable indicator of hydric conditions. Hydric soil indicators in sandy soils include accumulations of organic matter in the surface horizon, vertical streaking of subsurface horizons by organic matter, and organic pans.

The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000). Soil pits were dug to an approximate depth of 18 inches to evaluate soil profiles for indications of anaerobic and redoximorphic (hydric) conditions in the subsurface.

- ▶ **Wetland Hydrology:** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

3 Results

3.1 Existing Biological and Physical Conditions

The project site consists almost entirely of undeveloped open space, occupying mostly flat to gently-sloped terrain that surrounds the Red Hill cinder cone. The topography of the site is mostly uniform throughout, comprised of volcanic cinders or cinder sand and the site is completely devoid of vegetation. Most of the site is relatively undisturbed, with some evidence of off-road vehicle use. Disturbances on site are primarily due to the existing mining operations, which border the southernmost end of the project site, and include unpaved roads, temporary structures and material stockpiles. The project to expand the mine has not yet occurred, therefore, there were no additional disturbances beyond the existing mining operations.

3.1.1 Habitat

The project site itself is devoid of vegetation, consisting entirely of cinder sand and gravel (see attached photos). The habitat surrounding the project site consists primarily of *Ambrosia dumosa* Shrubland Alliance (white bursage scrub). The white bursage scrub habitat adjacent the north/northwestern portion of the site is co-dominated by white bursage (*Ambrosia dumosa*) and allscale saltbush (*Atriplex polycarpa*). However, this habitat is more species diverse adjacent the southern/southwestern portion of the site, where it is co-dominated by white bursage, burrobrush (*Ambrosia salsola*), allscale saltbush and shadscale (*Atriplex confertifolia*). Other native plant species identified within the survey area include, Devil's lettuce (*Amsinckia tessellata*), Fremont's milk vetch (*Astragalus lentiginosus* var. *fremontii*), Mojave eriastrum (*Eriastrum densifolium* ssp. *mohavense*), desert trumpet (*Eriogonum inflatum*), angle stemmed buckwheat (*E. maculatum*), yellow turbins (*E. pusillum*), kidney leaf buckwheat (*E. reniforme*), desert bush nettle (*Eucnide urens*), creosote (*Larrea tridentata*), desert star (*Monoptilon bellidiforme*), annual psathyrotes (*Psathyrotes annua*), sage thistle (*Salvia carduacea*), desert mallow (*Sphaeralcea ambigua*) and Mojave woodyaster (*Xylorhiza tortifolia*).

There has been no change in the habitat types found on site between the 2018 survey and the 2020 survey.

3.1.2 Wildlife

3.1.2.1 Amphibians and Reptiles

No amphibian species were observed or otherwise detected within the project area and none are expected to occur. The only reptile species observed within the project area was western side-blotched lizard (*Uta stansburiana elegans*). Other common species expected to occur within the project area include Great Basin whiptail (*Aspidoscellis tigris tigris*), zebra-tailed lizard (*Callisaurus draconoides*), desert banded gecko (*Coleonyx variegatus variegatus*), Panamint rattlesnake (*Crotalus stephensi*), desert iguana (*Dipsosaurus dorsalis*), California kingsnake (*Lampropeltis californiae*) and Great Basin gopher snake (*Pituophis catenifer deserticola*).

3.1.2.2 Birds

Avian species observed in the project area include northern harrier (*Circus cyaneus*), common raven (*Corvus corax*) and rock wren (*Salpinctes obsoletus*).

3.1.2.3 Mammals

Identification of mammals within the project area was generally determined by physical evidence rather than direct visual identification. This is because 1) many of the mammal species that potentially occur onsite are nocturnal and would not have been active during the survey and 2) no mammal trapping was

performed. The only mammal species observed was black-tailed jackrabbit (*Lepus californicus*). Other common species expected to occur within the project area include coyote (*Canis latrans*), Merriam's kangaroo rat (*Dipodomys merriami*), and desert cottontail (*Sylvilagus audubonii*).

Overall, there appears to be no change to the wildlife found on site from 2018 and 2020 surveys.

3.2 Special Status Species and Habitats

Per the CNDDDB, CNPSEI, and other relevant literature and databases, 23 sensitive species (10 plant species, 13 animal species) have been documented in the *Little Lake*, *Coso Junction*, *Cactus Peak* and *Volcano Peak* USGS 7.5-minute series quadrangles. This list of sensitive species and habitats includes any State- and/or federally-listed threatened or endangered species, California Fully Protected species, CDFW designated Species of Special Concern (SSC), and otherwise Special Animals. "Special Animals" is a general term that refers to all the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The CDFW considers the taxa on this list to be those of greatest conservation need.

There are three State- and/or federally-listed species documented within the *Little Lake*, *Coso Junction*, *Cactus Peak* and *Volcano Peak* quads. Of the three State- and/or federally-listed species, only the following two have been documented in the project vicinity (within approximately 7 miles):

- Desert tortoise (*Gopherus agassizii*)
- Mohave ground squirrel (*Xerospermophilus mohavensis*)

Although not State- or federally-listed as threatened or endangered species, the golden eagle (*Aquila chrysaetos* [GOEA]) is a CDFW Fully Protected species and BUOW are considered a State and federal SSC, and both species are protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California FGC (FGC #3513 & #3503.5). There is potentially suitable habitat for these species within the project vicinity and both species have been documented in the project vicinity. Therefore, GOEA and BUOW will be included in the discussion below.

Additionally, the following two BLM Sensitive Plant Species have been documented in the project vicinity and the environmental conditions within the habitat surrounding the project site are suitable to support these species:

- Creamy blazing star (*Mentzelia tridentata*)
- Charlotte's phacelia (*Phacelia nashiana*)

An analysis of the likelihood for occurrence of all CNDDDB sensitive species documented in the *Little Lake*, *Coso Junction*, *Cactus Peak* and *Volcano Peak* quads is provided in Table 2. This analysis considers species' range as well as documentation within the vicinity of the project area and includes the habitat requirements for each species and the potential for their occurrence on the site, based on required habitat elements and range relative to the current site conditions.

3.2.1 Special Status Species

No State- and/or federally-listed threatened or endangered species, or other sensitive species, were observed on site during the reconnaissance-level field surveys performed in 2018 or 2020. However, there is some habitat adjacent the proposed project footprint that may be suitable for several sensitive species identified in the literature review (Table 2), and several sensitive species have been documented near the project site.

In addition to the general biological resources assessment, habitat suitability assessments were conducted within the project area for BUOW and Mohave ground squirrel.

Desert Tortoise – Threatened (State/Federal)

The desert tortoise is a State- and federally-listed threatened species. Throughout its range, it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates. The desert tortoise is typically found in creosote bush scrub. They are most often found on level or sloped ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and in hillsides. Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict exact numbers of individuals on a site based upon burrow numbers.

In 1992 the BLM issued the *California Statewide Desert Tortoise Management Policy* which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable populations. The management goal for Category III areas is to limit population declines to the extent feasible. In April 1993, the BLM amended the CDCA plan to delineate these three categories of desert tortoise habitat on public lands. With the adoption of the West Mojave Plan (BLM 2005), all lands that are outside Desert Wildlife Management Areas are characterized as Category 3 Habitat, which is the lowest priority management area for viable populations of the desert tortoise.

Findings: Per the CNDDDB, the nearest documented desert tortoise occurrence (2006) is approximately 6.4 miles northwest of the project site. There are no desert tortoise occurrences documented in the project area, and there is no suitable habitat for this species within the project site. However, some of the surrounding area adjacent portions of the project site does contain white bursage scrub habitat suitable to support desert tortoise.

Per the USFWS desert tortoise Critical Habitat overlay, the project site is not within any USFWS designated desert tortoise Critical Habitat. Furthermore, the project site is not within a BLM designated Desert Wildlife Management Area (USFWS 2011). Therefore, the habitat surrounding the site would be characterized as Category 3 Habitat, per the BLM categorization of desert tortoise habitat on public lands.

The assessment survey was structured, in part, to detect desert tortoise. The survey consisted of walking transects spaced approximately 10 meters apart to provide 100% visual coverage of the project site, as well as an approximately 500-foot buffer area surrounding the site. The result of the survey was that no evidence of desert tortoise was found in the survey area. No desert tortoise individuals or sign including burrows or scat were observed. Therefore, desert tortoise are considered absent from the project site.

The 2020 findings are consistent with the 2018 findings.

Mohave Ground Squirrel – Threatened (State)

The Mohave ground squirrel is a State-listed threatened species. This small, grayish, diurnal ground squirrel is endemic to two million hectares in the western Mojave Desert. It typically inhabits sandy soils of alkali sink and creosote bush scrub habitat. Mohave ground squirrel forage on leaves and seeds and aestivate/hibernate for long periods of the year. Plants documented as forage for this species include: fiddleneck (*Amsinckia tessellata*), allscale (*Atriplex canescens* and *A. polycarpa*), desert holly (*A.*

hymenelytra), coreopsis (*Coreopsis* sp.), spiny hopsage (*Grayia spinosa*), winterfat (*Krascheninnikovia lanata*), wolfberry (*Lycium andersonii*), Joshua tree (*Yucca brevifolia*) and the seeds of Joshua tree. It is suspected that Mohave ground squirrel forage on the plant species with the highest water content available at the time.

Findings: Although a focused Mohave ground squirrel trapping survey was not performed, Jericho conducted a Mohave ground squirrel habitat suitability assessment of the proposed project site and adjacent habitat. The habitat assessment included a pedestrian field assessment, review of reported occurrences of the Mohave ground squirrel in the region (CNDDDB 2018), and adherence to CDFW's criteria for assessing potential impacts to the Mohave ground squirrel. The criteria questions are as follows:

1. *Is the site within the range of the Mohave ground squirrel?;*
2. *Is there native habitat with a relatively diverse shrub component?; and*
3. *Is the site surrounded by development and therefore isolated from potentially occupied habitat?*

The project site falls within the current range of the MGS but is located outside, to the east, of the Mohave ground squirrel Conservation Area set forth in the West Mojave Plan (BLM 2005). Per the CNDDDB, there are 21 recent and historic Mohave ground squirrel occurrences documented in the *Little Lake, Coso Junction, Cactus Peak* and *Volcano Peak* quads. The nearest historically documented occurrence (1988) for Mohave ground squirrel is approximately 2 miles north of the project site. The nearest recently documented Mohave ground squirrel occurrence (2010) is approximately 8 miles northeast of the project site.

The entire project site (approximately 60 acres) consists of unvegetated cinder sand, which would not be considered suitable to support this species due to a lack of forage plants. However, some of the surrounding area adjacent of the project site does consist of white bursage scrub habitat that would be considered suitable to support Mohave ground squirrel. This habitat is mostly restricted to the areas adjacent the western portion of the site, around the base of the cinder cone, and adjacent the northernmost portion of the project site, respectively. Furthermore, although the southern portion of the site is bordered by existing mining operations, there is undeveloped contiguous suitable habitat between the project site and documented Mohave ground squirrel occurrences to the north and east. Therefore, Mohave ground squirrel could potentially occur within areas of suitable habitat outside of but surrounding the project site.

The 2020 findings are consistent with the 2018 findings.

Golden Eagle – CDFW Fully Protected

The GOEA is a CDFW Fully Protected species. GOEA are found throughout North America, but are more common in western North America (CDFW 2017). Habitat typically consists of rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops (Polite and Pratt 1990). GOEA build large platform nests, typically on cliffs and in large trees in open areas of rugged, open habitats with canyons and escarpments (Polite and Pratt 1990). Threats include loss of foraging areas, loss of nesting habitat, pesticide poisoning, lead poisoning and collision with man-made structures such as wind turbines (CDFW 2017).

Raptors and all migratory bird species, whether listed or not, receive protection under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA prohibits individuals to kill, take, possess or sell any migratory

bird, or bird parts (including nests and eggs) except in accordance with regulations prescribed by the Secretary of the Interior Department (16 U. S. Code 7035). Additional protection is provided to all bald and golden eagles under the Bald and Golden Eagle Protection Act of 1940, as amended. State protection is extended to all birds of prey by the California FGC, Section 2503.57. No take is allowed under these provisions except through the approval of the agencies or their designated representatives.

Findings: Per the CNDDDB, the nearest recently documented GOEA nesting occurrence (2009) is approximately 8.7 miles north of the project site, near the Haiwee Powerhouse, south of the South Haiwee Dam. Additionally, there are several historically documented GOEA nesting occurrences (1974-77) located south of Little Lake, approximately 3.7 to 6.6 miles south of the project site. There are no GOEA occurrences documented in the project area. Although the area surrounding the project site likely provides suitable foraging habitat for GOEA, there are no tall trees in the project area and very little cliffside habitat that could provide potential GOEA nest sites. Furthermore, no GOEA were observed within the project area during the reconnaissance-level survey. The surrounding hillsides, particularly the upper half of the adjacent Red Hill cinder cone, were surveyed using binoculars and no GOEA or nest sites were detected. Given the level of disturbance from the existing mining operations and the general lack of suitable nest sites within the immediate project vicinity, the project site and surrounding area is likely not considered suitable to support nesting GOEA.

Burrowing Owl – SSC

The BUOW is a ground dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The BUOW is heavily dependent upon the presence of mammal burrows, with ground squirrel burrows being a common choice, in its habitat to provide shelter from predators, inclement weather and to provide a nesting place (Coulombe 1971). They are also known to make use of human-created structures, such as cement culverts and pipes, for burrows. BUOW spend a great deal of time standing on dirt mounds at the entrance to a burrow or perched on a fence post or other low to the ground perch from which they hunt for prey. They feed primarily on insects such as grasshoppers, June beetles and moths, but will also take small rodents, birds, and reptiles. They are active during the day and night, but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for BUOW is February 1 through August 31.

BUOW have disappeared from significant portions of their range in the last 15 years and, overall, nearly 60% of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s (Burrowing Owl Consortium 1993). The BUOW is not listed under the State or federal ESA, but is considered both a State and federal SSC. The BUOW is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California FGC (FGC #3513 & #3503.5).

Findings: Per the CNDDDB, the nearest documented BUOW occurrence (2007) is approximately 4.3 miles north of the project site, less than 1 mile east of Coso Junction. There are no BUOW occurrences documented in the project area.

The assessment survey was structured, in part, to detect BUOW. The survey consisted of walking transects spaced to provide 100% visual coverage of the project site, including an approximately 500-foot buffer area around the project site. The result of the survey was that no evidence of BUOW was found in the survey area. No BUOW individuals or sign including pellets, feathers or white wash were observed.

Per the definition provided in the 2012 CDFG Staff Report on Burrowing Owl Mitigation, “Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey.” Therefore, although the project site does contain friable soils, it would not be considered suitable for BUOW because the site is devoid of vegetation and no appropriately sized burrows or burrow surrogates were detected within the project area.

The 2020 findings are consistent with the 2018 findings.

BLM Sensitive Plant Species

The project site is surrounded by BLM managed lands. The BLM manages species that is considers sensitive, regardless of their State or federal listing status. The following two BLM Sensitive Plan Species have been documented in the project vicinity: creamy blazing star (*Mentzelia tridentata*) and Charlotte's phacelia (*Phacelia nashiana*).

Findings: Per the CNDDDB, the nearest documented creamy blazing star occurrence is on the west slopes of Red Hill, approximately 0.3 miles west of the project site, and the nearest documented Charlotte's phacelia occurrence is approximately 3 miles southwest of the project site. Neither species was detected during survey. However, it should be noted that given that the survey was conducted in January, many of the annual species were not in bloom at the time of survey. The bloom period for creamy blazing star is typically March through May and the bloom period for Charlotte's phacelia is March through June, respectively (Calflora 2020). Although neither species was detected during survey, the soils and habitat types adjacent the western and northernmost portions of the project site are suitable for these species to occur in.

The 2020 findings are consistent with the 2018 findings.

3.2.2 Jurisdictional Delineation

The project site is within an undefined Hydrologic Sub-Area (HSA 624.10) which comprises a 170,880-acre drainage area within the larger Indian Wells-Searles Valleys Watershed (HUC 18090205). This watershed encompasses an approximately 2,019-square-mile area, partially within southern Inyo County, northeastern Kern County and northwestern San Bernardino County, respectively. The Indian Wells-Searles Valleys Watershed is bound on the north by the Owens Lake Watershed, on the west by the South Fork Kern Watershed, on the east by the Panamint Valley Watershed and on the south by the Antelope-Fremont Valleys and Coyote-Cuddeback Lakes Watersheds. The Indian Wells-Searles Valleys Watershed is bordered on the west by the southernmost foothills of the Eastern Sierra Nevada and encompasses portions of the Coso Range and Argus Range mountains to the north, as well as China Lake and Searles Lake playas. These two dry lakes, which are the major receiving waters of the hydrogeomorphic features within the Indian Wells-Searles Valleys Watershed, were once fed by the Pleistocene Owens River system. The project site is situated in the northern portion of the Indian Wells-Searles Valleys Watershed, adjacent (to the west of) an unnamed intermittent stream and unnamed playa that were once part of the Pleistocene Owens River system.

Waters of the U.S.

The USACE has authority to permit the discharge of dredged or fill material in waters of the U.S. under Section 404 CWA. WoUS are defined as: “All waters used in interstate or foreign commerce; all interstate

waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters” (Section 404 of the CWA; 33 CFR 328.3 (a). CWA jurisdiction exists over the following:

1. all traditional navigable waters (TNWs);
2. all wetlands adjacent to TNWs;
3. non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) i.e., tributaries that typically flow year-round or have continuous flow at least seasonally; and
4. every water body determined to have a significant nexus with TNWs.

No drainages or other water features were identified in the 2018 or 2020 survey within the project site that would meet the definition of WoUS, and no new drainages developed since the time of the 2018 survey. The project site is near an unnamed intermittent stream and unnamed playa, which are both adjacent the east side of the project area. These two intermittently-flooded features are both part of what was once the Pleistocene Owens River system and the unnamed playa was inundated at the time the survey was conducted (see attached photos). The unnamed intermittent stream originates approximately 12 miles north (upstream) of the project area, at the south end of South Haiwee Reservoir, and terminates approximately 18 miles southeast of the project area, in an area approximately 9 miles northwest of China Lake.

The adjacent unnamed intermittent stream and unnamed, intermittently-flooded playa are completely outside (to the east) of the proposed project site. Furthermore, these features would be considered isolated waters as they do not have a significant nexus to a TNW and would not be considered jurisdictional WoUS. Therefore, no water features were identified within the project site that would meet the definition of WoUS.

USACE Wetlands

Areas meeting all three parameters would be designated as USACE wetlands. None of the three required parameters, hydrophytic vegetation, hydric soils and/or wetland hydrology, are present within the project site. Therefore, no wetlands were identified in the study area during the 2018 investigation or 2020 investigation based on the absence of hydrophytic vegetation, hydric soil indicators and/or wetland hydrology.

State Lake/Streambed

The project site is situated near the base of the Red Hill cinder cone, and habitat within the project area is comprised of white bursage scrub habitat. There are no drainages or other water features that have a definable bed and bank or associated riparian vegetation that would be subject to the FGC under the jurisdiction of the CDFW, within the project site. The adjacent unnamed intermittent stream and unnamed, intermittently-flooded playa would likely be considered CDFW jurisdictional features, however they are entirely outside of the proposed project site. The 2020 findings are consistent with the 2018 findings. Any new roadways planned would need to be evaluated to determine if crossing the unnamed intermittent stream is required, in which a permit would also be required.

4 Conclusions and Recommendations

4.1 Sensitive Biological Resources

No State- and/or federally-listed threatened or endangered species were observed on site during the field survey and due to the lack of suitable habitat on site, none are expected to occur within the proposed project footprint. The entire project site is unvegetated, consisting of cinder sand and gravel. There is white bursage scrub habitat adjacent the western portion of the site, around the base of the cinder cone, as well as adjacent the northernmost portion of the site, that could potentially be suitable to support several sensitive species. However, the project will not impact any sensitive species or habitats that may potentially support sensitive species, including the State- and federally-listed as threatened desert tortoise or the State-listed as threatened Mohave ground squirrel.

The proposed project footprint originally included approximately 29 acres of white bursage scrub habitat within the project boundary, primarily along the northern and western portions of the current proposed project footprint. However, to avoid all potential impacts to sensitive species that could potentially occur within this habitat, the project proponent modified the project boundary to avoid disturbing any of the adjacent white bursage scrub habitat. The current proposed project footprint is completely within an unvegetated area that consists entirely of cinder sand and gravel. Therefore, the project will not impact any of the adjacent white bursage scrub habitat or sensitive species identified as potentially occurring within this habitat.

According to protocol and standard practices, the results of the habitat assessment surveys will remain valid for the period of one year, or until January 29, 2021, after which time, if the site has not been disturbed in the interim, another survey may be required to determine the persisting absence of desert tortoise, BUOW and other sensitive flora and fauna on-site. Regardless of survey results and conclusions given herein, desert tortoise, BUOW and Mohave ground squirrel are protected by applicable State and/or federal laws, including but not exclusive to the CESA and Federal ESA. As such, if a desert tortoise, BUOW or Mohave ground squirrel are found on-site during work activities, all activities likely to affect the animal(s) should cease immediately and regulatory agencies should be contacted to determine appropriate management actions. Importantly, nothing given in this report, including any recommended avoidance, minimization and mitigation measures, is intended to authorize the incidental take of desert tortoise or Mohave ground squirrel or any other listed species during project activities. Such authorization must come from the appropriate regulatory agencies, including CDFW (i.e., authorization under section 2081 of the FGC) and USFWS. Additionally, it should be noted that desert tortoise may be handled only by a qualified biologist who has been given authorization by the appropriate agencies (i.e. USFWS and CDFW).

Desert Tortoise

No evidence of desert tortoise was found in the project area during survey and the nearest documented desert tortoise occurrence is approximately 6.4 miles northwest of the project site. No desert tortoise individuals or sign including burrows or scat were observed on site. Furthermore, the project site does not contain any habitat that would be considered suitable to support this species. Therefore, desert tortoise are considered absent from the project site and immediate surrounding area. No further focused surveys for this species are warranted or recommended. However, because there is potentially suitable white bursage scrub habitat for desert tortoise within some of the adjacent areas surrounding portions of the project site, it is recommended that a 100-foot buffer area be established between the proposed project footprint and any adjacent suitable habitat, to avoid any potential project-related impacts to this species. The adjacent habitat, including the 100-foot buffer area, should be clearly marked prior to any ground disturbing activities and avoided.

Mohave Ground Squirrel

Although there is no suitable Mohave ground squirrel habitat within the project site, there is potentially suitable habitat for Mohave ground squirrel adjacent some portions of the project site and the nearest documented Mohave ground squirrel is approximately 2 miles north of the project site. No focused protocol-level Mohave ground squirrel trapping surveys were conducted, so it is currently not known if Mohave ground squirrel occur within the suitable white bursage scrub habitat surrounding the project site. Therefore, as for desert tortoise (above), it is recommended that a 100-foot buffer area be established between the proposed project footprint and any adjacent suitable habitat, to avoid any potential project-related impacts to Mohave ground squirrel or any other sensitive species that may occur within the adjacent white bursage scrub habitat. As stated above, the adjacent habitat, including the 100-foot buffer area, should be clearly marked prior to any ground disturbing activities and avoided.

Burrowing Owl

A BUOW habitat suitability assessment was conducted, which included 100% visual coverage of the project site and approximately 500-foot buffer area around the project site. The result of the BUOW habitat assessment is that the project site and surrounding area are not considered suitable to support BUOW, due to the absence of vegetation on site, as well as the absence of appropriately sized burrows or burrow surrogates within the survey area. No BUOW individuals or sign including pellets, feathers or white wash were observed within the project site or surrounding area and this species is currently considered absent from the project area. Due to the absence of suitable habitat and BUOW sign, the project is not likely to impact his species and protocol-level BUOW surveys are not warranted or recommended at this time.

Sensitive Plant Species

There are no State- or federally-listed plant species documented in the project vicinity. However, several sensitive plant species, including two BLM Sensitive Plants (creamy blazing star and Charlotte's phacelia) have been documented in the project vicinity. As previously discussed, the project site is completely unvegetated, consisting entirely of cinder sand and gravel, and all adjacent white bursage scrub habitat will be completely avoided. Therefore, the project will not impact any sensitive plant species that may occur within adjacent habitat communities.

Nesting Birds

There is white bursage scrub habitat adjacent the project site that is suitable to support nesting birds. However, the project site is entirely within an area devoid of vegetation and will completely avoid disturbing any adjacent habitat. Therefore, the project is not likely to impact nesting birds.

4.2 Jurisdictional Waters

No jurisdictional features subject to the CWA or FGC under the jurisdictions of the USACE, RWQCB, or CDFW exist within the project site. The project site is located entirely outside of any jurisdictional areas and no permanent or temporary impacts to jurisdictional features will result from the project. Therefore, no permits or authorizations from the USACE, RWQCB, or CDFW will be required unless the site plan will create new access roads and cross drainages.

5 Literature Cited

- American Ornithologists' Union. 1989. Thirty-seventh supplement to the American Ornithologists' Union Check-list of North American birds. *Auk* 106: 532-538.
- Calflora: Information on California plants for education, research and conservation. [web application]. 2017. Berkeley, California: The Calflora Database [a non-profit organization]. Available: <http://www.calflora.org/>. (Accessed: January 26, 2018)
- California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines.
- California Department of Fish and Game. 1995. Staff report on burrowing owl mitigation. Memo from C.F. Raysbrook, Interim Director to Biologist, Environmental Services Division, Department of Fish and Game. Sacramento, CA.
- California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. March 7, 2012.
- California Department of Fish and Wildlife (CDFW). 2017. Golden Eagles in California. Retrieved from: <https://www.wildlife.ca.gov/Conservation/Birds/Golden-Eagles>.
- California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Plants of California. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California. Available at: <http://www.cnps.org/inventory> (Accessed: January 26, 2018)
- California Natural Diversity Data Base (CNDDDB). 2018. Annotated record search for special animals, plants and natural communities. Natural Heritage Division, Sacramento, California. (January 26, 2018)
- Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.
- Hall, E.R. 1981. The Mammals of North America. John Wiley and Sons, New York. 2 Vol. 1181
- Hickman, J. C., ed. 1993. The Jepson Manual: Higher Plants of California. Univ. of Calif. Pr., Berkeley, CA.
- Leitner, P. 2008. Current status of the Mohave ground squirrel. *Transactions of the Western Section of the Wildlife Society* 44: 11–29.
- Leitner, P. 2015. Current status of the Mohave ground squirrel (*Xerospermophilus mohavensis*): A five-year update (2008–2012). Endangered Species Recovery Program, California State University, Stanislaus, One University Circle, Turlock, California 95382. Published in *Western Wildlife* 2: 9–22.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 wetland ratings*. *Phytoneuron* 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Munz, P.A. 1974. A Flora of Southern California. University of California Press, Berkeley, California.
- Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey. Map Unit Descriptions. San Bernardino County Area, California. Available at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>. (Accessed: January 26, 2018).
- Polite, C and J. Pratt. 1990. Life History Account for Golden Eagle. California Department of Fish and Game, California Interagency Wildlife Task Group. Available at: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range> (Accessed: January 26, 2018)

- Sawyer, John O., Keeler-Wolf, Todd, and Evens, Julie M. 2009. A manual of California vegetation. Second Edition. California Native Plant Society, Sacramento, California, USA. 1,300 pages.
- Skinner, M.W. and B. M. Pavlik, eds. 1994. *Inventory of Rare and Endangered Vascular Plants of California*, 5th edition. California Native Plant Society, Sacramento, California.
- U.S. Army Corps of Engineers (USACE). 2001. USACE Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30, 2001 (Minimum Standards).
- U.S. Army Corps of Engineers (USACE). 2007. Jurisdictional Determination Form Instructional Guidebook (JD Form Guidebook). May 30.
- U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers (USACE). 2014. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (A Delineation Manual). August 2008.
- U.S. Bureau of Land Management (BLM). 1980. The California Desert Conservation Area Plan. U.S. Bureau of Land Management, Riverside, California. 173 pp.
- U.S. Bureau of Land Management (BLM) and California Department of Fish and Game (CDFG). 1988. A Sikes Act Management Plan for the Desert Tortoise Research Natural Area and Area of Critical Environmental Concern. U.S. Bureau of Land Management, Ridgecrest, California. 43 pp. + unpaginated appendices.
- U.S. Bureau of Land Management (BLM). 1989. Map produced by BLM for the California Desert Conservation Area, dated January 1989, showing desert tortoise Category I, 2, and 3 Habitats in California. Riverside, CA.
- U.S. Bureau of Land Management (BLM). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, a Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. Moreno Valley, CA.
- U.S. Fish and Wildlife Service (USFWS). National Wetlands Inventory. Website: <http://wetlands.fws.gov>. (Accessed: January 26, 2018)
- U.S. Fish and Wildlife Service. 1994. The desert tortoise (Mojave population) recovery plan. U.S. Fish and Wildlife Service, Region 1, Lead Region, Portland, Oregon. 73 pp. + appendices.
- U.S. Fish and Wildlife Service. 2008. Field survey protocol for any nonfederal action that may occur within the range of the desert tortoise. Ventura, CA.
- U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.
- Western Regional Climate Center. Period of Record Monthly Climate Summary for Haiwee, California (043710). Available at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3710>. (Accessed: January 26, 2018).

**ADDITIONAL
TABLES**

Table 2. CNDDDB Species and Habitats Documented Within the *Little Lake, Coso Junction, Cactus Peak and Volcano Peak* USGS 7.5-minute Quadrangles

Scientific Name	Common Name	Listing Status Federal/ State	Other Lists	Habitat	Occurrence Potential
<i>Aliciella ripleyi</i>	Ripley's aliciella	None/ None	G3; S2; CNPS: 2B.3	Mojavean desert scrub. On limestone; rocky slopes, rock/cliff bases, and rock crevices. 300-1950 m.	The soil types this species is associated with (limestone) is not present within the project area. Occurrence potential is low .
<i>Antrozous pallidus</i>	pallid bat	None/ None	G5; S3; CDFW: SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Although there is little to no roosting habitat within the project site, there are some rocky outcrops adjacent the site that could potentially provide roosting habitat for this species. However, the nearest documented occurrence is approx. 8.8 miles NE of the project site and there is a significant level of human disturbance in the area, due to the existing quarry. Occurrence potential is low .
<i>Aquila chrysaetos</i>	golden eagle	None/ None	G5; S3; CDFW: FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Given the level of disturbance from the existing mining operations and the general lack of suitable nest sites within the immediate project vicinity, the project site and surrounding area is likely not considered suitable to support nesting GOEA. Occurrence potential is low .
<i>Astragalus atratus</i> var. <i>mensanus</i>	Darwin Mesa milk-vetch	None/ None	G4G5T2; S2; CNPS: 1B.1	Great Basin scrub, Joshua tree woodland, pinyon and juniper woodland. Dry desert slopes and mesas, often sheltering under and entangled in shrubs, in volcanic clay and gravel. 1705-2320 m.	The project area is outside the elevation range for this species. Occurrence potential is low .
<i>Athene cucularia</i>	burrowing owl	None/ None	G4; S3; CDFW: SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	No appropriately sized burrows or burrow surrogates were detected within the project area, which is devoid of vegetation. Occurrence potential is low .
<i>Bombus crotchii</i>	Crotch bumble bee	None/ None	G3G4; S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Although there are some food plants for this species within the project area, the nearest documented occurrence is approx. 13.7 miles N of the project site. Occurrence potential is low .

Scientific Name	Common Name	Listing Status Federal/ State	Other Lists	Habitat	Occurrence Potential
<i>Canbya candida</i>	white pygmy-poppy	None/ None	G3G4; S3S4; CNPS: 4.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Gravelly, sandy, granitic places. 600-1460 m.	There is some habitat this species is associated with present adjacent the project site and the nearest documented occurrence for this species is approx. 0.8 miles S of the project site. However, the project site is entirely devoid of vegetation and the project will not disturb any adjacent habitat. Occurrence potential is low .
<i>Clarkia xantiana</i> ssp. <i>parviflora</i>	Kern Canyon clarkia	None/ None	G4T3T4; S3S4; CNPS: 4.2	Chaparral, cismontane woodland, Great Basin scrub, valley and foothill grassland. Often seen on sandy, sometimes rocky, slopes. Sometimes on roadsides. 700-1750 m.	There is some habitat this species is associated with present adjacent the project site, but the nearest documented occurrence for this species is approx. 7.4 miles NW of the project site. Occurrence potential is low .
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None/ None	G3G4; S2; CDFW: SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	No suitable roosting habitat for this species exists in the project area and there is a significant level of human disturbance in the area, due to the existing quarry. Occurrence potential is low .
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	None/ None	G5T4; S2; CNPS: 2B.3	Joshua tree woodland, pinyon and juniper woodland. 290-2410 m.	The habitats this species is associated with are not present within the project area. Occurrence potential is low .
<i>Eriastrum sparsiflorum</i>	Great basin eriastrum	None/None	G5; S4; CNPS: 4.3	Great Basin scrub, Mojave desert scrub, cismontane woodland, pinyon and juniper woodland, Joshua tree woodland, chaparral. Granitic soils; mostly in openings. 1075-1710 m.	Granitic soils are not found within the project area. Occurrence potential is low .
<i>Gopherus agassizii</i>	desert tortoise	Threatened/ Threatened	G3; S2S3	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	No desert tortoise individuals or sign including burrows or scat were observed during survey and there is no suitable habitat for this species within the proposed project footprint. Furthermore, the nearest documented occurrence is approx. 6.4 miles NW of the project site. Occurrence potential is low .

Scientific Name	Common Name	Listing Status Federal/ State	Other Lists	Habitat	Occurrence Potential
<i>Gymnogyps californianus</i>	California condor	Endangered/ Endangered	G1; S1; CDFW: FP CDF: S	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	No populations of this species occur near the project site, and suitable habitat is not on site. Occurrence potential is low .
<i>Lasionycteris noctivagans</i>	silver-haired bat	None/ None	G5; S3S4	Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Although there are some rocky outcrops adjacent the site that could potentially provide roosting habitat for this species, there are no suitable roosting trees within the project area. Additionally, the nearest documented occurrence is approx. 6 miles N of the project site. Occurrence potential is low .
<i>Mentzelia tridentata</i>	creamy blazing star	None/ None	G3; S3; CNPS: 1B.3	Mojavean desert scrub. 545-1100 m.	There is some habitat this species is associated with present adjacent the project site and the nearest documented occurrence for this species is approx. 0.3 miles W of the project site, on the W side of Red Hill. However, the project site is entirely devoid of vegetation and the project will not disturb any adjacent habitat. Occurrence potential is low .
<i>Microtus californicus vallicola</i>	Owens Valley vole	None/ None	G5T3; S3; CDFW: SSC	Found in wetlands and lush grassy ground in the Owens Valley. Needs friable soil for burrowing. Eats grasses, sedges and herbs. Clips grass to make runways leading from burrows.	No suitable habitat for this species exists in the project area. Occurrence potential is low .
<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	Amargosa beardtongue	None/ None	G4T3; S2; CNPS: 1B.3	Mojavean desert scrub. Sandy or gravelly washes and drainages. 940-1890 m.	There is some habitat this species is associated with present adjacent the project site, but the nearest documented occurrence for this species is approx. 9.2 miles NE of the project site. Occurrence potential is low .

Scientific Name	Common Name	Listing Status Federal/ State	Other Lists	Habitat	Occurrence Potential
<i>Phacelia nashiana</i>	Charlotte's phacelia	None/ None	G3; S3; CNPS: 1B.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Granitic soils; sandy or rocky areas on steep slopes or flats. 335-2180 m.	There is some habitat this species is associated with present adjacent the project site and the nearest documented occurrence for this species is approx. 3 miles SW of the project site. However, the project site is entirely devoid of vegetation and the project will not disturb any adjacent habitat. Occurrence potential is low .
<i>Pyrgulopsis wongi</i>	Wong's springsnail	None/ None	G2; S2	Owens Valley. Along east side from Pine Creek to Little Lake, and along west side from French Spring to Marble Creek. Seeps and small-moderate size spring-fed streams. Common in watercress and/or on small bits of travertine and stone.	The habitats this species is associated with are not present within the project area. Occurrence potential is low .
<i>Rhinichthys osculus</i> ssp. 2	Owens speckled dace	None/ None	G5T1T2Q; S1S2; CDFW: SSC	Small streams and springs in Owens Valley. Occupies a variety of habitats. Rarely found in water > 29° C.	No suitable habitat for this species exists in the project area. Occurrence potential is low .
<i>Sidalcea covillei</i>	Owens Valley checkerbloom	None/ Endangered	G2; S2; CNPS: 1B.1	Meadows and seeps, chenopod scrub. Moist alkaline meadows and freshwater seeps, fine sandy loam soil, one occurrence in stony calcareous soil. 1090-1420 m.	The habitats this species is associated with are not present within the project area. Occurrence potential is low .
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None/ None	G4; S3; CDFW: SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	There is some potentially suitable habitat for this species adjacent the northern and western portions of the project site. Occurrence potential is moderate in the area surrounding the project site.
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	None/ Threatened	G2G3; S2S3	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	There is some potentially suitable habitat for this species adjacent the northern and western portions of the project site and the nearest documented occurrence for this species is approx. 2 miles N of the site. However, there is no suitable habitat for this species within the proposed project footprint and the project will completely avoid disturbing any adjacent habitat. Occurrence potential is low .

Coding and Terms

E = Endangered T = Threatened C = Candidate FP = Fully Protected SSC = Species of Special Concern R = Rare

State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, possess or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess or destroy the nest or eggs of any such bird."

State Fully Protected: The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Global Rankings (Species or Natural Community Level):

G1 = Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 = Imperiled – At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3 = Vulnerable – At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

G4 = Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 = Secure – Common; widespread and abundant.

Subspecies Level: Taxa which are subspecies or varieties receive a taxon rank (T-rank) attached to their G-rank. Where the G-rank reflects the condition of the entire species, the T-rank reflects the global situation of just the subspecies. For example: the Point Reyes mountain beaver, *Aplodontia rufa* ssp. *phaea* is ranked G5T2. The G-rank refers to the whole species range i.e., *Aplodontia rufa*. The T-rank refers only to the global condition of ssp. *phaea*.

State Ranking:

S1 = Critically Imperiled – Critically imperiled in the State because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.

S2 = Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the State.

S3 = Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the State.

S4 = Apparently Secure – Uncommon but not rare in the State; some cause for long-term concern due to declines or other factors.

S5 = Secure – Common, widespread, and abundant in the State.

California Rare Plant Rankings (CNPS List):

1A = Plants presumed extirpated in California and either rare or extinct elsewhere.

1B = Plants rare, threatened, or endangered in California and elsewhere.

2A = Plants presumed extirpated in California, but common elsewhere.

2B = Plants rare, threatened, or endangered in California, but more common elsewhere.

3 = Plants about which more information is needed; a review list.

4 = Plants of limited distribution; a watch list.

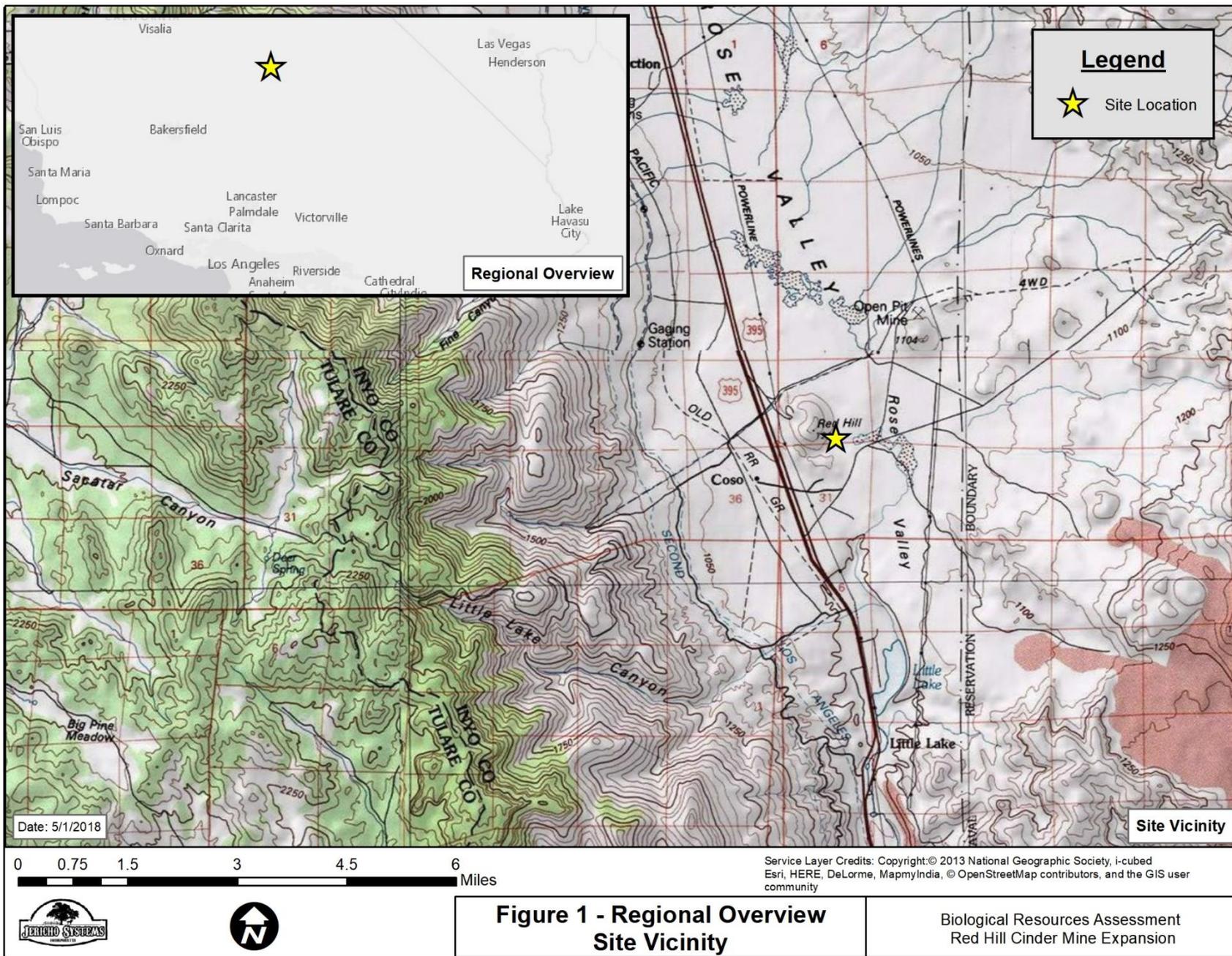
Threat Ranks:

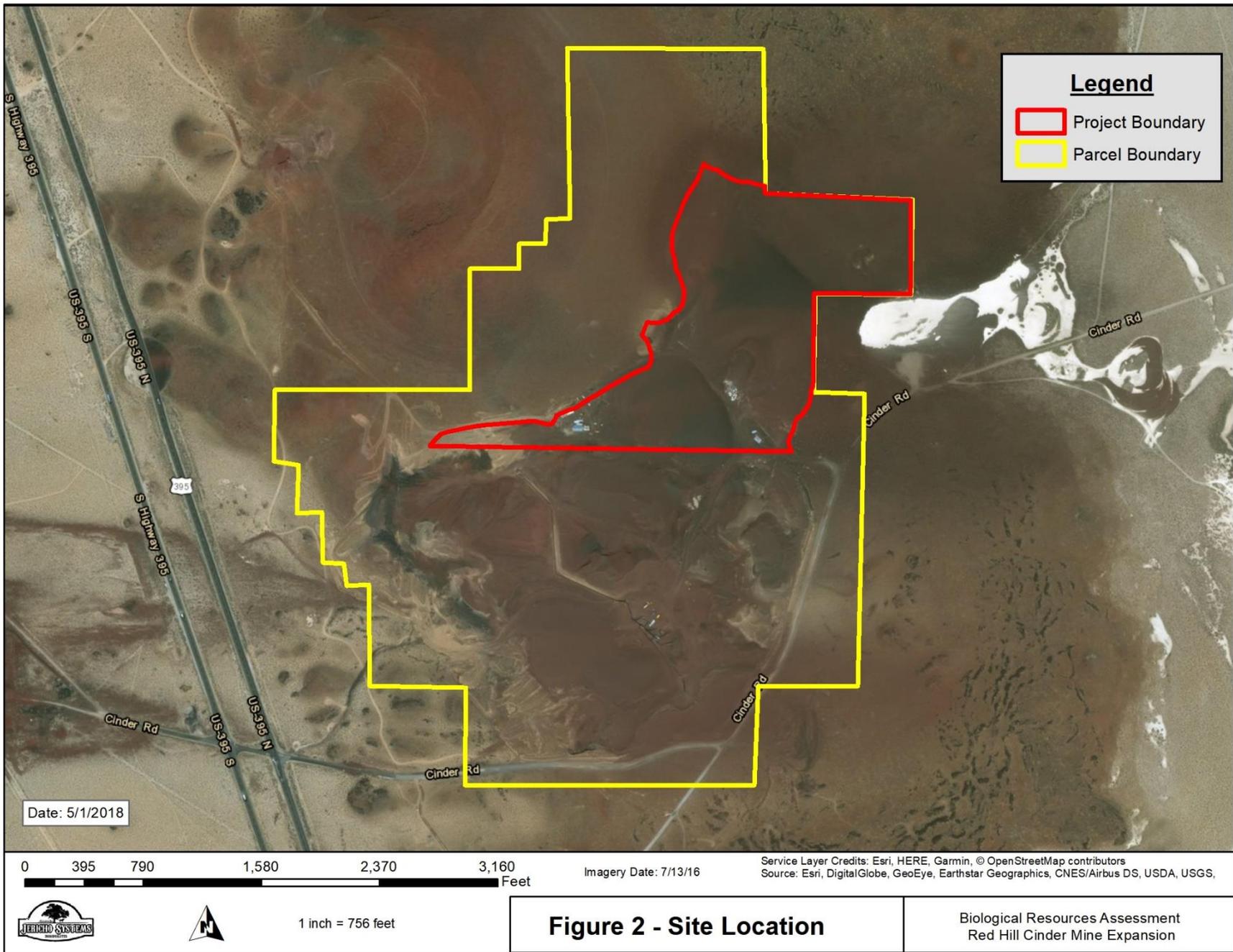
.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

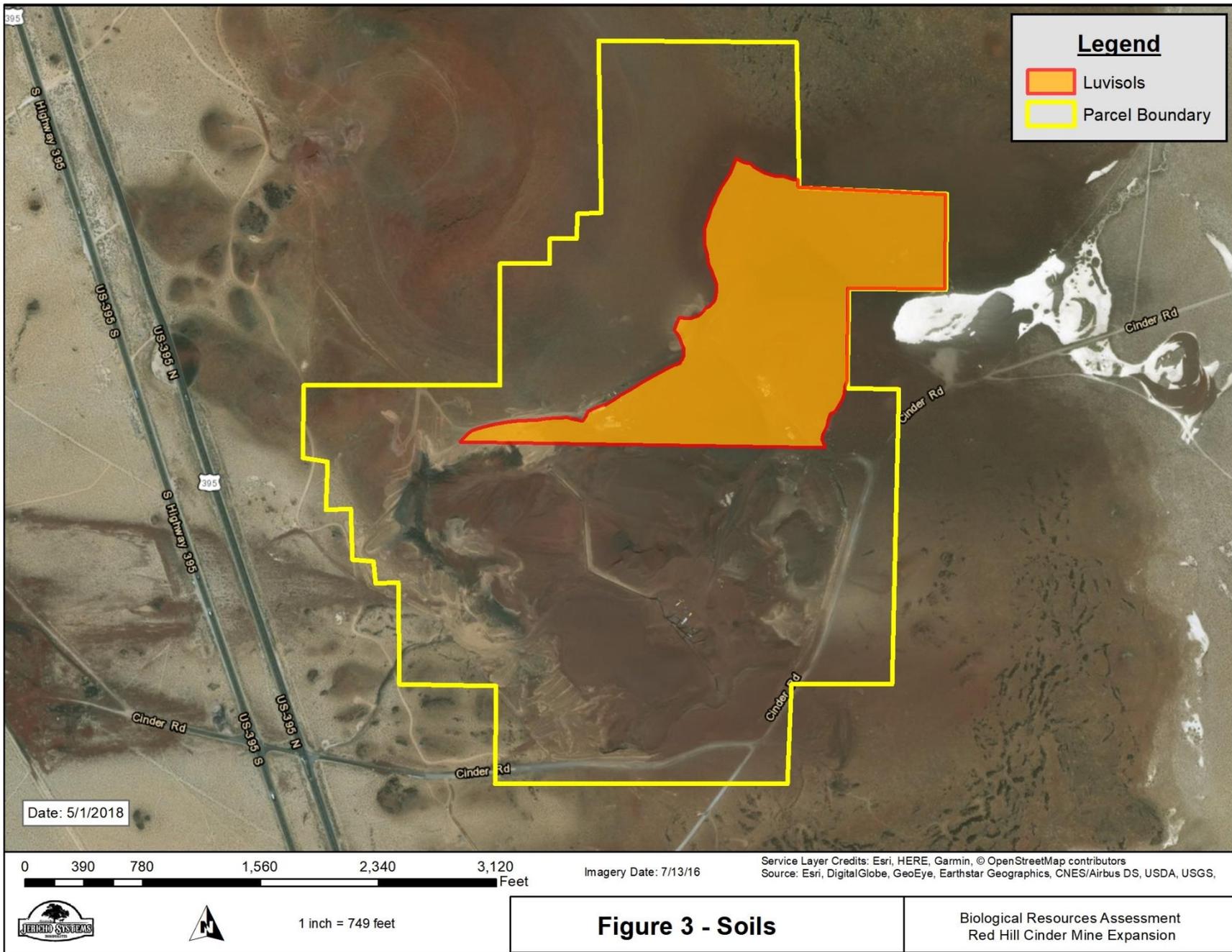
.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

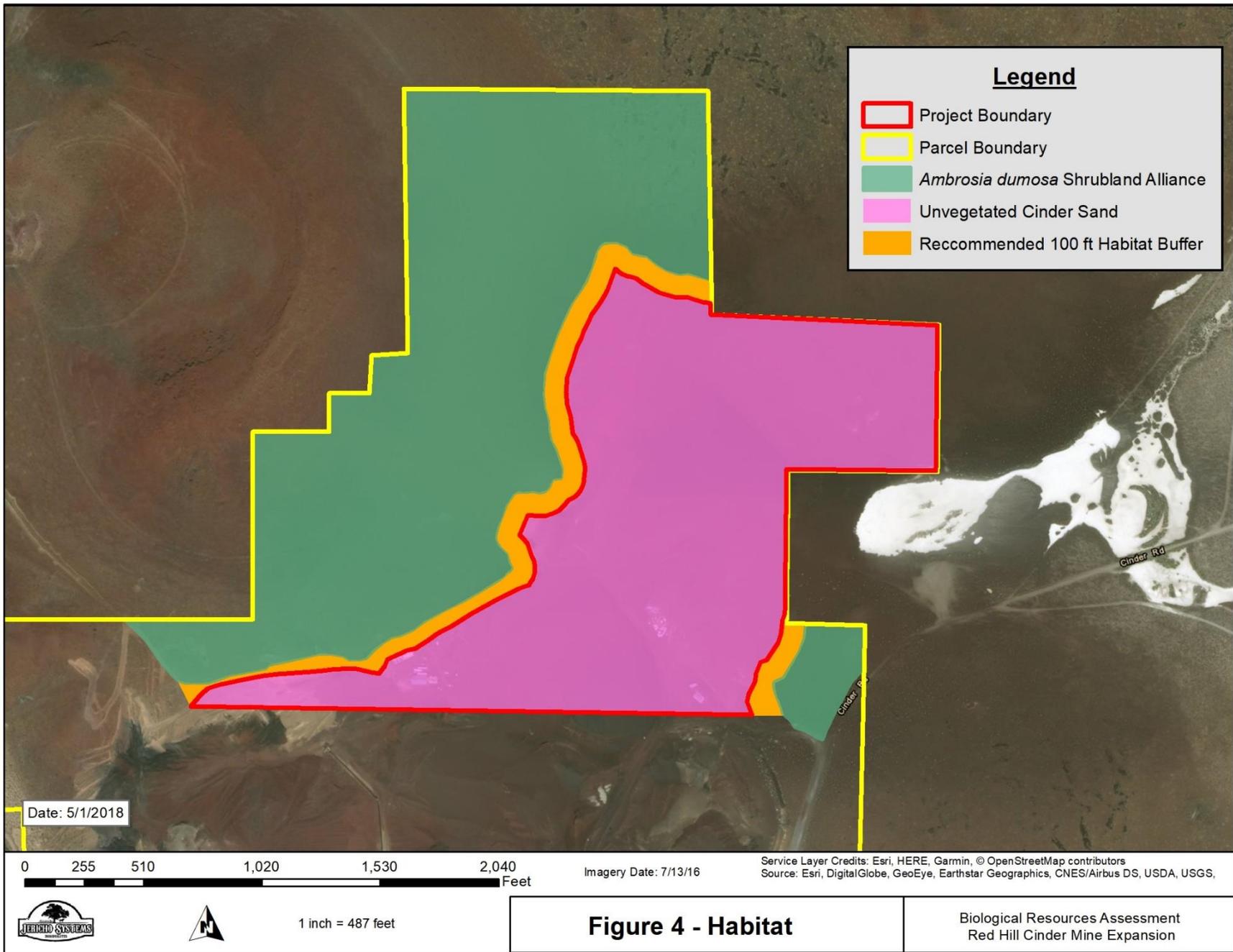
.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

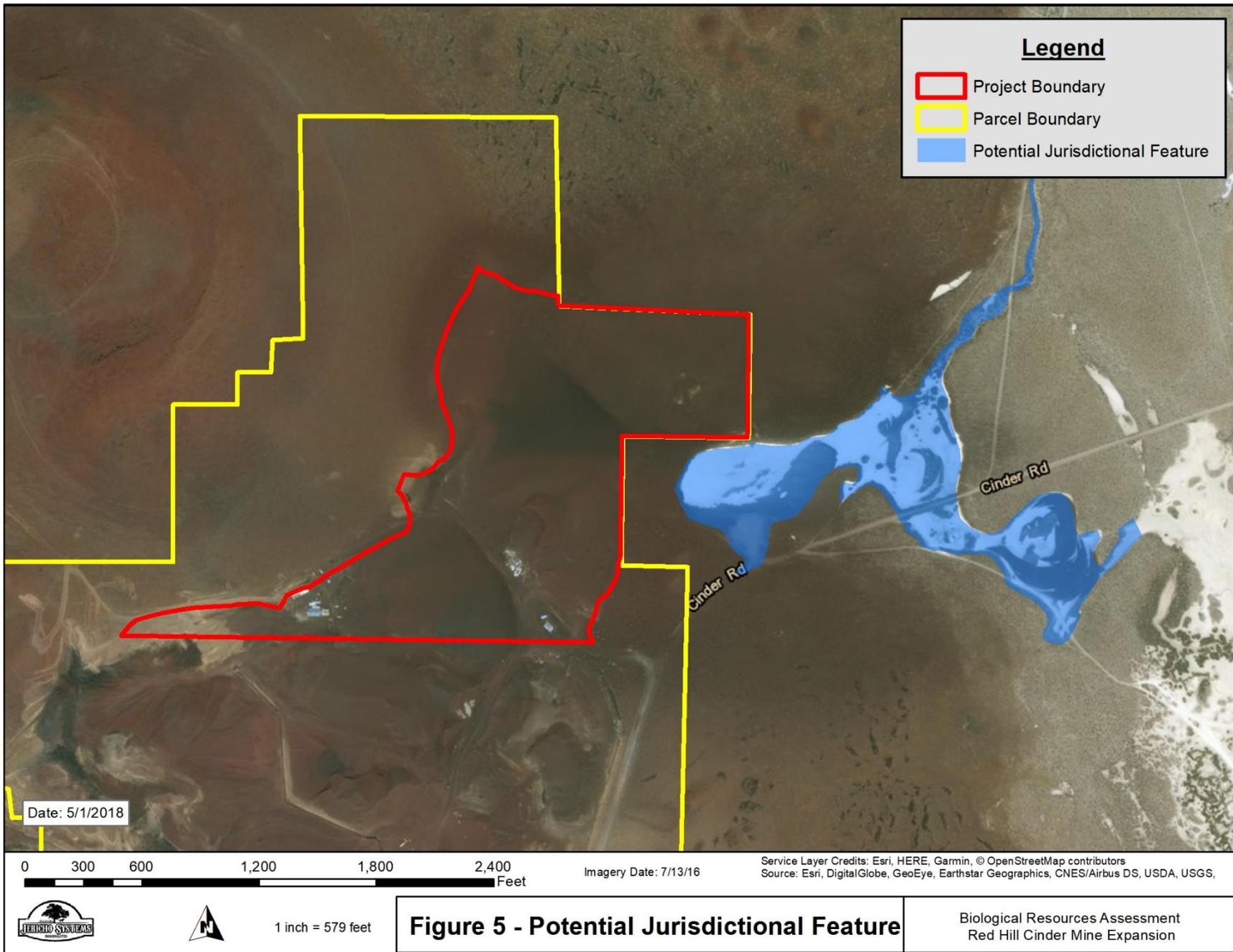
FIGURES











**SITE
PHOTOGRAPHS**



Photo 1. Looking west at the south westernmost portion of the project site from the southern slope of Red Hill; adjacent the existing mining operation.

2018 Top
2020 Bottom



Photo 2. Looking south at the southern portion of the project site from the eastern slope of Red Hill. Existing mining operation in the far ground, south of the project site.

2018 Top
2020 Bottom



Photo 3. Looking east at the middle of the project site from the eastern slope of Red Hill. The inundated playa visible in the far ground is outside (east) of the eastern boundary of the project site.

2018 Top
2020 Bottom



Photo 4. Looking east (2018) and northeast (2020) at the northernmost portion of the project site and adjacent habitat from the eastern slope of Red Hill.

2018 Top
2020 Bottom



Photo 5. Looking west at Red Hill and the westernmost portion of the project site, which is situated along the lower slope of Red Hill.



2018 Top
2020 Bottom



Photo 6.
Unvegetated
middle portion of
the project site.

2018 Top
2020 Bottom

Appendix A

Regulatory Framework

Federal Endangered Species Act (ESA)

The U.S. Fish and Wildlife Service (USFWS) administers the federal ESA of 1973. The ESA provides a legal mechanism for listing species as either threatened or endangered, and a process of protection for those species listed. Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. "Take" can include adverse modification of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act. Take authorization can be obtained under Section 7 or Section 10 of the act.

California Endangered Species Act (CESA)

The CDFW, formerly Fish and Game, administers the State CESA. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species soon, in the absence of special protection or management. And a rare species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. Rare species applies to California native plants. Further, all raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code (FGC). Species that are California fully protected include those protected by special legislation for various reasons, such as the California condor. Species of Special Concern (SSC) is an informal designation used by CDFW for some declining wildlife species that are not proposed for listing as threatened or endangered. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFW.

Migratory Bird Treaty Act (MBTA)

Nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C 703-711). The MBTA provides protection for nesting birds that are both residents and migrants whether or not they are considered sensitive by resource agencies. The MBTA prohibits take of nearly all native birds. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

Clean Water Act (CWA)

The CWA is the principal federal law that governs pollution in the nation's lakes, rivers, and coastal waters. Originally enacted in 1972 as a series of amendments to the Federal Water Pollution Control Act of 1948, the Act was last amended in 1987. The overriding purpose of the CWA is to "restore and maintain the chemical, physical and biological integrity of the nation's waters." The statute employs a variety of regulatory and non-regulatory tools to eliminate the discharge of pollutants into the nation's waters and achieve water quality that is both "swimmable and fishable".

Under Section 404 of the CWA, the Corps has primary federal responsibility for administering regulations

that concern the discharge of dredged or fill material into WoUS (including wetlands). WoUS are defined as: “All waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters” (Section 404 of the CWA; 33 CFR 328).

The limit of the Corps jurisdiction for non-tidal waters (including non-tidal perennial and intermittent watercourses and tributaries to such watercourses) in the absence of adjacent wetlands is defined by the ordinary high water mark (OHWM). The OHWM is defined as: “The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (Section 404 of the CWA; 33 CFR 328). Wetlands are defined as: “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (Section 404 of the CWA; 33 CFR 328).

Porter-Cologne Water Quality Control Act (Porter-Cologne)

The Porter-Cologne Water Quality Control Act (Porter-Cologne) is the principal State law that governs water protection efforts in California. Porter-Cologne establishes the State Water Resources Control Board (SWRCB) and each of the nine Regional Water Quality Control Boards (RWQCBs) as the principal state agencies for coordinating and controlling water quality in California. The RWQCB’s regulatory jurisdiction is pursuant to Section 401 of the Federal CWA. The RWQCB typically regulates discharges of dredged or fill material into WoUS. However, they also have regulatory authority over waste discharges into Waters of the State, which may be isolated, under Porter-Cologne. In the absence of a nexus with the Corps, the RWQCB requires the submittal of a Waste Discharge Requirement (WDR) application, which must include a copy of the project Storm Water Pollution Prevention Plan (SWPPP) and a copy of the project Water Quality Management Plan (WQMP), otherwise called a Standard Urban Stormwater Management Plan (SUSMP). The RWQCB’s role is to ensure that disturbances in the stream channel do not cause water quality degradation.

California Fish and Game Code (FGC)

Sections 1600 to 1616 of the California FGC require any person, state, or local government agency or public utility to notify the CDFW before beginning any activity that will substantially modify a river, stream, or lake. If it is determined that the activity could substantially adversely impact an existing fish and wildlife resource, then a Lake or Streambed Alteration Agreement is required.

Like the Corps and RWQCB, the CDFW also regulates discharges of dredged or fill material. The regulatory jurisdiction of CDFW is much broader however, than Corps or RWQCB jurisdictions. CDFW regulates **all** activities that alter streams and lakes and their associated habitats. The CDFW, through provisions of the FGC Sections 1601-1603 is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water. The CDFW typically extends the limits of their jurisdiction laterally beyond the channel banks for streams that support riparian vegetation. In these situations, the outer edge of the riparian vegetation is generally used as the lateral extent of the stream and CDFW jurisdiction. CDFW regulates wetland areas only to the extent that those wetlands are a part of a river, stream, or lake as defined by CDFW.