



April 5, 2021

Director Mr. John L. Varela
Director Mr. Richard P. Santos
Director Mr. Gary Kremen
Valley Water
Water Storage Exploratory Committee

Dear Directors Varela, Santos and Kremen:

Sargent Ranch offers significant value to Valley Water as land that holds an abundance of conservation/mitigation credits that may be either dedicated to the Santa Clara Valley Habitat Agency in lieu of the Development Fees charged by the agency for Valley Water projects covered by the Habitat Plan; or alternatively, as a source of credits that may be used to mitigate impacts from other Valley Water projects not covered by the Habitat Plan. The value of these credits will significantly exceed the purchase price of Ranch as valued in the current ownership's hands.

Enclosed as Exhibit 1 for your review is the Biotic Evaluation Sargent Ranch Quarry, Santa Clara California, prepared by Live Oak Associates, Inc., on March 15, 2015. I direct your attention to section 3.2.9 of The Santa Clara Valley Habitat Conservation Plan (on page 61 of this document) and immediately following sections 3.2.9.1 and 3.2.9.2, SCVHP Development Fees and Land in Lieu of Fees. Those sections discuss the process and determination of value for land contributed to the Habitat Agency in lieu of development fees.

The actual credit to be receive from the contribution of Sargent Ranch lands to the Habitat Agency will be negotiated using the principles detailed in Chapters 8 and 9 of the Santa Clara Valley Habitat Plan. As a starting point to assist in determining that value, also enclosed is The Sargent Ranch Mitigation Resources, Santa Clara County, California prepared by Live Oak Associates, Inc., on September 18, 2014 at Exhibit 2. Table 2 (included on page 136 of this document) provides the development fees and specialty fees that would be required to be paid to the Santa Clara Valley Habitat Agency under the Santa Clara Habitat Plan were the Ranch proposed for development. The HCP fees computed as of 2014 were \$158,968,967.

Exhibit 3, stating at page 188 of this document, shows the same Table 2 with the fee per acre amounts updated to the fees as listed on the Habitat Agency's website for years 2020/2021. Updating the fees to the current rates increases the amount to \$195,158,785. Removing the land to be used for the proposed Sargent quarry and the lands currently used in the oil and gas production results in a fee value of \$157,770,070. The Habitat Plan excludes costs associated with land management or monitoring, plan preparation and endowment from the fees that may be avoided. Live Oak approximated those fees at 35% to the total, resulting in an approximate credit of \$102,550,546.

Sargent Ranch is 5,274.21 acres located in southern Santa Clara County near the intersection of Highways 101 and 129. The proposed sand quarry is in a parcel of 1,396 acres and 320 acres are subject to the oil and gas lease. Deducting these two areas leaves 3,558.27 acres that would be included in the transaction. We expect the current valuation would be between \$8,500 and \$10,000 per acre based upon previous appraisals and recent comparable sales. This would result in a total approximated purchase price of \$30,000,000 to \$35,000,000.

I look forward to discussing this with you further.

Sincerely,



Howard Justus

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Exhibit 1



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

**BIOTIC EVALUATION
SARGENT RANCH QUARRY
SANTA CLARA COUNTY, CALIFORNIA**

By:

LIVE OAK ASSOCIATES, INC.

Rick Hopkins, Ph.D., Principal, Senior Ecologist
Pamela Peterson, Sr. Project Manager, Plant and Wetland Ecologist

For:

Verne Freeman
Freeman Associates
994 San Antonio Road
Palo Alto, CA 94303

March 12, 2015

Project No. 662-02

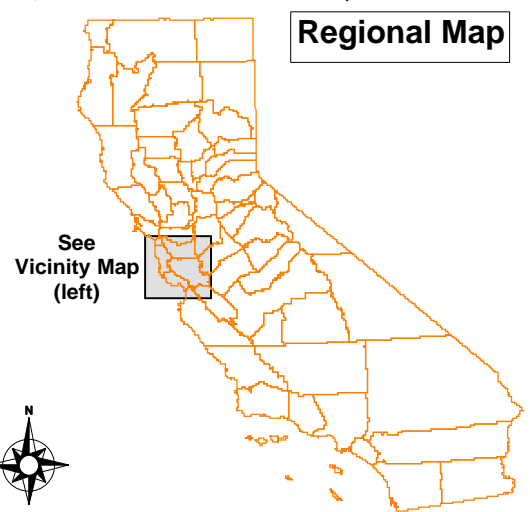
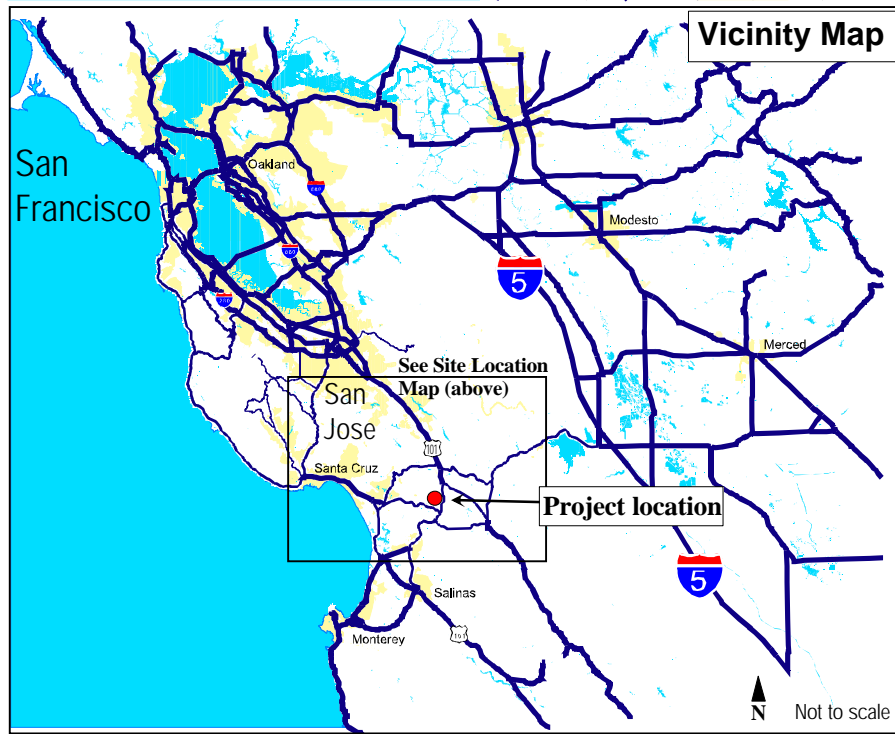
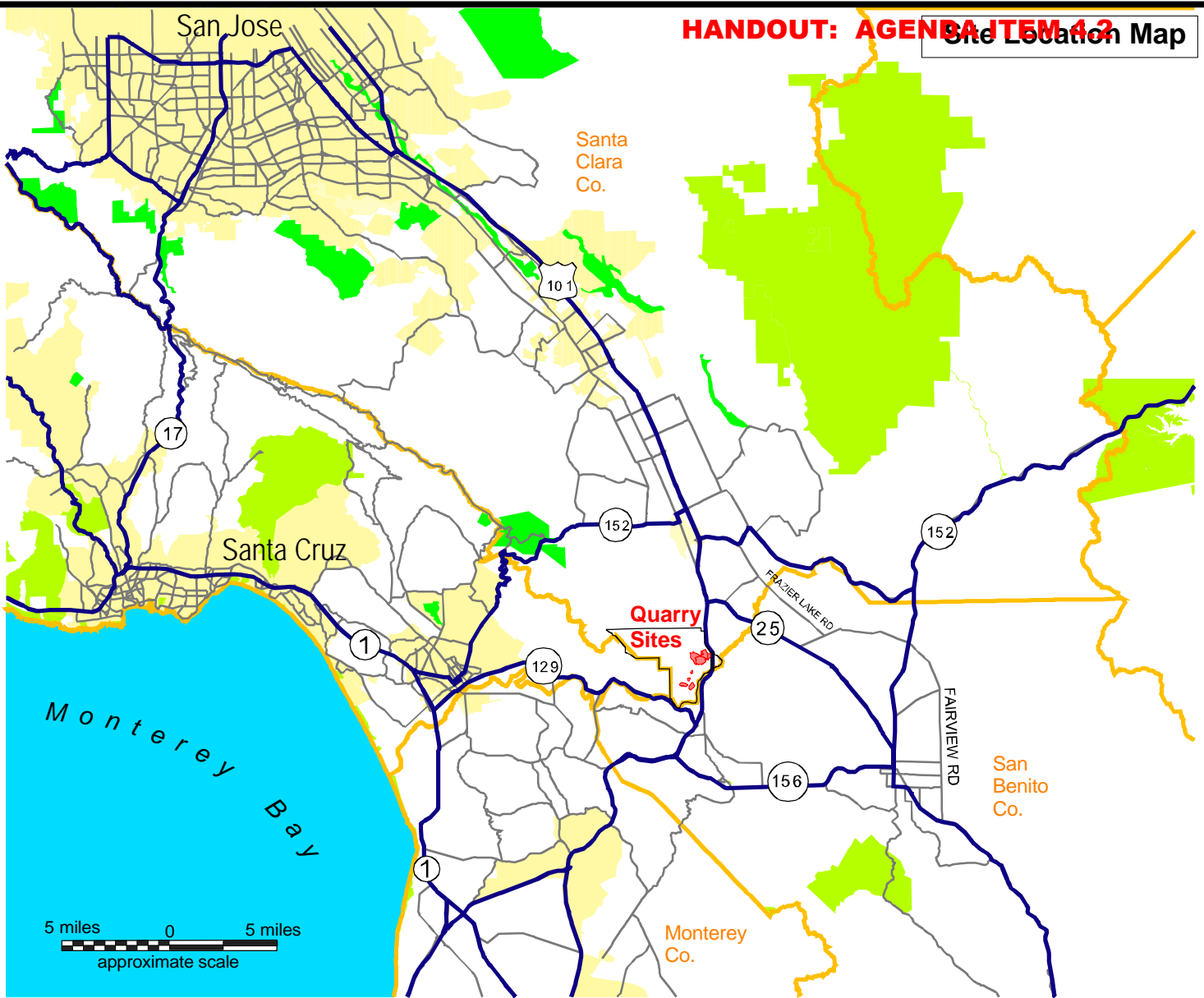
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1.0 INTRODUCTION

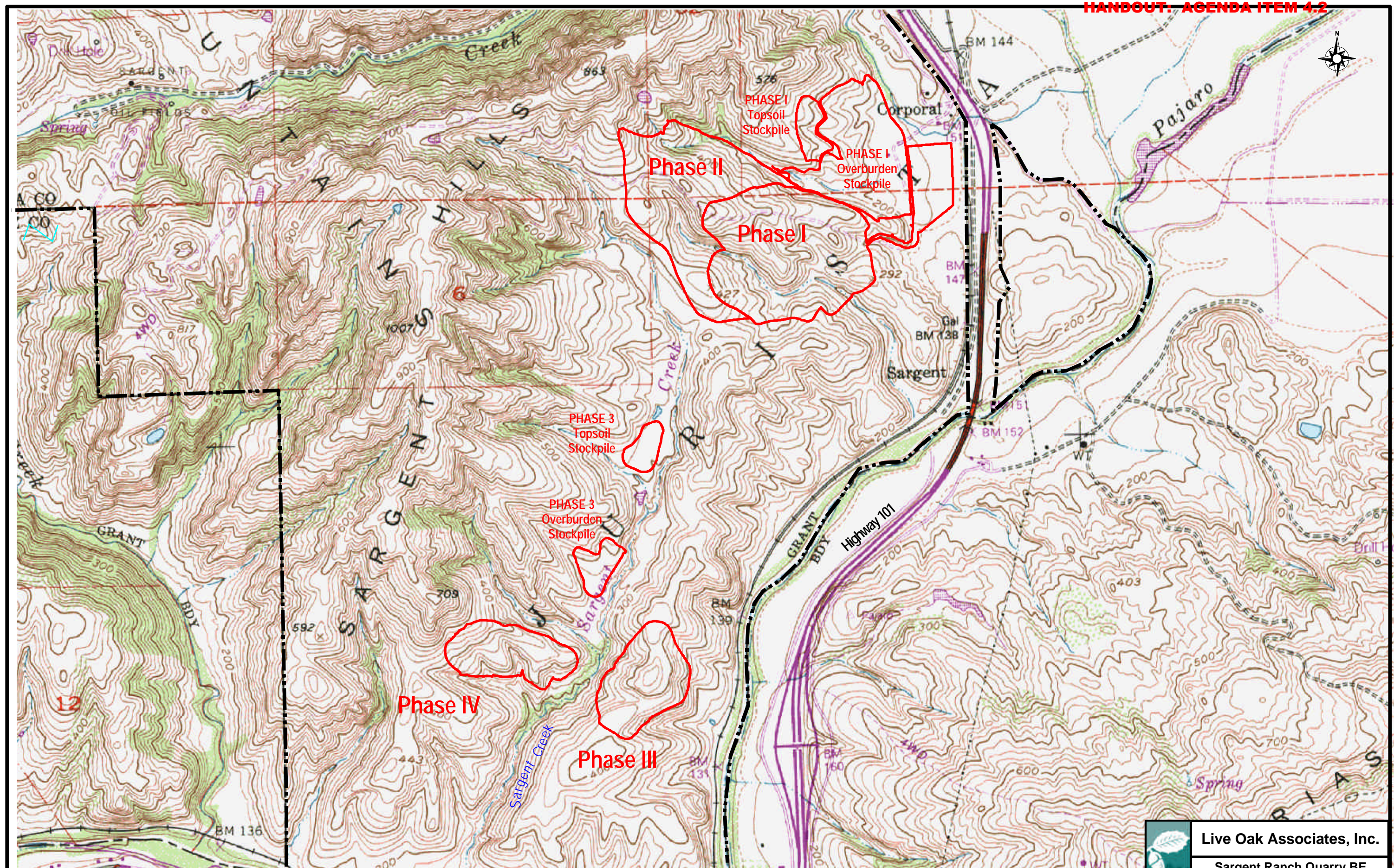
Live Oak Associates, Inc. (LOA) has prepared the following report that describes the biological resources of an approximately 300-acre Sargent Ranch Quarry project site located on the greater Sargent Ranch property, south of the City of Gilroy, in Santa Clara County, California (Figure 1); and discusses potential impacts (based on significance criteria established in CEQA) to these resources resulting from the proposed quarry operation. Although the ranch itself encompasses over 6,300 acres, the focus of this effort was on the approximately 300 acres comprising the quarry project. The proposed quarry site is comprised of a main quarry site, i.e. Phase I and Phase II of the project, totaling approximately 225 acres and two smaller areas on either side of Sargent Creek comprising Phase III and Phase IV, along with two associated stockpile areas, in the southern portion of the ranch of approximately 50 acres and 28 acres, respectively. The predominant habitat occurring within the footprints of the proposed quarry areas, hereafter referred to collectively as the “project site” or “study area”, is California annual grassland; however coast live oak woodlands, several ephemeral drainages, and dry-farmed hay fields also occur within the proposed quarry footprints. Sargent Ranch occurs adjacent to and west of Highway 101 approximately one mile south of the Highway 101 and Highway 25 interchange. The ranch is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The main quarry site is located centrally near the ranch’s eastern boundary and the other two smaller quarry sites are located in the southern portion of the ranch on either side of Sargent Creek. The ranch can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 North, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the site range from a low of approximately 200 feet NGVD (National Geodetic Vertical Datum) in the northern portion of the main quarry site, to a high of approximately 500 feet NGVD in the southwestern portion of the main site. Elevations of the two smaller quarry areas range from about 200 feet to about 600 feet NGVD. The project site is currently used primarily for cattle grazing although dry-farmed oat hay fields occur on the eastern portion of the main quarry site.



Live Oak Associates, Inc.

Sargent Ranch Quarry BE
Site / Vicinity Map


Date	Project #	Figure #
3/07/2015	662-08	1



Sources:
U.S.G.S. Chittenden 7-1/2' Quadrangle

 Quarry Pit Sites

1/2 mile 0 1/2 mile
Approximate Scale

		
Live Oak Associates, Inc.		
Sargent Ranch Quarry BE		
U.S.G.S. Quadrangle		
Date	Project #	Figure #
3/07/2015	Page 2 of 188	2

This report analyzes potential impacts of future site development by the proposed Sargent Ranch Quarry mining operations on sensitive biotic resources, significant biotic habitats, regional fish and wildlife movement corridors, and existing local, state, and federal natural resource protection laws regulating land use. Provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (CESA and FESA, respectively), California Fish and Wildlife Code, and California Water Code could greatly affect project costs, depending on the natural resources present on the site. The primary objectives of this report are as follows:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur on the site based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss biological resource issues specific to the site that could constrain future development; and
- Identify potential avoidance, minimization and mitigation options that could significantly reduce the magnitude of any likely impacts to biological resources associated with future site development.

Natural resource issues related to these state and federal laws have been identified in past planning studies conducted in the general project area, and it is reasonable to presume that such issues could be relevant to the subject parcels examined in this report. A number of state and federally listed animals, as well as other special status animal species (i.e., candidate species for listing and California species of special concern), have been documented within 20 miles of the project site. These species include state and/or federally listed species such as the California red-legged frog and California tiger salamander as well as California species of special concern including the burrowing owl. This report evaluates the site's suitability for these and other species.

CEQA is also concerned with project impact on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

Jurisdictional wetlands cannot be graded or filled without a Clean Water Act permit issued by the USACE. Furthermore, many seasonal wetlands occurring in the area support plant and animal species that have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). Such habitats supporting populations of federally listed animal species cannot be filled without a “take” permit issued by the USFWS.

CEQA is also concerned with a project’s impacts on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

The impact analysis discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the study area as discussed in Section 2.0 of this report. The evaluation of resources of the site is largely based on survey work conducted on the site by Pacific North Western Biological (PNWB) during the period from June 2000 to May 2001 (PNWB 2001) and by LOA during the period from July 2004 through June 2014. However, other important sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2014); (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014); (3) current listings from Special Plants and Animals (CDFW 2014); (4) numerous planning documents and biological studies for projects in the area, some of which have been prepared by LOA; and (5) manuals and references related to plants and animals of the region.

A number of state and federally listed species, as well as other special status species (i.e., candidate species for listing and California Species of Special Concern) have been documented in the vicinity of the project site; and some of these species are known to occur on Sargent Ranch itself, based on surveys completed by PNWB and LOA. These include animals such as the steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), bald eagle (*Haliaeetus leucocephalus*), white-tailed kite (*Elanus leucurus*), prairie falcon (*Falco*

mexicanus), long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), and American badger (*Taxidea taxus*); and plants such as saline clover (*Trifolium hydrophilum*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), and Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*). This report evaluates the quarry project site's suitability as habitat for these and other species; impacts that may occur to these resources as a result of the project; and, where potentially significant impacts are identified, includes mitigations to lessen such impacts on these resources to a less-than-significant level where possible.

1.1 Project Description

The proposed project, Sargent Ranch Quarry, is a pit mining operation that would occur on approximately 300 acres of the approximately 6300-acre Sargent Ranch property. The following project description is based on a draft project description provided by Verne Freeman (Freeman Associates 2015).

Of the site's approximately 300 acres, approximately 214 acres comprise the area of proposed mining. The proposed processing plant site is located near Highway 101 and is roughly 14 acres in size. The balance of the project's acreage consists of haul roads and overburden stockpile areas. Reclamation activities would be conducted on mining phases that are completed. The remaining portions of the site would not be utilized for mining, processing, or reclamation activities and would be maintained in their current conditions.

Sand and gravel would be extracted from within the 214-acre mining area in four phases. Mining will be done in an open pit fashion with 2:1 side slopes with 10-foot benches every 30 vertical feet. Finished slopes will then be backfilled to 3:1 and revegetated. No underground mining will be necessary for this project. Mining is proposed to occur year round. The total volume of material to be mined annually would be determined by the market demand. However, in the absence of other limitations, a maximum of 1,000,000 cubic yards of material would be mined in any single year.

The targeted materials to be mined are alluvial deposits of sand and gravel. Mined materials would be hauled to the proposed on-site aggregate processing plant for screening and limited crushing. The material would then be sold for a variety of construction related uses. Waste

materials (e.g., silts and clays) not suitable for construction or concrete uses would make up approximately 25 percent of the mined materials by volume. These materials would be separated and stockpiled in the two berms depending on the phase of mining.

Phase I Mining

In Phase I mining, material would be mined from the designated pit areas. Scrapers or haul trucks will be used to transport the material to the processing plant site. Any visible hills would be mined from the backside to the front (west to east), giving the perception of a disappearing ridgeline when viewed from Highway 101 and hiding much of the active mining as much as possible.

There are two berms that will serve as overburden stockpile and storage areas, and one separate location to be used for topsoil storage. Overburden or unsuitable materials from Phase I would be used to build the berm located to the east of the property boundary closest to Highway 101. At its highest point the berm will be 50 feet high and will serve to largely shield the processing plant site and operations from view from Highway 101. Once the front berm is built, the back berm will be constructed with the additional overburden. Topsoil will be kept separately and stockpiled in the areas shown on Figure 9. Phase I pit will be constructed with side slopes of 2/1 with 10-foot benches every 40 vertical feet, resulting in an overall angle of 2.3/1 for the temporary slope. Roughly 10,600,000 cubic yards will be excavated during Phase I. The highest elevation of mining in the Phase I mining area is 503 above mean sea level. The bottom of the lowest pit elevation will be 130 above mean sea level resulting in a maximum excavation depth of 373 feet.

Once Phase I is excavated the majority of the Phase I overburden stockpile area will be revegetated. The topsoil stockpile used for Phase I will be used for the stockpile of the Phase II topsoil also. Complete reclamation of the Phase I mining area will be completed once Phase II excavation is completed. Some of the overburden from Phase II will be used to reconstruct the excavated slopes in Phase I to a 3:1 permanent slope. Once completed Phase I and the Phase II areas will be reclaimed completely.

Portions of Phase I mining will be visible from Highway 101. In order to minimize visual impacts, landscaped berms will be constructed adjacent to the highway and the disappearing hillside mining method will be used to minimize impact.

Phase II Mining

Material for Phase II will be mined in a similar manner as Phase I, from the west side of the hills to the east. Overburden and topsoil from Phase II will be used to reclaim portions of Phase I. The westerly portion of Phase II will be excavated first starting at the highest elevation of 600 feet above sea level to a minimum pit level of 200 feet. Once this upper slope has been excavated, revegetation will start to minimize the time that visible slopes do not blend in with the natural ones. Phase II will produce approximately 20 million cubic yards or 23,000,000 tons of aggregates after processing from this portion of the mining site.

Phase III and IV Mining

Phase III and IV deposits are in two hills on both the east and west side the Sargent Creek. An access road will be constructed through the Sargent Valley from the Phase I and Phase II area, primarily staying on the west side of the creek. Any bridges across Sargent Creek, and any riparian impacts associated with them, will be determined as the timing on Phase III and IV mining comes closer. Based on initial sales estimates, Phase III and IV mining will not occur for approximately 25 years after operational start up.

Overburden from Phase III mining will be placed in the Phase II pit and will also be used to reconstruct the Phase II slopes to 3:1. A topsoil stockpile will be created to store topsoil due to stripping of Phases III and IV. An approximate total of 7,500,000 cubic yards will be excavated from Phases III and IV. No visual impacts will occur from these phases as they are located in a region of the mining site which is entirely hidden from view from other neighboring properties.

Sand and gravel would be mined using conventional equipment, including excavators and scrapers. Excavated material would be hauled by truck, scraper, or overland conveyor to the processing plant site. There the material would be sized, washed, and sorted into stockpiles. Some materials may also be crushed and sorted into stockpile via radial stacker and conveyers.

Materials would be kept wet to minimize dust emissions. Sprinklers would be used to control dust at multiple locations at the processing plant and on stockpiles.

Access to the site would be from Old Monterey road and through the gated entrance. Access roads may be paved and would be maintained for Project operations. Trucks leaving the site traveling southbound would continue back along Old Monterey Road and then onto southbound Highway 101 via the stacking lane already in place. Trucks traveling northbound would travel under the Sargent undercrossing and onto northbound Highway 101 via a new acceleration lane installed by the quarry operator.

During mining, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Storm water in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain storm water from entering the creek.

Aggregate processing would require water throughput of approximately 800 gallons per minute (384,000 gallons per day); however, 80 percent of the water would be recycled. Thus, 76,800 gallons would be pumped from the ground each day the plant is operating (up to approximately 200 days per year). A process water pond would be constructed within the processing plant site and would be used to retain water for reuse in aggregate processing.

A new onsite well will provide water for operations and dust control. A water truck would be used as needed to control dust on access roads and processing areas within the site. Approximately 86,000 gallons of water per day, or 17,000,000 gallons per year, would be used to control dust.

Existing electric power and telephone lines would be used for power needs for the Project or new service may be brought in to the site. Water will be obtained from a new on-site well, for both plant operations and drinking water for employees. A new private septic system will provide sanitary sewer facilities for the Project site. The septic system will be designed for a daily wastewater generation of 400 gallons per day. This is based on the Uniform Plumbing Code estimated wastewater generation of 25 gallons per day per employee.

Most mining will occur during the day and no lighting will be installed in the pit areas. Lights will be installed at the plant site, per MSHA regulations. Lighting may be on in the early morning and later evening hours during the winter months if production is required.

Mining equipment includes scrapers, excavators, dozers, loaders, and dump haul trucks. Scrapers would be used to remove the surface material. Scrapers collect material into their hoppers by lowering their blades as they traverse the site. When their hoppers are full, the scrapers would transport the material via the designated access routes from the mining area to the processing area located outside of the mining area. If mined material is too wet to be handled with a scraper, an excavator may be used to remove material and deposit it onto a small temporary stockpile, where any dewatering would occur by infiltration. Scrapers, or a loader, would be used to place the material onto haul trucks for transport to the processing site.

Sources of noise from the project will be primarily the washing and screening plant and the construction equipment used for mining. There will be no blasting required for the mining and very little, if any, crushing done at the processing plant. The plant's main function is to screen the material by size using screens and to wash the material of its silts and clays. Rubber screens are used to minimize noise from the sizing operation and, in general, washing creates little noise. Noise from the back up horns and engines of the mining equipment does create noise that can carry.

Portions of the project will be visible from both southbound and northbound Highway 101 at Sargent overcrossing. The visual impact to drivers can be seen for a few seconds while looking to the west from Highway 101. In order to minimize these impacts, two berms will be constructed to shield both the processing plant and the mining areas. The front berm will be built at the start of operations. This berm will be 50 feet high and serve to block both the views as well as dust and storm water runoff from the Highway 101, Tar Creek undercrossing. The rear berm will serve to block the views into the mining area from Highway 101. Both these berms will serve as overburden stockpile areas and will be seeded to blend in with the surround natural landscape.

Water will be the primary means of dust control at the quarry. Two water trucks will be used to keep both exposed areas of mining and the plant areas wet to contain dust. The prevailing wind

is from the west to the east, so the buffer hills between the mining areas and the eastern edge of the Sargent Ranch boundary may be impacted on windy days. Measures to control dust in addition to the use of water include keeping the mining areas limited to only the working area and using early revegetation to cover up previously mined areas. Use of dust palliatives may also be considered on haul roads and unpaved plant areas.

To the greatest extent possible, the Project has been designed to conform to the standards outlined in the Santa Clara Valley Habitat Conservation Plan (hereafter referred to as the “HCP”). For example, an 150-foot buffer has been maintained between the Project boundaries and the edge of Tar Creek, which is considered a Category 1 stream by the HCP. Biological impacts are proposed to be mitigated by the dedication of a conservation easement area on the east side of the Sargent Valley.

2.0 EXISTING CONDITIONS

The approximately 300-acre Sargent Ranch Quarry study area is located on the greater, approximately 6300-acre Sargent Ranch property, south of the City of Gilroy in Santa Clara County, California within foothills on the east side of the Santa Cruz Mountains. The proposed quarry site is comprised of quarry plant facilities, a main quarry pit site (Phase I and II), and two smaller quarry pit areas on either side of Sargent Creek in the southern portion of the ranch (Phase III and IV), as described previously in the project description. Open rangeland borders the proposed project areas.

Elevations of the project site range from a high of approximately 600 feet National Geodetic Vertical Datum (NGVD) to a low of approximately 200 feet NGVD (Figure 2). Habitats of the project site are comprised primarily of California annual grassland; however, coast live oak woodland and dry-farmed hay fields also occur on the site. The primary use of the habitats of the project site is cattle grazing. The habitats of the site are described in detail in Section 2.1 of this report.

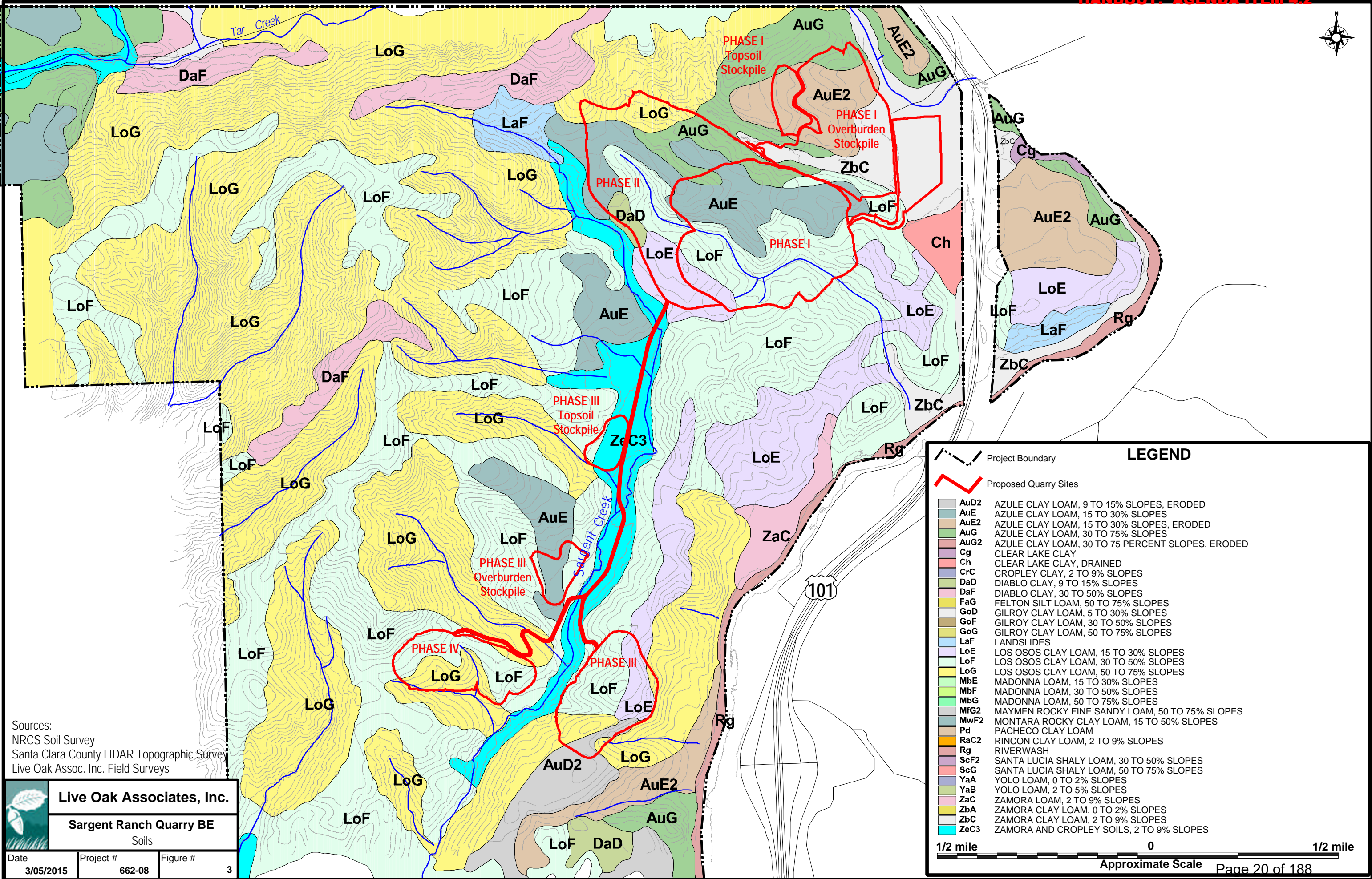
Nine soil-mapping units have been identified on the site and these soils are described in greater detail in Table 1 and depicted in Figure 3. None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types are considered well-drained. None of these soils is a serpentine or alkaline soil, therefore, they would not be expected to support special status plant species that are endemic to serpentine or alkaline soils.

Table 1. Descriptions of soil mapping units of the study area (USDA NRCS Web Soil Survey).

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0

<http://soils.usda.gov/technical/classification/osd/index.html> and

USDA Soil Conservation Service Soil Survey – Santa Clara County California



Annual precipitation in the general vicinity of the study area is 13-18 inches, most of which falls between the months of October and April. Virtually all precipitation falls in the form of rain. Storm water runoff readily infiltrates the soils of the site, but when field capacity has been reached, gravitational water drains into ephemeral drainages on the site and is eventually carried into the Pajaro River, which drains to Monterey Bay to the west of the site.

2.1 BIOTIC HABITATS/LAND USES

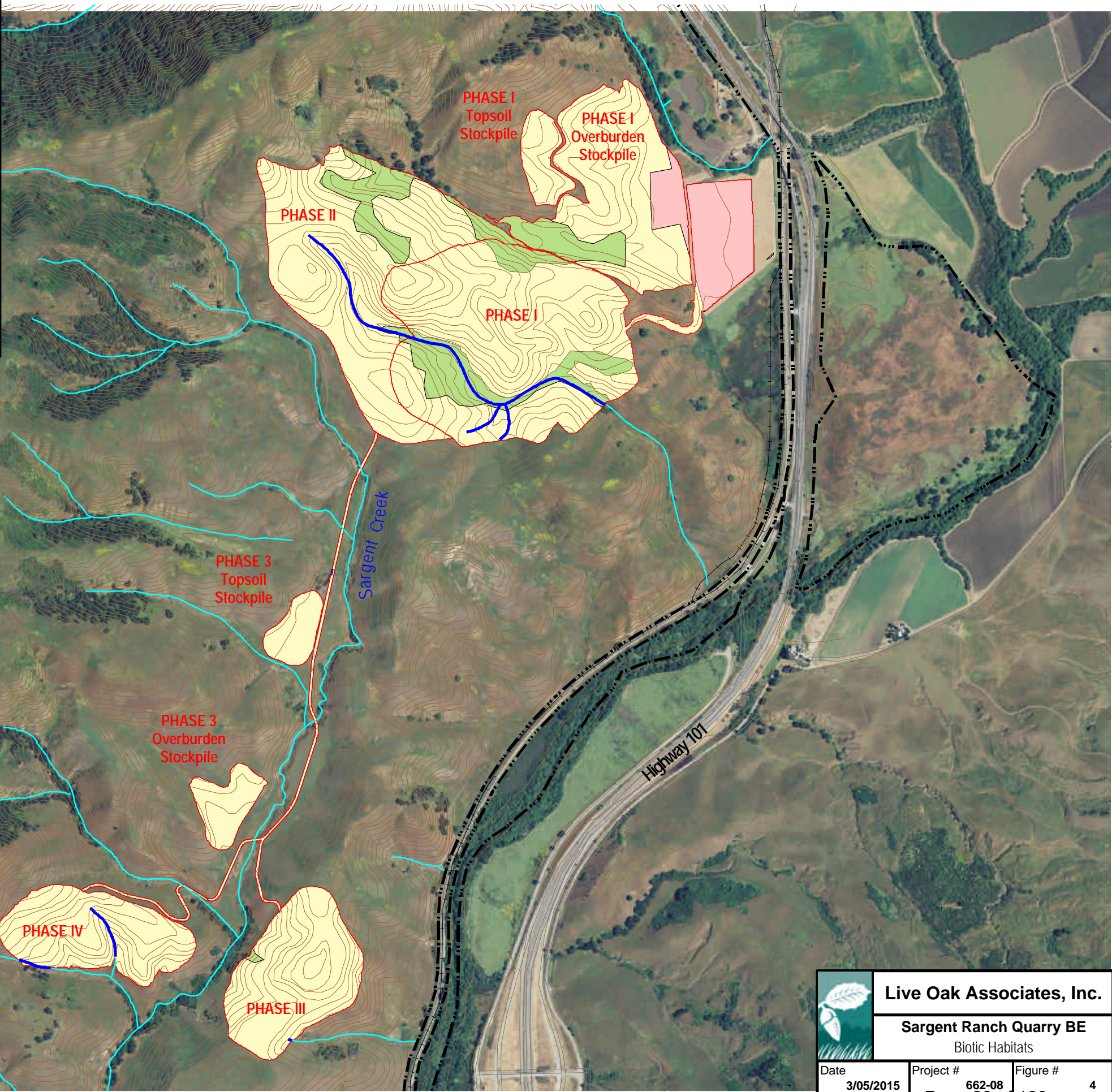
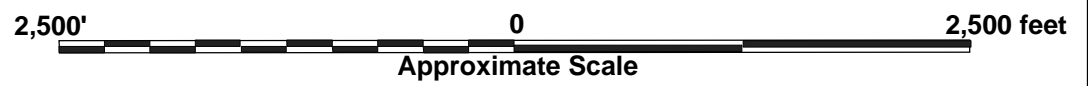
Two biotic habitats and one land use have been identified on the project site (Table 2, Figure 3); and these habitats and land uses have been named pursuant to land cover types defined in the Santa Clara Valley Habitat Conservation Plan (HCP) (ICF Int. 2012). More detailed habitat descriptions are provided below. For the purposes of this report, the natural terrestrial communities are identified as California annual grassland, coast live oak forest and woodland; and the one land use is identified as Grain, Row Crop, Hay and Pasture. Several drainages with a defined bed and bank also occur within the project site footprint, and an access road that will be constructed as part of Phase III and Phase IV will traverse Sargent Creek and associated drainages in several locations. Lists of vascular plants observed on the greater 6300-acre Sargent Ranch property during LOA's 2004 through 2014 surveys is provided in Appendix A; and a list of terrestrial vertebrates observed on the greater ranch property and/or potentially present on the study area, based on both PNWB and LOA surveys, has been provided in Appendix B.

Table 2: Habitats and Land Uses of the Project Site by Project Phase					
Habitats/Land Uses	Phase I Acreages	Phase II Acreages	Phase III Acreages	Phase IV Acreages	Total
California Annual Grassland	114.0	58.0	49.2	27.3	248.5
Coast Live Oak Forest and Woodland	22.4	10.4	0.3	0.0	33.1
Grain, Row Crop, Hay and Pasture	18.8	0.0	0.0	0.0	18.8
Total	155.2	68.4	49.5	27.3	300.4
Creeks, Streams and Drainages	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Total
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	3,043	1,514	155	915	5,627

LEGEND

Quarry Pit Sites, Overburden, and Topsoil Disturbance Limits

Biotic Habitats (acreage by phase)		I	II	III	IV
<div></div>	California Annual Grassland	113.82	58.07	49.23	27.30
<div></div>	Coast Live Oak Forest and Woodland	22.39	10.38	0.32	N/A
<div></div>	Grain, Row-crop, Hay & Pasture, Disked / Short-term Fallowed	18.81	N/A	N/A	N/A
<div></div>	Pond	N/A	N/A	0.01	N/A
<div></div>	Drainages within Quarry Pit Sites (length in feet)	3,046	1,514	155	915
<div></div>	Drainages outside of Quarry Pit Sites				



2.1.1 California Annual Grassland

California annual grassland habitat is the dominant habitat on the project site, occupying approximately 250 acres. Grasslands on the site are dominated by non-native grass species such as wild oats (*Avena barbata* and *A. fatua*), ripgut (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian rye grass (*Festuca perennis*); and weedy non-native forb species such as filarees (*Erodium* spp.), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), summer mustard (*Hirschfeldia incana*) and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow (*Achillea millifolium*), clarkia (*Clarkia* sp.), rattlesnake weed (*Daucus pusillus*), Pacific rye grass (*Elymus glaucus* ssp. *virescens*), lupines (*Lupinus* spp.), California melic (*Melica californica*), purple needle-grass (*Nassella pulchra*) and gray mules ears (*Wyethia helenioides*).

The grassland is expected to support a host of common grassland animal species. California tiger salamanders (*Ambystoma californiense*) are known to breed in stock ponds in the site's vicinity and may be expected to estivate in grasslands of the site. Reptilian species observed or expected to occur onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*), western rattlesnake (*Crotalis viridis*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*).

This habitat provides foraging habitat for a number of birds. Bird species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), great horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and the resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*),

western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltirparus minimus*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianus*). Other medium-sized and larger mammals that might also be expected to occur on the site but that have not been directly observed include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

2.1.2 Coast Live Oak Forest and Woodland

Oak woodlands dominated by coast live oak (*Quercus agrifolia*) occupy approximately 33 acres of the site's Phase I and Phase II areas. This habitat type is primarily associated with an ephemeral drainage in the southern portion of Phase I and with a deep ravine in the central portion of Phase I and northeastern portion of Phase II. Coast live oak woodlands of the site generally have a relatively closed canopy and an understory that is either barren or covered by dense leaf litter, with very little herbaceous vegetation present.

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker (*Melanerpes formicivorus*), California quail, wild turkey, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Representative animal species of oak-dominated forests include arboreal salamander (*Aneides lugubris*), southern alligator lizard, common kingsnake, ringneck snake (*Diadophis punctatus*), western screech owl (*Otus kennicottii*), scrub jay, acorn woodpecker, western bluebird, opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.1.3 Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed

Dry-farmed oat hay fields occur in the footprint of the proposed plant area in the eastern portion of the main quarry site near Highway 101. Vegetation similar to that occurring in annual grasslands as described above was observed to grow along the disturbed edges of the fields. Wildlife using adjacent habitats would be expected to also use this habitat for foraging and movement activities.

2.1.4 Ephemeral Drainages and Sargent Creek

Ephemeral drainages that would be considered HCP Category 2 streams occur on all four phases of the proposed quarry project. These drainages were mapped by LOA during a delineation effort

that was conducted on the greater Sargent Ranch property in 2007 but which was never verified by USACE. For the most part, these ephemeral drainages were not observed to support wetland vegetation, but did exhibit a defined bad and bank and evidence of an Ordinary High Water mark on opposing banks, and, as such, would likely be considered jurisdictional by USACE, RWQCB and CDFW. Vegetation within ephemeral drainages of the site was observed to be generally similar to that found in the surrounding upland California annual grassland habitats and species utilizing drainages of the site would also be similar to those using grasslands of the site. These drainages would only have water present during and immediately after rainstorm events and would not be a significant source of seasonal water for native plants and wildlife; and they would not likely provide habitat values in excess of those provided by surrounding upland habitats.

The alignment of the access road that will be constructed for Phase III and IV, as currently planned, will traverse Sargent Creek in three locations, as well as traverse several associated ephemeral drainages. Sargent Creek is considered a Category 1 stream under the HCP. Sargent Creek does not support significant stands of woody riparian vegetation except at the very lowest reaches near the southern boundary of the greater Sargent Ranch property; however, discrete stands of red and arroyo willows (*Salix laevigata* and *S. lasiolepis*, respectively) and mulefat (*Baccharis salicifolia*) do occur at various locations along the middle and upper reaches of the creek and the creek channel was observed to support herbaceous wetland vegetation throughout most of its reach on the Sargent Ranch property, including but not limited to, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), slough sedge (*Carex obnupta*), spike rush (*Eleocharis macrostachya*), and tall flat sedge (*Cyperus eragrostis*).

Amphibian species observed within Sargent Creek during LOA surveys included Pacific tree frogs (*Hyla regilla*), California red-legged frogs (*Rana draytonii*) and western toads (*Anaxyrus boreas*). California red-legged frogs are known to breed in stock ponds within the creek's watershed on the greater Sargent Ranch property. Although California tiger salamanders have not been observed within the Sargent Creek watershed during surveys, they are known to breed in stock ponds to the north of Tar Creek, and stock ponds within the Sargent Creek watershed appear to support appropriate hydrology to function as breeding habitat for this species. Although western pond turtles have never been documented in Sargent Creek or nearby stock ponds, potentially western pond turtles may occur in the creek during the wet season.

Avian species observed in Sargent Creek during LOA surveys foraging for amphibian and invertebrate prey during the wet season include great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and snowy egrets (*Egretta thula*).

The creek likely functions as an important movement corridor for several mammal species that have been observed within its vicinity during LOA surveys, including but not limited to, striped skunks, gray fox, bobcat, cougar, wild pig and black-tailed deer. The creek likely also provides an important seasonal supply of water for local wildlife.

2.2 MOVEMENT CORRIDORS

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches (Harris and Gallagher 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of corridors. They believed, however, that connectivity questions make sense only in terms "of a particular focal species and landscape." For example, volant (flying) species are less affected by barriers than small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be and are useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the City of San Jose.

The quality of habitat within the corridors is important: “better” habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply do to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in hills surrounding San Jose include California buckeye (*Aesculus californica*), dogwood (*Cornus* sp.), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus* sp.), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

- 1.) Wide ranging mammals can migrate and find mates;
- 2.) Plants can propagate within the corridor and beyond;
- 3.) Genetic integrity can be maintained;
- 4.) Animals can use the corridor in response to environmental changes or a catastrophic event;
- 5.) Individuals can recolonize areas where local extinctions have occurred.

A corridor is “wide enough” when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of “passage species” (those species who typically use a corridor for the express purpose of moving from one intact area to another) *and* “corridor dwellers” (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits

sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

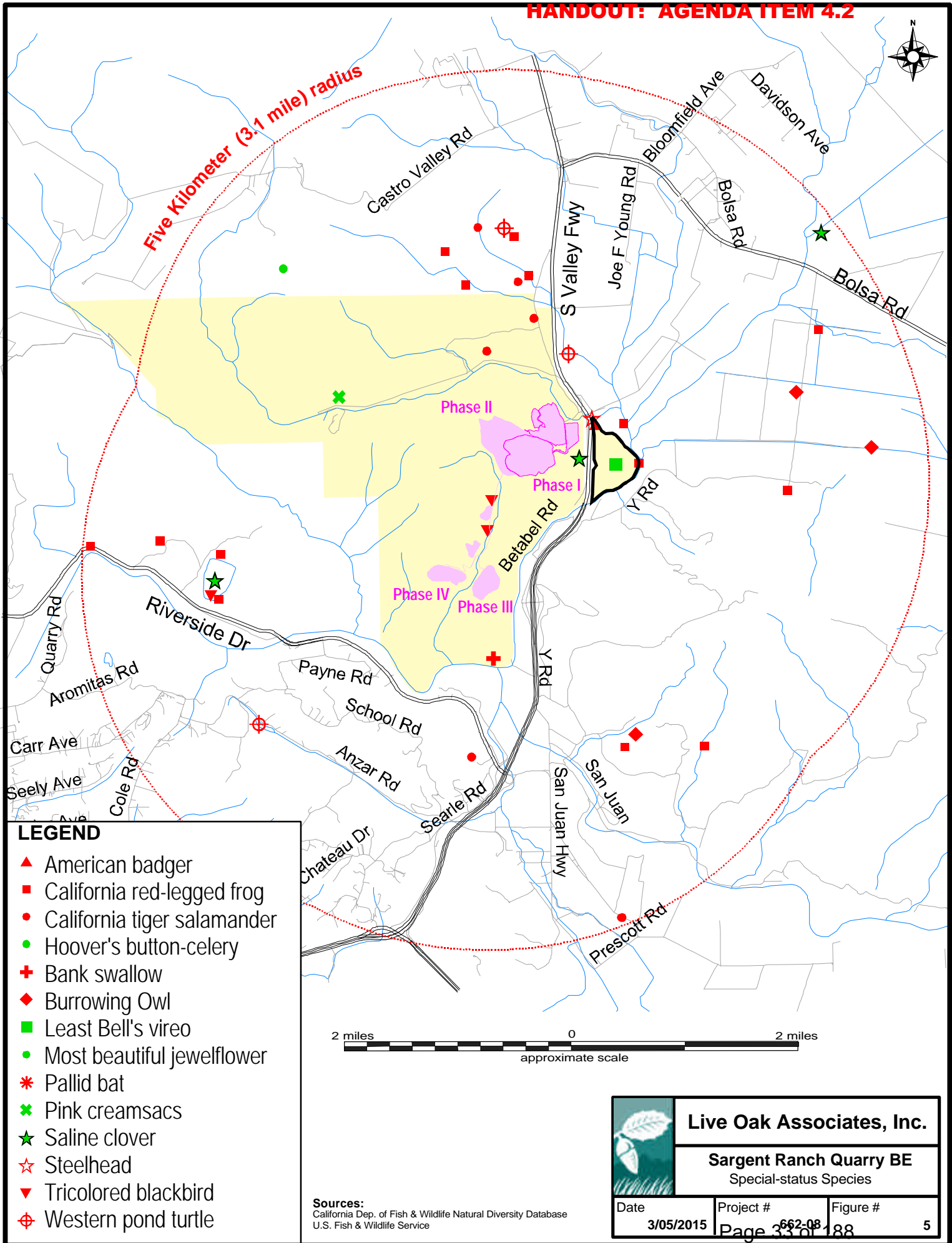
As noted in Section 2.1, a number of reptiles, birds, and mammals may use the project site as part of their home range and dispersal movements. Creeks and drainages are known to facilitate wildlife movement, and the two creek corridors that occur in proximity to portions of the project site, i.e. Sargent Creek and Tar Creek, likely provide important movement habitat for many native wildlife species travelling north-south and east-west, respectively. Ephemeral drainages occurring within the footprints of the project, however, generally support vegetation that is undifferentiated from surrounding upland grassland habitats and are not likely to function as anything but marginal movement corridors due to lack of significant woody vegetation cover.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as “candidates” for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2014). Collectively, these plants and animals are referred to as “special status species.”

A number of special status plants and animals occur in the vicinity of the site (Figure 5). These species and their potential to occur in the study area are listed in Table 2 on the following pages. Sources of information for this table included *California’s Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2014), *Endangered and Threatened Wildlife and Plants* (USFWS 2014), *State and Federally Listed Endangered and Threatened*


Animals of California (CDFWCDFW 2014), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014). This information was used to evaluate the potential for special status plant and animal species to occur onsite. Figure 5 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDDB) within a three mile radius of the site. It is important to note that the CNDDDB is a volunteer database; therefore, it may not contain all known or gray literature records.



LEGEND

- ▲ American badger
- California red-legged frog
- California tiger salamander
- Hoover's button-celery
- ✚ Bank swallow
- ◆ Burrowing Owl
- Least Bell's vireo
- Most beautiful jewelflower
- * Pallid bat
- ✚ Pink creamsacs
- ★ Saline clover
- ☆ Steelhead
- ▼ Tricolored blackbird
- ⊕ Western pond turtle

Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service

 Live Oak Associates, Inc.			
Sargent Ranch Quarry BE Special-status Species			
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A search of published accounts for all relevant special status plant and animal species was conducted for the Chittenden USGS 7.5" quadrangle in which the project site occurs and for the eight surrounding quadrangles (Gilroy, Gilroy Hot Springs, San Felipe, Hollister, San Juan Bautista, Prunedale, Watsonville East and Mount Madonna) using the California Natural Diversity Data Base (CNDDB) Rarefind 5 (CDFW 2014). All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (Table 3).

Special status species with potential to occur on the project site itself or in the immediate surrounding vicinity are discussed further below.

Table 3: Special status species that could occur in the project vicinity**PLANTS (adapted from CDFW 2014 and CNPS 2014)*****Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act***

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Monterey Spineflower (<i>Chorizanthe pungens</i> var. <i>pungens</i>)	FT, CRPR 1B	<u>Habitat:</u> Occurs in sandy soils within chaparral, cismontane woodland, coastal dunes, coastal scrub and valley and foothill grassland. <u>Elevation:</u> 3-450 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. Habitat is absent from the site. Species is not known to occur within Santa Clara County.
Robust Spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs in sandy or gravelly soils within cismontane woodland, coastal dunes, and coastal scrub. <u>Elevation:</u> 3-300 meters. <u>Blooms:</u> Annual herb; April-September.	Absent. Habitat is absent from the site.
Seaside Bird's-beak (<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>)	CE, CRPR 1B	<u>Habitat:</u> Occurs in often disturbed sandy soils of closed-cone coniferous forests, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. <u>Elevation:</u> 0-425 meters. <u>Blooms:</u> Annual herb; April-October.	Absent. Habitat is absent from the site.
Santa Clara Valley dudleya (<i>Dudleya abramsii</i> ssp. <i>setchellii</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs within cismontane woodland and valley and foothill grasslands on rocky serpentine soils. <u>Elevation:</u> 60-455 meters. <u>Blooms:</u> Perennial herb; April–October.	Absent. Serpentine soils required by this species are absent from the study area.
Showy Rancheria clover (<i>Trifolium ameonum</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs in coastal bluff scrub, valley and foothill grassland (sometimes on serpentine). <u>Elevation:</u> 5-415 meters. <u>Blooms:</u> Annual herb; April-June.	Unlikely. Marginal habitat for this species occurs within grassland habitats of the study area; however, the only observance in the vicinity of the study area dates back to 1903 and serpentine soils on which it is sometimes found, while present on the 6300-acre ranch property, are absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Anderson's manzanita (<i>Arctostaphylos andersonii</i>)	CRPR 1B	<u>Habitat</u> : Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. <u>Elevation</u> : 60-730 meters. <u>Blooms</u> : Evergreen shrub; November–May.	Absent. Manzanita species are absent from the project site.
Hooker's manzanita (<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>)	CRPR 1B	<u>Habitat</u> : Occurs in sandy soils, sandy shales or on sandstone outcrops within closed-cone coniferous forest, chaparral, cismontane woodland, and sandy coastal scrub. <u>Elevation</u> : 85-536 meters. <u>Blooms</u> : Evergreen shrub; January–June.	Absent. Manzanita species are absent from the project site. Species is only known from Monterey County.
Pajaro manzanita (<i>Arctostaphylos pajaroensis</i>)	CRPR 1B	<u>Habitat</u> : Occurs in sandy soils within chaparral. <u>Elevation</u> : 30-760 meters. <u>Blooms</u> : Evergreen shrub; December–March.	Absent. Manzanita species are absent from the project site. Species is only known from Monterey County.
Kings Mountain manzanita (<i>Arctostaphylos regismontana</i>)	CRPR 1B	<u>Habitat</u> : Occurs on granitic or sandstone outcrops within broadleaved upland forest, chaparral, and north coast coniferous forest. <u>Elevation</u> : 305-730 meters. <u>Blooms</u> : Evergreen shrub; January–April.	Absent. Manzanita species are absent from the project site.
Anderson's manzanita (<i>Arctostaphylos andersonii</i>)	CRPR 1B	<u>Habitat</u> : Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. <u>Elevation</u> : 60-730 meters. <u>Blooms</u> : Evergreen shrub; November–May.	Absent. Manzanita species are absent from the project site.
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	CRPR 1B	<u>Habitat</u> : Occurs on alkaline soils within playas, valley and foothill grasslands and in vernal pools <u>Elevation</u> : 1-60 meters <u>Blooms</u> : Annual herb; March–June	Unlikely. Soils of the site are not particularly alkaline, and vernal pools are absent from the project site.
San Joaquin spearscale (<i>Atriplex joaquiniana</i>)	CRPR 1B	<u>Habitat</u> : Occurs in seasonal alkali wetlands or alkali sink scrub within chenopod scrub and grassland habitats. <u>Elevation</u> : 1-835 meters <u>Blooms</u> : Annual herb; April–October	Absent. Habitat is absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	CRPR 1B	<u>Habitat:</u> Chaparral, cismontane woodlands, and valley and foothill grasslands (sometimes on serpentine) <u>Elevation:</u> 90-1400 meters <u>Blooms:</u> Perennial herb; March-June	Unlikely. Grasslands of the site are not serpentine and provide marginal habitat for this species.
Round-leaved filaree (<i>California macrophylla</i>)	CRPR 1B	<u>Habitat:</u> Occurs on clay soils within cismontane woodlands and valley and foothill grasslands. <u>Elevation:</u> 15-1200 meters. <u>Blooms:</u> Annual herb; March-May.	Possible. Grasslands of the site provide potential habitat for this species.
Chaparral harebell (<i>Campanula exigua</i>)	CRPR 1B	<u>Habitat:</u> Rocky chaparral, often on serpentine <u>Elevation:</u> 275-1250 meters <u>Blooms:</u> Annual herb; May-June	Absent. Habitat is absent from the site
Pink creamsacs (<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within chaparral, cismontane woodland, meadows and seeps, and valley and foothill grasslands. <u>Elevation:</u> 20- 900 meters. <u>Blooms:</u> Annual herb; April-June.	Unlikely. This species was documented on Sargent Ranch in 1992 and CNDDDB shows the location of the occurrence to the north of Tar Creek within a seep spring in non-serpentine grasslands. As this species is considered serpentine endemic, it appears that the location in CNDDDB may have been misrepresented and that possibly the population was further north within serpentine grasslands. Grasslands of the project site are not serpentine and would provide marginal habitat for this species.
Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congonii</i>)	CRPR 1B	<u>Habitat:</u> Occurs on alkaline soils within valley and foothill grasslands. <u>Elevation:</u> 1-230 meters <u>Blooms:</u> Annual herb; May-November.	Possible. Marginal habitat for this species occurs within grasslands of the project site.
Eastwood's goldenbush (<i>Ericameria fasciculata</i>)	CRPR 1B	<u>Habitat:</u> Occurs in sandy openings within closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub. <u>Elevation:</u> 30-275 meters. <u>Blooms:</u> Evergreen shrub; July-October.	Absent. Habitat is absent from the project site. Species only known from Monterey County.
Hoover's button-celery (<i>Eryngium aristulatum</i> var. <i>hooveri</i>)	CRPR 1B	<u>Habitat:</u> Occurs in vernal pools. <u>Elevation:</u> 3-45 meters <u>Blooms:</u> Annual/perennial herb; July	Absent. Vernal pools are absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Fragrant fritillary (<i>Fritillaria liliacea</i>)	CRPR 1B	<u>Habitat:</u> Occurs on clay soils within coastal prairie, and scrub, and valley and foothill grasslands, often on serpentine. <u>Elevation:</u> 3-410 meters <u>Blooms:</u> Bulbiferous; February-April	Unlikely. Species usually occurs in serpentine soils which are absent from the site; therefore, grasslands of the site would be considered marginal for this species.
Loma Prieta hoita (<i>Hoita strobilina</i>)	CRPR 1B	<u>Habitat:</u> Occurs in grassland, chaparral, cismontane woodland, riparian woodland, often on serpentine. <u>Elevation:</u> 30-860 meters. <u>Blooms:</u> May-October.	Unlikely. Serpentine soils are absent from the study area and only two occurrences known from the vicinity were last observed in 1918 and 1922. However, coast live oak woodlands and grasslands of the site provide marginal habitat.
Legenere (<i>Legenere limosa</i>)	CRPR 1B	<u>Habitat:</u> Occurs in vernal pools. <u>Elevation:</u> 1-880 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. Vernal pools are absent from the study area.
Smooth lessingia (<i>Lessingia micradenia</i> ssp. <i>glabrata</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within grassland and chaparral. <u>Elevation:</u> 120-420 meters. <u>Blooms:</u> Annual herb; July-November.	Absent. Serpentine soils required by this species are absent from the study area.
Indian Valley bush mallow (<i>Malacothamnus aboriginum</i>)	CRPR 1B	<u>Habitat:</u> Occurs on rocky or granitic soils often in burned areas in chaparral and foothill woodland. <u>Elevation:</u> 150-1700 meters. <u>Blooms:</u> Evergreen shrub; April-October.	Absent. Rocky and granitic soils are absent from the study area; and this evergreen shrub would have been identifiable surveys conducted on the site if it were present.
Arcuate bush mallow (<i>Malacothamnus arcuatus</i>)	CRPR 1B	<u>Habitat:</u> Occurs on gravelly soils within chaparral. <u>Elevation:</u> 15-355 meters <u>Blooms:</u> Evergreen shrub; April-September	Absent. Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable surveys conducted on the site if it were present.
Hall's bush mallow (<i>Malacothamnus hallii</i>)	CRPR 1B	<u>Habitat:</u> Occurs within chaparral and coastal scrub <u>Elevation:</u> 10-760 meters <u>Blooms:</u> Evergreen shrub; May-October	Absent. Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable during surveys conducted on the site if it were present.
Woodland woollythreads (<i>Monolopia gracilens</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within broadleaved upland forests, chaparral, cismontane woodland, North Coast coniferous forests, and valley and foothill grasslands <u>Elevation:</u> 10-1200 meters <u>Blooms:</u> Annual herb; February-July	Absent. Serpentine soils required by this species are absent from the study area.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Santa Cruz Mountains beardtongue (<i>Penstemon rattanii</i> var. <i>kleei</i>)	CRPR 1B	<u>Habitat:</u> Occurs in chaparral, lower montane coniferous forest, and north coast coniferous forest. <u>Elevation:</u> 400-1100 meters. <u>Blooms:</u> Perennial herb; May-June.	Absent. Habitat for this species is absent from the study area.
Hairless popcorn-Flower (<i>Plagiobothrys glaber</i>)	CNPS 1A	<u>Habitat:</u> Alkaline meadows and seeps and coastal salt marshes and swamps <u>Elevation:</u> 15-180 meters <u>Blooms:</u> Annual herb; March-May	Absent. Habitat for this species is absent from the study area.
Pine rose (<i>Rosa pinetorum</i>)	CRPR 1B	<u>Habitat:</u> Occurs in closed-cone coniferous forest. <u>Elevation:</u> 2-300 meters. <u>Blooms:</u> Perennial shrub; May-July.	Absent. Habitat for this species is absent from the study area.
Most beautiful jewel-flower (<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>)	CRPR 1B	<u>Habitat:</u> Serpentine chaparral, cismontane woodlands, and valley and foothill grasslands <u>Elevation:</u> 110-1000 meters <u>Blooms:</u> Annual herb; March-October	Absent. Serpentine soils required by this species are absent from the study area.
Saline clover (<i>Trifolium hydrophilum</i>)	CRPR 1B	<u>Habitat:</u> Marshes and swamps, mesic and alkaline areas of valley and foothill grasslands, and vernal pools. <u>Elevation:</u> 0-300 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. This species was documented on the ranch within wetlands to the southeast of the Phase I and Phase II quarry areas; however, the project site does not provide habitat for this species.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Steelhead (<i>Oncorhynchus mykiss</i>)	FT	Migrate up fresh water rivers or streams in the spring and spend the remainder of the time in the ocean.	Absent. Suitable habitat is absent from the quarry site; although steelhead have been known to occur in Tar Creek located north of the Phase I quarry site.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults estivate in grassland habitats adjacent to the breeding sites.	Present. This species is known to occur on Sargent Ranch in the immediate vicinity of the quarry project site and the project site provides suitable estivation habitat for this species. This species is presumed to estivate on the site; however, breeding habitat is absent on the project site.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
California red-legged frog (<i>Rana aurora draytonii</i>)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	Present. This species has been documented at numerous locations within riparian and stock pond habitats in the Sargent Creek watershed in close proximity to the project; and within the Tar Creek watershed located north of the Phase I overburden and plant sites. Although the project site does not support breeding habitat for this species, potentially this species may use upland habitats of the project site during foraging and migration movements.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	SE	Nests and roosts near water bodies with consistent fish supply (eagle's main food source). Builds nests in tall trees or on cliffs.	Possible. Nesting habitat is absent from the site; however, this species has been observed roosting on the ranch in the vicinity of Tar Creek and may occur rarely on the project site to forage.
Bank swallow (<i>Riparia riparia</i>)	CT	Colonial nester on vertical cliffs and banks near riparian or coastal habitats. Requires sandy soils to excavate nest holes.	Possible. This species has been documented foraging on the ranch and potential nesting habitat occurs along Sargent Creek, so this species may forage over the project site.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE, CE	Occurs in southern California during the breeding season March, migrates out of the state July through September. Dense brush, mesquite, or cottonwood-willow forests in riparian areas.	Unlikely. The last sighting of this species near the site was in 1932 and the site itself lacks potential nesting habitat for this species; although, potential habitat occurs off-site along the upper reaches of Sargent and along Tar Creek near the Phase I and Phase II areas.
Tricolored blackbird (<i>Agelaius tricolor</i>)	CE	Breeds near fresh water in dense emergent vegetation.	Unlikely. There are two CNDDDB occurrences of this species on Sargent Ranch, nesting in emergent vegetation of stock ponds adjacent to Sargent Creek from 1980 and 1989; however, this species was not observed on the ranch by either PNWB or LOA during surveys and the quarry project site provides no breeding habitat for this species, and only very marginal foraging habitat for this species.
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	CT (Candidate)	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Found in all habitats except sub-alpine and alpine.	Possible. Suitable roosting habitat is absent from the project site; however, this species may forage over the site.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Foothill yellow-legged frog (<i>Rana boylei</i>)	CSC	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	Absent. Suitable habitat is absent from the site and its immediate vicinity, and this species has never been documented on the greater Sargent Ranch property despite numerous herpetological surveys.
Western spadefoot (<i>Spea hammondi</i>)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	Unlikely. PNWB biologists tentatively identified this species by vocalization on the greater Sargent Ranch property during 2000-2001 surveys, however, the project site provides no breeding habitat for this species, and they have never been directly observed in the project site vicinity during many surveys for CTS and CRLF.
Western pond turtle (<i>Emys marmorata</i>)	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Possible. Potential habitat for this species occurs during the wet season within Sargent Creek in the vicinity of the Phase III and IV access road, and it may occasionally use upland habitats of the site in proximity to the creek; however, there are no documented occurrences of turtles in the immediate project vicinity.
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	Unlikely. Habitat is marginal on the site for this species as open sandy areas are absent, and this species has never been observed on Sargent Ranch or documented in CNDDDB within a three-mile radius.
White-tailed kite (nesting) (<i>Elanus leucurus</i>)	CP	Open grasslands and agricultural areas throughout central California.	Possible. Suitable breeding habitat exists on the site for this species within oak woodland habitat, and grasslands and agricultural areas on the project site provide suitable foraging habitat.
Peregrine Falcon (<i>Falco peregrinus anatum</i>)	CP	Requires cliffs for nesting and forages in a variety of habitats.	Possible. PNWB observed falcons foraging over Sargent Ranch during 2000 and 2001 surveys and the project site provides potential foraging habitat for this species; however, nesting habitat is absent from the project site.
Golden eagle (nesting & nonbreeding/wintering) (<i>Aquila chrysaetos</i>)	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Present. Woodlands on the project site provide only marginal nesting habitat for this species; however, golden eagles have been observed on numerous occasions foraging over the ranch and are presumed to forage on the project site on a regular basis.
Northern Harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Present. This species has been observed foraging over grasslands of the site and potential nesting habitat occurs adjacent to Sargent Creek.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Short-eared Owl (<i>Asio flammeus</i>)	CSC	Occurs in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	Possible. The site supports both suitable breeding and foraging habitat for this species
Long-eared Owl (<i>Asio otus</i>)	CSC	Found throughout California mainly in open woodlands, and riparian areas with adjacent grasslands for foraging.	Possible. The site supports both suitable breeding and foraging habitat for this species.
Burrowing Owl (<i>Athene cunicularia</i>)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Possible. Although no nesting activity has ever been observed, burrowing owls have been observed foraging and roosting on Sargent Ranch; and the project site provides potential breeding, roosting and foraging habitat for this species.
Yellow-breasted Chat (<i>Icteria virens</i>)	CSC	Found mainly in dense brush of open canopy riparian corridors or along ponds.	Unlikely. Although this species was documented on Sargent Ranch by PNWB; the project site provides no nesting habitat for this species, although it may rarely forage on the site.
Black Swift (nesting) (<i>Cypseloides niger</i>)	CSC	Nests on cliffs near the ocean or other aquatic habitat. Forages for insects over a variety of habitats.	Possible. Nesting habitat is absent on the site, but this species may forage over the site.
Vaux's Swift (nesting) (<i>Chaetura vauxi</i>)	CSC	Nests in coniferous and deciduous forests and forages for insects over a variety of habitats.	Possible. Nesting habitat is absent from the site, but this species may forage over the site.
Olive-sided Flycatcher (nesting) (<i>Contopus cooperi</i>)	CSC	Frequents coniferous forests, especially with tall standing dead trees. They prefer spruce, fir, balsam, pine, or mixed woodlands near edges and clearings, wooded streams, swamps, bogs, edges of lakes or rivers.	Unlikely. Olive-sided flycatchers have been observed on Sargent Ranch during surveys by PNWB; but breeding habitat on the project site is absent and foraging habitat is marginal for this species.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Possible. The site supports both suitable breeding and foraging habitat for the loggerhead shrike.
Western Red Bat (<i>Lasiurus blossevillii</i>)	CSC	Roosts primarily in trees in a wide variety of habitats; prefers a mosaic of habitats including open areas for foraging.	Possible. Trees on the site provide potential roosting habitat and the site provides potential foraging habitat for this species.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Pallid Bat (<i>Antrozous pallidus</i>)	CSC	Most common on dry, open habitats with rocks for roosting. May also use hollows of trees in addition to caves for roosting.	Possible. The site offers suitable foraging habitat for this species, and oak trees may provide cavities for roosting.
California Mastiff Bat (<i>Eumops perotis californicus</i>)	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	Possible. Suitable foraging habitat occurs on the site, but roosting habitat is absent.
San Francisco Dusky-footed Woodrat (<i>Neotoma fuscipes annectens</i>)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	Unlikely. Oak woodlands on the Phase I and II quarry sites provide marginal habitat for this species; however, no woodrat nests have ever been observed on Sargent Ranch by PNWB or LOA biologists.
Ringtail (<i>Bassariscus astutus</i>)	CP	Occurs mainly in riparian and heavily wooded habitats near water.	Unlikely. Although woodlands occur on the Phase I and II project areas, these woodlands would provide only marginal habitat for this species, although it may occur in riparian habitat of Tar Creek and rarely occur on areas of the site in proximity to Tar Creek.
American Badger (<i>Taxidea taxus</i>)	CSC	Occurs in grasslands, and open areas of scrubland and forests with friable soils that are uncultivated.	Likely. Grasslands of the project site provide suitable habitat for this species and it is known to occur on the greater Sargent Ranch property.

Present: Species observed on the sites at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the sites, but it could occur there from time to time.

Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.

Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE Federally Endangered
FT Federally Threatened
FPE Federally Endangered (Proposed)
FC Federal Candidate

CE California Endangered
CT California Threatened
CR California Rare
CP California Protected
CSC California Species of Special Concern

CNPS California Native Plant Society Listing
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 Plants about which we need more information – a review list
4 Plants of limited distribution – a watch list

Most of the special status plant and animal species listed in Table 3 are either absent or may occur rarely or occasionally onsite and sufficient information exists to evaluate the potential impacts the project may or may not have on them. However, a number of other special status species have been documented on Sargent Ranch in the immediate vicinity of the project site and

are assumed present or are considered likely or possibly to occur on the site. A few of these latter species warrant further discussion and include the California tiger salamander (CTS), California red-legged frog (CRLF), burrowing owl (BUOW), and American badger.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened.

Life History and Ecology. The California tiger salamander (CTS) is a large terrestrial salamander, with adults attaining a total length of over 8 inches (203 millimeters) [Stebbins 1951]. Dorsally, the background color appears to be jet black, and normally with an overlain pattern of white or yellow spots, or bars (Stebbins 1985; Petranka 1998). Adult California tiger salamanders breed from late November through February, following the onset of winter rains (Storer 1925; Barry and Shaffer 1994). Both males and females travel up to 1 mile (1.6 km) or more during nocturnal breeding migrations from subterranean refuge, or aestivation, sites (i.e., small mammal burrows) to egg deposition sites in long-lasting, rain-filled vernal pools (Twitty 1941; Loredó et al. 1961; Andersen 1968; Austin and Shaffer 1992).

Embryos of California tiger salamanders hatch in approximately 14-28 days after being laid and the resulting gilled, aquatic larvae [0.41-0.43 inches (10.5-11 mm) in length] require a minimum of about 10-12 weeks to complete development through metamorphosis (Storer 1925; Twitty 1941). Following metamorphosis (normally from early May through July), juveniles emigrate en masse at night into small mammal burrows or deep cracks in the soil, which they use as refugia during the hot summer and fall months (Shaffer et al. 1993; Loredó et al. 1996).

Anecdotal evidence indicates that salamanders have a high degree of site fidelity to their breeding ponds and also to the small mammal burrows they use for refugia (Shaffer et al. 1993). Sites used for reproduction are typically natural pools that fill with rainwater and artificial stock ponds; however, salamanders have also been observed to breed in springs, wells, artificial reservoirs, quarry ponds, man-made canals, and rarely, in the slack waters of oxbows in small- to medium-sized streams. Such sites may, or may not contain dense amounts of aquatic and streamside vegetation. The highest numbers of larvae appear to occur in aquatic habitats that are largely devoid of any vegetation and contain very turbid water. Salamanders may also turn up in certain man-made structures (e.g. wet basements, wells, swimming pools, underground pipes,

and septic tank drains), sometimes many years after their local breeding site has been destroyed by urbanization (Storer 1925; Pickwell 1947).

Juvenile and adult salamanders typically use the burrows of California ground squirrels and pocket gophers as underground refugia (Storer 1925; Jennings and Hayes 1994; Jennings 1996; Loredó et al. 1996) but may use a variety of burrows including cracks within the soil that may extend up to 15 feet (4.6 m) deep from the soil surface (Jennings, unpub. data). Juvenile and adult salamanders are especially common in situations where piles of concrete, rock, or other rubble are mixed with dirt and are located near breeding sites (Jennings, unpub. data). Findings from the limited research on the species suggest that 95% of a CTS population estivates within 2,000 feet of a breeding pond and that 99% of the breeding population estivates within 0.7 miles of a breeding pond; however, the USFWS considers suitable habitat within 1.3 miles of a known breeding pool to constitute potential upland habitat for the salamander.

Occurrence on the Site. PNWB confirmed the presence of breeding populations of CTS in three locations on Sargent Ranch during their 2000-2001 surveys (Figure 6). These include the pond/seasonal wetland complex in the very northeastern corner of the ranch near Tick Creek. The latter location was also confirmed to support introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis). The other two observances were within a pond adjacent to Sycamore Creek, a tributary of Tar Creek, and an isolated drainage in the western portion of the ranch near the Phase I and II quarry areas. CTS in the latter two locations appeared to be non-hybrid populations. Although the project site supports no breeding habitat for this species, based on the USFWS' 1.3 mile radius for estivation habitat, it appears the vast majority of grasslands of the ranch could be considered estivation habitat for this species, including grasslands of the project site; therefore, it is assumed that CTS estivate on the project site.

Potential CTS predators were found in other stock ponds of the ranch, including blue gill (*Lepomis macrochirus*) and bullfrogs (*Lithobates catesbeiana*), and this may be why CTS do not occur in these other ponds, although many, in years of normal and above-normal rainfall, would appear to support a suitable hydrologic regime to provide breeding habitat for this species.



LEGEND

On-site Species Observations

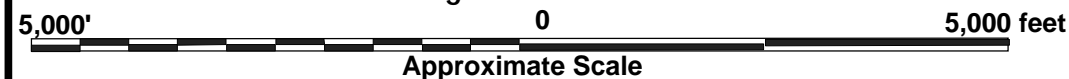
- CTS** California Tiger Salamander
- CRLF** California Red-legged Frog
- BF** Bullfrog
- ETS** Eastern Tiger Salamander
- WPT** Western Pond Turtle
- Fish** Fish

Habitats

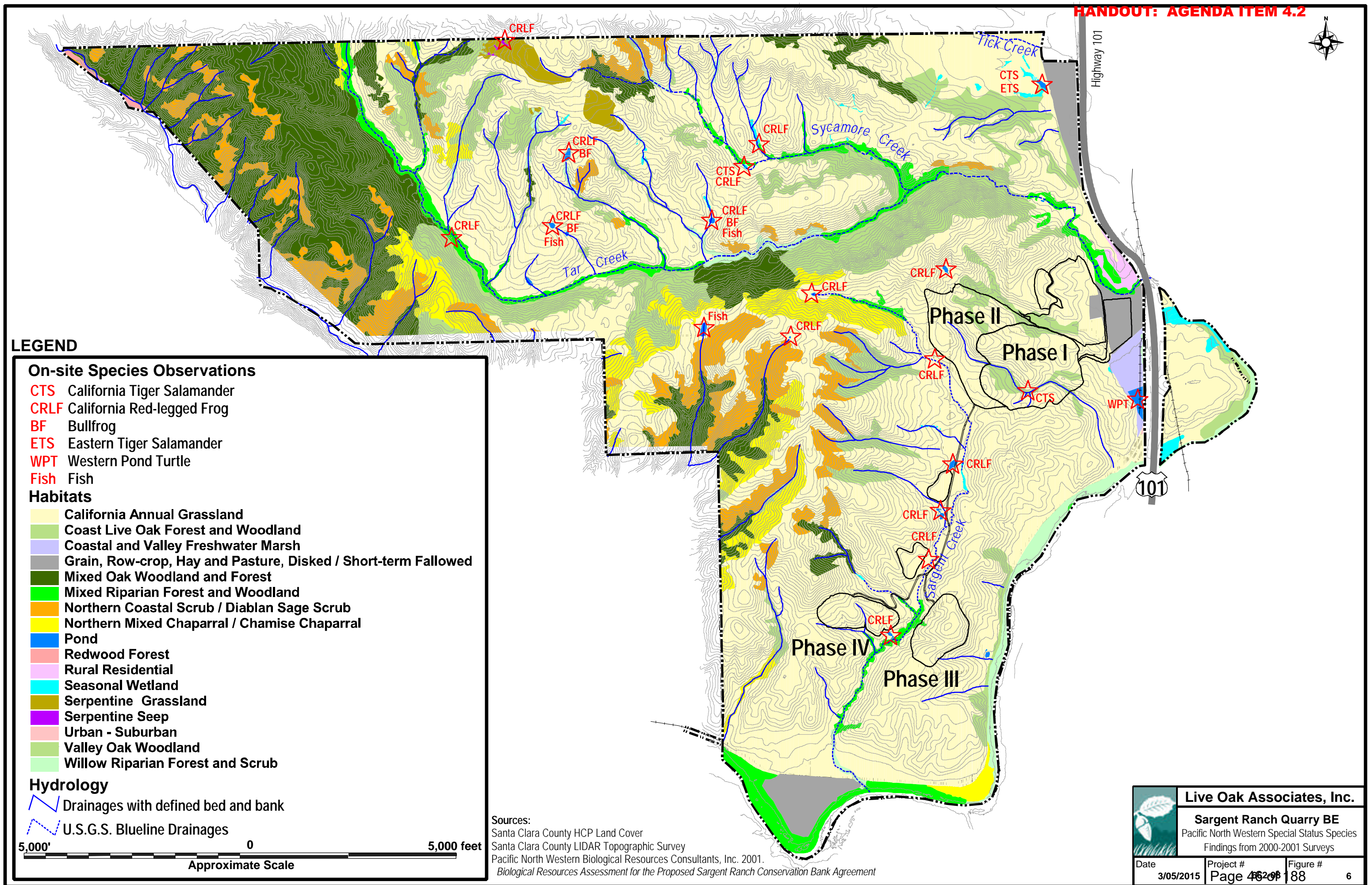
- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages



Sources:
 Santa Clara County HCP Land Cover
 Santa Clara County LIDAR Topographic Survey
 Pacific North Western Biological Resources Consultants, Inc. 2001.
 Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement



During the January 2014 site visit to confirm existing conditions on the ranch, ponds were completely dry or almost completely dry due to two years of drought conditions in the region. While it is highly unlikely that CTS breeding would have occurred over the past two years, per Dr. Jennings, the drought may benefit CTS by killing off fish and knocking down bullfrog populations, and therefore make these other ponds more suitable for CTS breeding habitat in the future (although bullfrogs would be expected to recolonize these ponds rather rapidly).

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.

Life History. The California red-legged frog (CRLF) is the largest native frog in California, with adults attaining a length of 3.4-5.4 inches (85-138 mm) snout-to-vent length (SVL) (Jennings and Hayes 1994). On the dorsal surface, the background color varies from brown to gray to reddish-brown, normally with some dark mottling peppered around spots with light-colored centers (Stebbins 1985). The distribution of reddish pigment is highly variable, but is usually restricted to the groin and undersurfaces of the thighs, legs, and feet (Jennings and Hayes 1994). This red coloration is not diagnostic for species identification. Two distinctive, prominent folds of skin (“dorsolateral folds”), run in a complete line from the rear of the eyes to the groin. The groin has a distinctly mottled pattern of black on a light-colored background. Juvenile frogs range from 1.5-3.4 inches (40-84 mm) SVL and have the same coloration as adults except that the dorsolateral folds are normally yellow or orange colored (Stebbins 1985). This coloration is distinct even at a distance. Larval frogs range from 0.6-3.1 inches (14-80 mm).

Adult California red-legged frogs have been observed breeding from late November through early May after the onset of warm rains (Storer 1925, Jennings and Hayes 1994). Male frogs typically attract females by emitting low short calls in small mobile groups of 3-7 individuals (Jennings and Hayes 1994). Females move toward the calling groups and amplex a male. Following amplexus, the females move to chosen oviposition sites where they attach an egg mass of 2,000-6,000 moderate-sized (2.0-2.8 mm diameter) eggs to an emergent vegetation brace such as tule stalks, grasses, or willow roots located just below the water surface (Storer 1925, Livezey and Wright 1947). Once laid, the egg mass will swell with water for about 24 hours, finally reaching the size of a softball. Males usually remain at the breeding sites for several

weeks after reproduction before moving to foraging habitats, while females immediately remove to foraging habitats.

California red-legged frog embryos hatch about 6-14 days following fertilization. The resulting larvae (8.8-10.3 mm) require 14-28 weeks to reach metamorphosis, which usually occurs between July and September, although there are scattered observations of overwintering larvae in perennial ponds such as at the arboretum at Golden Gate Park in San Francisco (Jennings, pers. obs). Tadpoles generally metamorphose at 65-85 mm total length (Storer 1925) and the newly emerged juvenile frogs are generally 25-30 mm SVL. Larvae are thought to graze on algae, but they are rarely observed in the field because they spend most of their time concealed in submergent vegetation, algal mats or detritus (Jennings and Hayes 1994). Post-metamorphic frogs grow rapidly feeding on a wide variety of invertebrates.

Males typically reach sexual maturity at 2 years and females at 3 years; however, frogs of both sexes may reach sexual maturity in a single year if resources are sufficient (Jennings, unpub. data). Conversely, frogs may take 3-4 years to reach maturity during extended periods of drought (Jennings and Hayes 1994). Based on limited field data, California red-legged frogs appear to live up to 10 years in the wild (Jennings, unpub. data). Adult frogs apparently eat a wide variety of animal prey including invertebrates, small fishes, frogs, and small mammals.

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historic range. Larvae, juveniles, and adult frogs have been collected from natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits (containing water), and large reservoirs (Jennings 1988). The key to the presence of frogs in these habitats is the presence of perennial (or near perennial) water and the general lack of introduced aquatic predators such as largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and bluegill (*L. macrochirus*), crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), and bullfrogs (*Rana catesbeiana*).

The habitats observed to contain the largest densities of red-legged frogs are associated with deep-water pools (27 inches [>0.7 meters] deep) with stands of overhanging willows (*Salix* spp.)

and an intermixed fringe of cattails (*Typha* spp.), tule (*Scirpus* spp.), or sedges (*Carex* sp.) (Hayes and Jennings 1988). However, California red-legged frogs have also been observed to inhabit stock ponds, sewage treatment ponds, and artificial (e.g., concrete) pools completely devoid of vegetation (Storer 1925; Jennings, *pers. comm.*). Continued survival of frogs in all aquatic habitats seems to be based on the continued presence of ponds, springs, or pools that are disjunct from perennial streams. Such habitats provide the continued basis for successful reproduction and recruitment year after year into nearby drainages that may lose frog populations due to stochastic events such as extreme flooding or droughts. Juvenile frogs are often observed sunning themselves during the day in the warm, surface-water layer associated with floating and submerged vegetation (Hayes and Tennant 1986). Adult frogs are largely nocturnal and are known to sit on stream banks or on the low-hanging limbs of willow trees over pools of water where they can detect small mammal prey (Hayes and Tennant 1986; Jennings and Hayes 1994). Adult red-legged frogs will move within the riparian zone from well-vegetated areas to pools of water to hydrate during periods of time when many of the streams are dry except for isolated pools (Rathbun et al. 1993). During wet periods (especially in the winter and early spring months), red-legged frogs can move long distances (e.g., 1 mile) between aquatic habitats, often over areas that are considered to be unsuitable for frogs (e.g., roads, open fields, croplands, etc.). Such activities can result in frogs ending up in isolated aquatic habitats well away from the nearest known frog populations.

Occurrence on the Site. CRLF have been confirmed to be present in ponds and tributaries of the Tick Creek, Tar Creek, Sycamore Creek, Pescadero Creek and Sargent Creek watersheds of the ranch during PNWB's 2000 and 2001 surveys and LOA's 2004 and 2005 surveys (Figure 6). During surveys in January 2014 to confirm existing conditions on the ranch; LOA Associate Herpetologist Dr. Mark Jennings confirmed that even with two years of drought conditions, and despite most of the creeks and ponds of the site being completely or nearly dry, refugia for CRLF and other terrestrial amphibians was present on the site within still persistent ponds in the Tar Creek drainage and also potentially within stock troughs. Similar to the situation for CTS, the drought conditions may have even temporarily favored CRLF by killing off CRLF predators within ponds of the site, such as non-native bullfrogs and non-native fish species; although,

again, bullfrogs would be expected to eventually re-colonize these ponds as previously discussed.

Although no CRLF have been directly observed on the project site, and the project site provides no suitable breeding habitat for this species, they have been found in numerous locations throughout the Sargent Creek and Tar Creek watersheds in the immediate vicinity of the project site, and individual frogs may occasionally forage on or move through the project site from time to time.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The western pond turtle is the only native aquatic, freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with 1) basking sites such as rocks and logs, 2) dense stands of submergent or emergent vegetation, 3) abundant aquatic invertebrate resources, 4) suitable nearby nesting sites, and 5) the lack of native and exotic predators (Bury 1972; Jennings and Hayes 1994; Bury and Holland, in press). This species can move along streams up to 3.1 miles (5 kilometers) in a short period of time, and they can tolerate at least 7 days without water (Jennings and Hayes 1994; Bury and Holland, in press).

Occurrence on the Site. The only observance of pond turtles on the greater ranch property was by PNWB biologists in a pond along the eastern boundary of the property near Highway 101, approximately 1500 feet southeast of the Phase I quarry site. This occurrence is not recorded in the CNDDB. There are only three other occurrences recorded in CNDDB within a three-mile radius: one mile north of Sargent Ranch, approximately 0.5 miles southeast of the ranch, and on just the other side of Highway 101 from the northeastern boundary of the ranch. Pond turtles have never been observed on the project site or in the Sargent or Tar Creek watersheds adjacent to the project site, although in wet years, these would appear to provide habitat for the species. However, the vast majority of the project site, outside of potential crossings for the Phase III and IV access road, does not support habitat for this species, although turtles may rarely occur in these areas during movements between suitable aquatic habitats.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Concern.

The burrowing owl is considered a California species of special concern. This decision was based on the fact that the burrowing owl's population levels were decreasing due to habitat destruction, roadside nesting (vulnerability to human interference) and indirectly as a result of ground squirrel poisoning.

The burrowing owl is a small, long-legged, semi-fossorial bird that averages a height of 9.5 inches, has an average wingspan of 23 inches, and weighs an average of 5.25 ounces. Burrowing owls are unique, as they are the only owl that regularly lives and breeds in underground nests. In California, these birds typically occur in the Central and Imperial Valleys, primarily utilizing ground squirrel burrows (or the burrows of other animals, e.g., badgers, prairie dogs and kangaroo rats) found in grasslands, open shrub lands, deserts, and to a lesser extent, grazing and agricultural lands. Burrowing owls in this region are typically found in lower elevations, and have strong site fidelity. Pairs have been known to return to the same area year after year, and some pairs are known to utilize the same burrow as the previous year.

Life History. Burrowing owls feed on various small mammals including deer mice, voles, and rats. They also prey on various invertebrates including crickets, beetles, grasshoppers, spiders, centipedes, scorpions and crayfish. Peak hunting periods occur around dusk and dawn.

The breeding season for the burrowing owl runs from February to August, with a peak between April and July. Clutch size varies from six to 12 eggs, with an average of seven to nine eggs. Females generally produce only one clutch per year. The female incubates the eggs for a month, while the male provides her food. The male continues to provide food during the brooding period. The young remain in their burrow for approximately two weeks after hatching, and become fully independent of their parents between eight to ten weeks of age. Burrowing owls are a fairly short-lived species, with an average life expectancy of 4.8 years. The oldest known wild burrowing owl was eight years and eight months old at the time of its death.

Burrowing owls are subject to predation by larger mammals (e.g., feral cats, bobcats, fox and coyotes). They are also susceptible to anthropogenic effects such as collisions with automobiles, and destruction or disruption of their nests, especially during the breeding season. The

burrowing owl may also be affected by ground squirrel eradication efforts. Burrowing owl numbers have been in decline over the past 30 to 40 years, in California. The decline in numbers is due mainly to habitat destruction by way of development and agricultural practices.

Occurrence on the Site. A burrowing owl was observed on the site during PNWB surveys immediately to the north of the wetland/pond complex near Tick Creek in the northeastern portion of the greater Sargent Ranch property although the owl was confirmed to be gone from that area by the nesting season. The resident rancher also reports seeing burrowing owls during the summer perched on serpentine rock outcrops in the northern portion of the ranch. Since this latter area does not support ground squirrel burrows, it is likely the owls were only foraging, and not roosting or nesting, in this location. Although burrowing owls have never been observed nesting on the site, the grasslands of the site would appear to provide good potential breeding habitat for this species.

American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The American badger is considered a California species of special concern. This decision was based on the fact that the badger's population levels were decreasing, mainly as a result of the conversion of open grassland habitats to agriculture and urban uses, trapping for fur, poisoning, and indirect poisoning as a result of consuming poisoned rodents. Rodents are the main food source for the badger.

The American badger measures 520 to 875 mm (20 to 34 inches) from head to tail, with the tail making up only about 1/5 of this length. Badgers weigh between 4 and 12 kg (approximately 9 to 26 pounds). The badger has a flattened body with short, stocky legs, and feet with strong claws that are up to 4-inches long. The fur on the back and flanks of the badger varies from brownish gray to a reddish color, with a buff colored underside. The face of the badger is distinct with several black patches on either side of its long snout. A white dorsal stripe extends back over the head from the nose. In northern populations, the dorsal stripe ends near the shoulders, while in southern populations it continues over the back to the rump. Male badgers are significantly larger than the females (Kurta, 1995; Long, 1999). Badgers are primarily solitary, coming together only for breeding purposes. Badgers are generally found throughout

California's arid grasslands and scrublands with friable soils from sea level to 12,000 feet, except in the northern North Coast area (Grinnell et al, 1937). Badgers are primarily nocturnal and are rarely seen during the day.

Life History. The main food source for badgers is ground squirrels and pocket gophers; however, they also are known to feed on a variety of other small- to medium-sized mammals including deer mice, voles, and rats; on plant roots; on reptiles and their eggs; and on birds and their eggs. Badgers are opportunistic foragers and their food sources shift seasonally with availability.

Badgers generally breed in late summer or early fall, experiencing a delayed implantation. Although the badger female is technically pregnant for seven months, actual gestation takes 6 weeks. Most cubs (pups or kits) are born in March or April and litter size ranges from 1 to 5 with an average of 3 (Long 1973). Females can breed as young as 4 to 6 months of age; however, their first litter usually occurs after one year of age. Males do not usually breed until after their second year. Badger cubs are born blind, furred and helpless (ibid). Their eyes open between 4 and 6 weeks of age, and they are nursed for approximately 2 months. After 2 months of age the mother starts supplementing their diet with solid food, usually small rodents. Most young disperse shortly after weaning, while some remain in their natal area until the next breeding season. They may roam up to 100 km (62 miles) to find their own home range. The average life of badgers in the wild is between 8 and 12 years.

The home range size for badgers varies by sex, season and prey base, with males having larger home ranges than females. One study indicated males had an average home range of 2,100 acres, while one radio collared female had a home range of 1,790 acres in summer, 131 acres in fall, and only 5 acres during the winter (Sargeant and Warner 1972). Another study indicated a home range size between 667 and 1,550 acres for both sexes (Lindzey 1978).

Badgers often hunt for prey by digging into fossorial mammal burrows. Coyotes have been known to follow badgers to take advantage of an easy meal as rodents are flushed from their burrows. Badgers may enlarge hunting burrows for sleeping and protection from weather. During the summer months, they dig new resting burrows nearly every day; these burrows are

usually only a few feet deep. Their natal dens are more permanent and may be as much as 30 feet long and 10 feet deep (Banfield 1974).

Badgers are ferocious animals and have few natural predators, though they can be preyed upon by bear (*Ursus americanus*), bobcat, and cougar. As discussed above, the main threat to badgers comes from anthropogenic effects.

Occurrence on the site. Habitat is present on the project site and this species has been observed on the ranch during PNWB surveys and by the resident rancher.

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.4 of this report for additional information.

A wetland delineation was conducted on the entire Santa Clara County portion of the Sargent Ranch property in 2005 which included the project site. Per the delineation, seasonal drainage channels with a defined bed and bank and evidence of an Ordinary High Water mark were found to occur on all phases of the project site. None of these drainages supported wetland or riparian vegetation in 2005; however, they may be considered jurisdictional by USACE and RWQCB to the extent of the Ordinary High Water mark on opposing banks and may also be considered jurisdictional by CDFW to the top of bank. No other potential waters of the U.S. or state were identified on the project site during site surveys. The 2005 delineation was never submitted to and verified by USACE; therefore, the extent to which the USACE may claim jurisdiction over hydrologic features on the project site could not be fully determined at the time this report was prepared. As the prior delineation field survey is now 10 years old, it may also not reflect existing conditions with regard to jurisdictional waters on the site and a new delineation is warranted.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. could potentially replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to *Guide to the California Environmental Quality Act*, “Significant effect on the environment” is interpreted as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they will:

- have a substantial adverse effect, the directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site;
- reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a “mandatory findings of significance” if “the project has the potential to subsequently degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal “endangered species” legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status.” Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the “take” of a

listed species. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Wildlife Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Wildlife Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

3.2.4 The Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or

sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

3.2.5 Bats

Section 2000 and 4150 of the California Fish and Wildlife Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering”.

3.2.6 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” (hereafter referred to as “jurisdictional waters”) subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S. Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System

(NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife (CDFW) has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

3.2.7 Santa Clara County Tree Ordinance

Santa Clara County has relevant ordinances in the Municipal Code under Division C16 “Tree Preservation and Removal”.

“it shall be unlawful for any person to remove any protected tree on any private or public property in designated areas of the County without having first obtained an administrative permit [(a) through (e) below] from the County Planning Office or an encroachment permit [(f) below] from the Department of Roads and Airports.”

“A protected tree shall consist of any of the following:

(a) Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the County:

- (1) Parcels zoned "Hillsides" (three acres or less);
- (2) Parcels within a "-d" (Design Review) combining zoning district;
- (3) Parcels within the Los Gatos Hillside Specific Plan Area.

(b) Any tree within the "-h1" Historic Preservation zoning district for New Almaden having a main trunk or stem measuring six inches or more in diameter (18.8 inches or greater in circumference) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 12 inches in diameter (37.7 inches in circumference) of all trunks at 4.5 feet above ground. For parcels having a base zoning district of "HS, Hillside" within the "-h1" combining zoning district, this provision supersedes C16-3(a)(1).

- (c) Any heritage tree, as that term is defined in Section C16-2.
- (d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division.
- (e) Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision.
- (f) On any property owned or leased by the County, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceeds 20 feet in height.
- (g) Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.”

3.2.8 Heritage Trees in Santa Clara County

Under Municipal Code Section C16-12, a Heritage Tree is defined as:

“Any tree which, because of its history, girth, height, species, or other unique quality, has been recommended by the Historical Heritage Commission (HHC) and found by the Board of Supervisors to have a special significance to the community shall be designated a heritage tree. Such trees shall be listed individually on the heritage resource inventory, adopted by resolution of the Board of Supervisors. Such resolution may be amended as necessary to add or delete trees from the inventory.”

A permit is required for the removal of Heritage Trees.

3.2.9 The Santa Clara Valley Habitat Conservation Plan

Six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill) along with two wildlife agencies, the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, prepared and adopted the multi-species Santa Clara Valley Habitat Conservation Plan (SCVHP) which primarily covers southern Santa Clara County, as well as the City of San Jose with the exception of the bayland areas. The SCVHP addresses listed species

and species that are likely to become listed during the plan's 50-year permit term. The eighteen covered species include nine plants and nine animals. The animal species covered include, but are not limited to, the California tiger salamander, California red-legged frog, western pond turtle, and western burrowing owl. Most of the nine plant species covered are species that are endemic to serpentine soils. The SCVHP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value. Funding sources for the SCVHP include development fees based on land cover types (natural, agricultural or small vacant sites surrounded by urban development). Additional fees are charged based on the occurrence of certain sensitive habitat types such as serpentine grasslands, streams, ponds and wetlands.

It should be noted that only certain development activities are covered by the SCVHP; and covered activities do not include the development of quarries. However, the quarry has been designed to be consistent with SCVHP goals and conditions.

3.2.9.1 SCVHP Development Fees

Chapter 9 of the SCVHP identifies fees that may be required by development projects for their development area (considered the project site plus a 50-foot buffer) based on the Fee Zone(s) within which the development area occurs, along with additional Nitrogen Deposition Fees and specialty fees for sensitive habitats such as wetlands and streams. The current (2014) SCVHP development fee schedule is provided below.

SCVHP 2014 Development Fees	
Fee Zones	Fees
Fee Zone A (Ranchlands and Natural Lands)	\$17,028 per acre
Fee Zone B (Agricultural and Valley Floor Lands)	\$11,806 per acre
Fee Zone C (Small Vacant Sites Under 10 Acres)	\$4,313 per acre
Nitrogen Deposition Fees and Specialty Fees	Fees
Nitrogen Deposition	\$3.98 per new daily vehicle trip or \$34 per new single-family residential unit

SCVHP 2014 Development Fees	
Fee Zones	Fees
Willow Riparian Forest and Mixed Riparian	\$142,838 per acre
Central California Sycamore Woodland	\$260,898 per acre
Freshwater Marsh	\$175,159 per acre
Seasonal Wetland	\$383,238 per acre
Pond	\$156,755 per acre
Streams	\$601 per linear foot
Serpentine	\$55,410 per acre
Burrowing Owl	\$51,568 per acre

3.2.9.2 Land in Lieu of Fees

The SCVHP provides for the option of protecting conservation lands in lieu of fees. Land in lieu of fees may include lands coordinated with the County Parks, Open Space Authority, or other organization. Wetland fees cannot be waived, however, restoration or creation, management, and monitoring of onsite wetlands, streams, ponds, or riparian for mitigation may replace some or all wetland fees for a site if approved by the Implementing Entity. Land in lieu of fee must be approved by the Implementing Entity for the Santa Clara Valley Habitat Conservation Plan, CDFW and USFWS. If approved, land in lieu of fee will become part of the Reserve System under the SCVHP once success criteria have been met (for restoration projects). Off-site conservation lands in lieu of fee may be acceptable if both the Implementing Entity and the Wildlife Agencies (CDFW and USFWS) approve the proposed conservation lands. It is important to note that land in lieu of fees only off-sets costs related to land fees, and does not include an off-set for management fees. The Implementing Entity has approved a Draft Resolution identifying which fees are offset by ‘land in lieu of fee’ and which fees cannot be offset by dedication of land. Fees that are offset include land cover, serpentine, burrowing owl, and/or temporary impact fees. Fees that cannot be offset include land management or monitoring, plan preparation, endowment, wetland, nitrogen deposition, and/or “any non-development fee charge including, but not limited to, administrative charges, processing, and evaluation charges, and other charges such as the Participating Special Entity (PSE) charge. The

dollar total of fees that cannot be offset (Land Management or monitoring, Plan Preparation and Endowment) is approximately 35 percent of a site's total land cover fees.

3.2.9.3 Conditions on Covered Activities

The SCVHCP sets forth twenty conditions for covered activities under the SCVHCP.

Potentially applicable conditions for this project can be found in Chapter 6 of the SCVHCP (Appendix D) and are listed below:

- **Condition 1 (page 6-7). Avoid Direct Impacts on Legally Protected Plant and Wildlife Species-** Condition 1 instructs developers to avoid direct impacts on legally protected plant and wildlife species, including federally endangered Contra Costa goldfields and fully protected wildlife species including the golden eagle, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and ring-tailed cat. Several of these species have either been documented on the Sargent Ranch property and likely to occur on or forage over the project site, or they have not been observed, but the project site provides potential habitat for them (golden eagle, bald eagle, American peregrine falcon, white-tailed kite). Condition 1 also protects bird species and their nests that are protected under the Migratory Bird Treaty Act (MBTA); additionally, golden eagles and bald eagles are protected under the Bald and Golden Eagle Protection Act. Additionally, page 6-94 and Table 6-8 identify required surveys for breeding habitat of select covered wildlife species; of the species noted, the project will likely be required to conduct species-specific surveys for the western burrowing owl.
- **Condition 2 (page 6-9). Incorporate Urban-Reserve System Interface Design Requirements-** Condition 2 provides design requirements for the urban-reserve system interface. Some of the design requirements included in Condition 2 are installing non-permeable fences between urban and reserve areas, fencing public roads that run adjacent to reserve areas, minimizing the length of shared boundaries between urban and reserve areas, outdoor lighting limitations, and landscaping requirements.
- **Condition 3 (page 6-12). Maintain Hydrologic Conditions and Protect Water Quality-** Condition 3 applies to all projects. This condition identifies avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality during construction and operation. A complete list of aquatic avoidance and minimization measures can be found in Table 6-2 of the plan.
- **Condition 4 (page 6-14). Avoidance and Minimization for In-Stream Projects-** Condition 4 minimizes impacts on riparian and aquatic habitat through appropriate design requirements and construction practices and provides avoidance and minimization measures for in-stream projects that may impact stream morphology, aquatic and riparian habitat, flow conditions, covered species, natural communities, and wildlife movement.

- **Condition 5 (page 6-18). Avoidance and Minimization Measures for In-Stream Operations and Maintenance-** Condition 5 provides avoidance and minimization measures for in-stream operations and maintenance activities, which includes, but is not limited to trail, bridge, road, and culvert maintenance, bank stabilization, removal of debris, and vegetation management.

Avoidance and minimization measures for Conditions 3-5 can be located in Table 6-2 of the SCVHP; these measures relate to stormwater runoff, in-stream channel and floodplain impacts, vegetation control and/or maintenance, materials a project should and should not use, landscaping and revegetation, free-span bridges at stream crossings, culverts, trails, levees, erosion control, and construction requirements and timing.

- **Condition 6 (Page 6-21) Design and Construction Requirements for Covered Transportation Projects.** Condition 6 provides requirements for rural development design, construction, and post-construction. Types of projects that Condition 6 includes highway projects, mass transit projects, roadway projects and interchange upgrades, road safety and operational improvements, and dirt road construction.
- **Condition 7 (page 6-28) Rural Development Design and Construction Requirements.** Condition 7 provides requirements for development design and construction of new development outside of the urban service area including requirements relating to site hydrology, vineyards, private rural roads, vegetation management, soils, and lighting.
- **Condition 8 (page 6-35) Implement Avoidance and Minimization Measures for Rural Road Maintenance.** Condition 8 provides requirements for rural roads, road median, and barrier maintenance including requirements regarding riparian setbacks, erosion measures, herbicide and pesticide use, seasonal restrictions, mower cleaning, revegetation, ground-disturbing road maintenance, and flow lines.
- **Condition 9 (page 6-37) Prepare and Implement a Recreation Plan.** Condition 9 requires providing public access to all reserve lands owned by a public entity; each reserve land must provide a recreation plan.
- **Condition 10 (page 6-42) Fuel Buffer.** Condition 10 provides requirements for fuel buffers between 30 and 100 feet of structures. Requirements include measures relating to fuel buffers near structures and on reserve lands; the most notable measure is the requirement for nesting bird surveys prior to any fuel buffer maintenance during the nesting season.
- **Condition 11 (page 6-44) Stream and Riparian Setbacks.** Condition 11 provides requirements for stream and riparian setbacks; as the development area is outside the Urban Service Area, stream setbacks measured from the top of the stream bank should be 35 to 250 feet depending on the category rating of the stream and the slope class. Setbacks for Category 1 streams with 0-30% slopes should be at least 150 feet, and with >30% slopes should be at least 200 feet. Category 2 streams should have a setback of 35 feet.

- **Condition 12 (page 6-56) Wetland and Pond Avoidance and Minimization.** Condition 12 provides measures to protect wetlands and ponds, including planning actions, design, and construction actions. The project would complete a wetland delineation to confirm the distribution and condition of the wetlands onsite.
- **Condition 13 (page 6-58) Serpentine and Associated Covered Species Avoidance and Minimization.** Condition 13 requires surveys for special status plants and the Bay checkerspot butterfly as well as its larval host plant in areas that support serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. Fees apply for impacts to serpentine habitat.
- **Condition 14 (page 6-60) Valley Oak and Blue Oak Woodland Avoidance and Minimization.** Condition 14 provides requirements for project planning and project construction, including avoidance of large oaks, guidance on irrigation near oak trees, and a buffer around the root protection zone, roads and pathways within 25 feet of the dripline of an oak tree, trenching, and pruning activities.
- **Condition 15 (page 6-62) Western Burrowing Owl.** Condition 15 requires preconstruction surveys for burrowing owls in appropriate habitat prior to construction activities, provides avoidance measures for owls and nests in the breeding season and owls in the non-breeding season, and requirements for construction monitoring.
- **Condition 16 (page 6-68) Least Bell's Vireo.** Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 17 (page 6-69) Tricolored Blackbird.** Condition 17 requires preconstruction surveys in appropriate habitat for the tricolored blackbird prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 18 (page 6-71) San Joaquin Kit Fox.** Condition 18 requires preconstruction surveys in appropriate habitat for the San Joaquin kit fox prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 19 (page 6-74) Plant Salvage when Impacts are Unavoidable.** Condition 19 provides salvage guidance and requirements for covered plants.
- **Condition 20 (page 6-76) Avoid and Minimize Impacts to Covered Plant Occurrences.** Condition 20 provides requirements for preconstruction surveys for appropriate covered plants (per habitat).

3.2.9.4 SCVHP Biological Goals, Objectives, and Conservation Actions

Tables 5-1a, b, c, and d of the SCVHCP provides information about the biological goals, objectives, and conservation actions of the SCVHCP including landscape level goals (Table 5-

1a), natural community level goals (Table 5-1b), wildlife goals (Table 5-1c), and plant goals (Table 5-1d) (ICF International 2012).

3.3 ENVIRONMENTAL IMPACT/MITIGATION

The potential impacts to sensitive biological resources resulting from the development of the quarry, and mitigations that would be required to lessen these impacts to a less-than-significant level are discussed further below.

3.3.1 Conflict with an Adopted Habitat Conservation Plan

Potential Impact. The project site is within the area covered by the Santa Clara Valley Habitat Conservation Plan (SCVHP) (ICF 2012) as already discussed above; however, quarry projects are not considered covered activities under the SCVHP, and therefore the project will not be subject to the fees and conditions of the SCVHP directly. Nonetheless, we have used the SCVHP as a framework for our evaluation and mitigation of biological impacts, and have ensured that mitigations are consistent with the goals and objectives of the SCVHP. A more detailed discussion of the SCVHP including all conditions on covered activities is provided in **Section 3.2.9** of this report, above. The SCVHP requires the payment of development fees based on land cover types within the development area for covered activities. For projects occurring outside the SCVHP's Urban Service Area (USA), the development area includes the project footprint plus a 50-foot buffer for permanent impacts. Per the SCVHCP Geobrowser, the approximately 300-acre project site primarily consists of lands considered to be Zone A Lands (Ranchlands and Natural Lands) and the current 2014 fees for Zone A lands are \$17,028 per acre. Additionally, the project site supports drainages that would be considered Category 2 streams under the SCVHP; and the access road for Phase III and IV will traverse Sargent Creek, which is considered a Category 1 stream; and the Phase I quarry area occurs in proximity to Tar Creek, also considered a Category 1 stream. The SCVHP requires that projects be set-back 35 feet from Category 2 streams and 150 feet from Category 1 streams to avoid stream specialty fees. The current 2014 specialty fees for these stream habitats are \$601 per linear foot.

In lieu of the payment of some or all development fees, the SCVHP Entity may accept "land in-lieu" in exchange for development fees and specialty fees for impacts to all land cover types with the exception of wetland specialty fees. The decision to accept land-in-lieu is currently

negotiated on a case by case basis with the SCVHCP Entity. In addition to the payment of fees or provision of “land in lieu”; the project would be required to comply with SCVHCP conditions that are applicable to the project.

Mitigation. Although the project would not be considered a covered activity under the SCVHP and is not subject to the fees and conditions of the plan, aspects of the project have been designed to be consistent with the goals and objectives of the plan. For instance, the project includes minimum 150 foot setbacks from Tar Creek and Sargent Creek, with the exception of the Phase III and IV access road crossings of Tar Creek. In situations where the project will result in a significant impact on biological resources, mitigations are provided further on in this section, such as the establishment of a conservation easement and pre-construction surveys that would be consistent with requirements and conditions of the SCVHP.

3.3.2 Potential Impacts to California Tiger Salamander Habitat and Individuals

Potential Impact. The presence of the California tiger salamander (CTS) on the Sargent Ranch property is well-documented. Grasslands occurring within all four phases of the project provide suitable estivation habitat for this species and it is assumed to estivate in these habitats on the site; therefore, the project would result in the loss of estivation habitat and in harm or mortality to individual CTS estivating on the site during project implementation. Additionally, although CTS have not been confirmed to breed in ponds that are immediately adjacent to the proposed Phase III and Phase IV road and the northernmost Phase III topsoil stockpile, these ponds appear to support a suitable hydrologic regime to function as breeding habitat for this species, and the proximity of these proposed project features to these ponds could result in indirect impacts to this species and to California red-legged frogs which are known to breed in these features, such as through degradation of water quality and noise disturbance. Vehicle traffic on the road may also result in harm or mortality to individual CTS during movements between breeding and estivation habitats. The direct loss of estivation habitat and the loss of individual CTS, as well as indirect impacts on potential breeding habitat for this species, would be considered a significant impact under CEQA. Mitigations are provided below to reduce these impacts to a less-than-significant impact.

Mitigation. These measures would reduce impacts to CTS to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHP.

The primary approach to mitigate impacts to CTS would be based upon 1) avoidance of wetland and other aquatic resources to the maximum extent possible, 2) implementation of minimization measures, 3) compensation for impacts to suitable upland and aquatic habitats via the preservation of open space lands that contain similar or higher quality suitable upland and aquatic habitats.

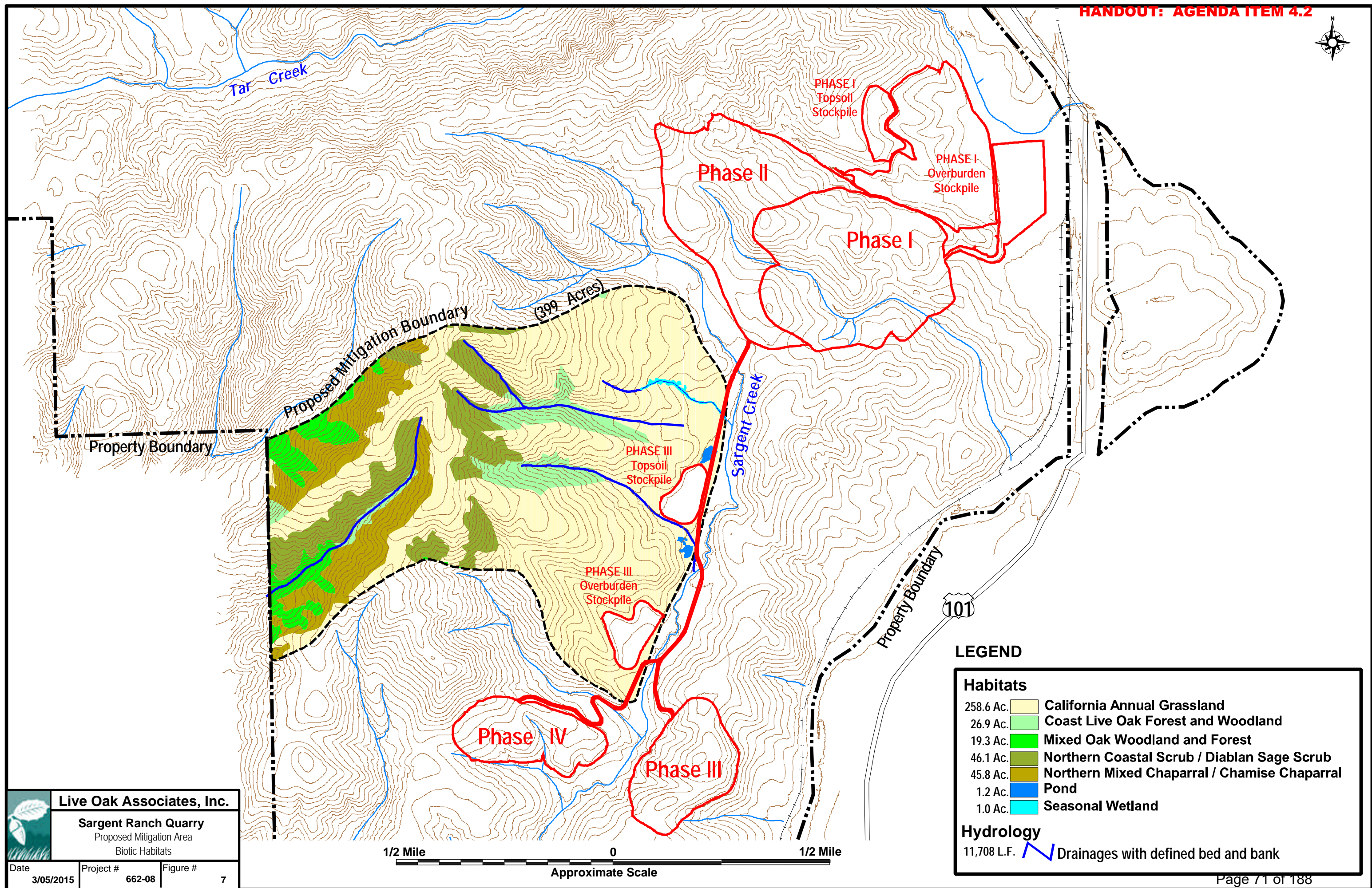
Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CTS, the project has been designed in ways that generally avoid direct impacts to riparian and aquatic habitats, and immediately adjacent upland habitats. For instance, no seasonal wetlands or ponds providing potential breeding habitat for this species will be directly impacted, and the project includes setbacks from aquatic resources of the site including a minimum 150 foot setback from Tar Creek and Sargent Creek (with the exception of the Sargent Creek access road crossings). As currently designed, however, potential indirect impacts may occur to ponds that provide potential suitable breeding habitat, and to the extent possible, Phase III and Phase IV roads and stockpiles should be set back minimum of 100 feet from these ponds. However, the avoidance of CTS estivation habitat will not be possible while meeting project objectives.

Minimization. The project will be designed, built, and operated in ways that minimize both direct and indirect impacts to CTS. Implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any construction related to the development of the quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist will train all construction personnel regarding habitat sensitivity, identification of special status species potentially occurring on the site, and required practices.
- Pre-construction surveys will be conducted to ensure that CTS are absent from the construction area. If CTS are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CTS from moving into these areas.

- A biological monitor will be present onsite during particular times of construction to ensure no CTS are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CTS during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Compensation. The applicant has identified lands on the Sargent Ranch property for preservation and dedication to the SCVHP Habitat Agency or other public or private land conservation entity to mitigate for a loss of habitat for special status species on the project site. These conservation lands provide similar or higher quality habitat values for CTS, CRLF and other special status species that may be impacted by the project, including 1.2 acres of ponds and 1.0 acres of seasonal wetlands that provide known breeding habitat for CRLF, and provides potentially suitable breeding habitat for CTS, adjacent to and to the west of Sargent Creek; and a mosaic of other habitats including approximately 260 acres of grasslands that provide estivation habitat for CTS, almost 50 acres of coast live oak forest and mixed oak forest, and approximately 90 acres of scrub and chaparral habitats. Additionally, almost 12,000 linear feet of ephemeral drainages occur on the conservation lands that would be considered Category 2 streams under the HCP. These lands have over one mile of frontage along Sargent Creek, an important north-south corridor for native wildlife, and links open space lands to the west and east, therefore should continue to facilitate movement of wildlife across upland habitats from east to west. Lands that are proposed for preservation are depicted in Figure 7 and habitats present within the proposed conservation easement area, along with acreages, are detailed in Table 4. In addition, the project proponent will define and provide for a financial mechanism such as a non-wasting endowment that funds the management of the preserved lands into perpetuity.



LEGEND

Habitats

258.6 Ac.		California Annual Grassland
26.9 Ac.		Coast Live Oak Forest and Woodland
19.3 Ac.		Mixed Oak Woodland and Forest
46.1 Ac.		Northern Coastal Scrub / Diablan Sage Scrub
45.8 Ac.		Northern Mixed Chaparral / Chamise Chaparral
1.2 Ac.		Pond
1.0 Ac.		Seasonal Wetland

Hydrology

11,708 L.F. Drainages with defined bed and bank

Live Oak Associates, Inc.

Sargent Ranch Quarry
Proposed Mitigation Area
Biotic Habitats

Date	Project #	Figure #
3/05/2015	662-08	7

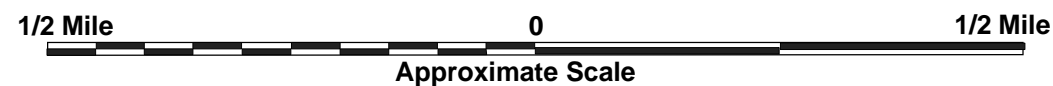


Table 4. Habitats of the Conservation Easement Area

Habitats	Acreages	Value
California Annual Grassland	258.6	California tiger salamander estivation habitat; potential burrowing owl habitat; American badger habitat; foraging habitat for many special status birds.
Coast Live Oak Forest and Woodland	26.9	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Mixed Oak Woodland and Forest	19.3	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Coastal Scrub/Diablan Sage Scrub	46.1	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Mixed Chaparral/Chamise Chaparral	45.8	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Pond	1.2	Known California red-legged frog breeding habitat; potential California tiger salamander breeding habitat. Seasonal source of drinking water for many common and special-status animals. USACE and RWQCB jurisdictional habitat.
Seasonal Wetland	1.0	Known CRLF breeding habitat; potential CTS breeding habitat. Seasonal source of drinking water for many common and special-status animals. USACE and RWQCB jurisdictional habitat.
Total	398.9	
Creeks, Streams and Drainages	Linear Feet of Channel	Value
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	11,708	Potential CDFW, USACE and RWQCB jurisdictional habitat.

Regulatory issues. In addition to mitigating for project impacts to CTS under CEQA, the applicant would need to comply with provisions of the federal and state Endangered Species Acts and would need to seek take authorization from both the USFWS and CDFW for project-related losses as required by law. To obtain a federal take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation through the USACE) or through the HCP process (i.e., Section 10 consultation).

3.3.3 Potential Impacts to California Red-Legged Frog Habitat and Individuals

Potential Impact. The presence of CRLF has been confirmed throughout the greater Sargent Ranch property in close proximity to the proposed quarry sites. The proposed Phase III and Phase IV road along the west side of Sargent Creek, as well as the northernmost Phase III topsoil stockpile occur immediately adjacent to ponds within the conservation easement area that are known to provide CRLF breeding habitat. Indirect impacts to these sensitive habitats could

include impacts to water quality and disturbance as a result of noise; and could also result in harm or mortality to individual frogs as a result of vehicle traffic. The project would also result in the direct loss of suitable upland habitat for this species in the form of grassland and woodland habitat; and could result in harm or mortality to individual CRLF should they occur in these habitats during project implementation. Additionally, as indicated above, riparian habitats associated with Sargent and Tar Creeks occur in proximity, i.e. within 200 feet, of project footprints. These riparian habitats likely provide foraging and movement habitat for CRLF. Direct and indirect impacts to CRLF breeding, foraging and movement habitat, as well as harm or mortality to individual CRLF, would be considered a significant impact under CEQA.

Mitigation. Implementation of the following mitigation measures would reduce impacts to CRLF to a less-than-significant level.

The primary approach to mitigate impacts to CRLF would be based upon 1) avoidance of riparian and aquatic resources of the site to the maximum extent possible, 2) implementation of minimization measures, 3) compensation for impacts to suitable upland and aquatic habitats via the preservation of open space lands that contain higher quality suitable upland and aquatic habitats.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CRLF, the project should be designed in ways that avoid impacts to riparian and aquatic habitats, and their immediately adjacent upland habitats, to the maximum extent practicable. Except for the Phase III and Phase IV access road which will traverse Sargent Creek in three locations, the project as currently designed avoids direct impacts to riparian resources of the site; and the project avoids indirect impacts to such habitat via a minimum of a 150 foot setback from Sargent and Tar Creeks. To avoid indirect impacts to sensitive CRLF breeding habitat that is proposed for preservation in the conservation easement area, the Phase III and Phase IV road and topsoil stockpiles should be set back a minimum of 100 feet from these areas, as already discussed previously in Section 3.3.2 .

Minimization. The project should be designed, built, and operated in ways that minimize both direct and indirect impacts to the CRLF. Implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any

construction of quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist approved should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that CRLF are absent from the construction area. If CRLF are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CRLF from moving into these areas.
- A biological monitor should be present onsite during particular times of construction to ensure no CRLF are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CRLF during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Compensation. Compensation measures included in Mitigation Measure 3.3.2 for CTS would also compensate for a loss of suitable habitat for CRLF.

Regulatory issues. In addition to mitigation for potential project impacts to CRLF under CEQA, the applicant would need to comply with provisions of the federal Endangered Species Act and would need to seek take authorization from the USFWS for project-related losses as required by law. To obtain a take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation, usually through the USACE or the Bureau of Land Management) or through the HCP process (i.e., Section 10 consultation).

3.3.4 Potential Impacts to Western Pond Turtles

Potential Impact. Western pond turtles (WPT) have been documented in the pond approximately 1500 feet southeast of Phase I of the project. Although there are no known occurrences of WPT within Sargent or Tar Creeks, in wet years, both of these creeks may provide foraging and movement habitat for this species. Although the project has been designed to be set back 150 feet from these aquatic resources, the access road for Phase III and IV of the project will require construction of crossings over Sargent Creek. Should this work commence

during the dry season when Sargent Creek is dry, then it would not be expected that turtles would be in or near Sargent Creek; however, any activities within 150 feet of the creek during the wet season when the creek is inundated could result in harm or mortality to individual western pond turtles should they be present, and this may be considered a significant impact under CEQA.

Mitigation Measure 3.3.4. Implementation of the following measures would reduce impacts to WPT to a less-than-significant level.

Avoidance, minimization and compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF, respectively, would also reduce impacts to individual WPT to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHP.

3.3.5 Potential Impacts to Burrowing Owls

Impact. Burrowing owls have been observed foraging on the greater Sargent Ranch property; however, no nesting activity has ever been observed. The project site provides potential foraging, roosting, and nesting habitat for this species. Project activities could result in a loss of habitat for this species and in impacts to individual owls should they nest or roost on the site and this would be considered a potentially significant impact. Construction activities that adversely affect the nesting success of BUOW or result in mortality of individual owls that are nesting or roosting on the site would constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

Mitigation Measure 3.3.5. Implementation of the following measures would reduce impacts to BUOW habitat and to individual BUOW to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHCP.

- Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of BUOW foraging, roosting and nesting habitat.
- The following additional measures have been taken from SCVHP Condition 15 to ensure that individual BUOW are not harmed or killed as a result of project activities, and to

ensure that the project is consistent with the goals and objectives of the SCVHP, which considers the burrowing owl a “no take” species:

SCVHP Condition 15. *Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity. To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.*

Should the pre-construction survey determine the presence of burrowing owls on the site during the pre-construction surveys, then the following avoidance measures will be implemented as per Condition 15 of the SCVHP:

Avoidance During the Breeding Season. *If evidence of western burrowing owls is found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the project proponent develops an avoidance, minimization, and monitoring plan that will be reviewed by the Implementing Entity and the Wildlife Agencies prior to project construction based on the following criteria.*

- *The Implementing Entity and the Wildlife Agencies approves of the avoidance and minimization plan provided by the project applicant.*
- *A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.*

- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.*

Avoidance During the Non-Breeding Season. *During the non-breeding season (September 1–January 31), the project proponent will establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites.*

- *A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.*
- *If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.*

Construction Monitoring. *Based on the avoidance, minimization, and monitoring plan developed (as required in the above section), during construction, the non-disturbance buffer zones will be established and maintained if applicable. A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.*

Passive Relocation. *Passive relocation would not be allowed under the Plan until the positive growth trend described in Section 5.4.6 is achieved. Once this occurs, passive owl relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other measures described in this condition do not allow work to continue. Passive relocation would only be proposed if the burrow needed to be removed, or had the potential of collapsing (e.g., from construction activities), as a result of the covered activity.*

If passive relocation is eventually allowed, a qualified biologist can passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow

entrances. These doors will be in place for 48 hours to ensure owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools. During excavation an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trapping owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies during Plan implementation.

Exceptions to Passive Relocation Prohibition. *Due to the relatively low numbers of burrowing owls in the study area, it is not expected that the prohibition of passive relocation will result in project delays. However, it is possible that a covered activity could not proceed due to avoidance measures for burrowing owl in this condition if owls continually persist on a site where avoidance is not feasible. In such cases, a project proponent may apply for an exception based on the following process. For this condition, the term exception means an allowance to conduct passive relocation of burrowing owls during the non-breeding season only when this activity is not otherwise allowed. This exception process is necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, other portions of this condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the condition.*

The measures above designed to ensure no harm or mortality occur to individual BUOW would be applicable to each new phase of the project. Full implementation of the measures identified above would mitigate impacts to the burrowing owl to a less-than-significant level.

3.3.6 Disturbance to Nesting Raptors and Nesting Migratory Birds

Potential Impact. Habitats within the footprints of the proposed quarry project provide nesting and/or foraging habitat for a number of special status and migratory birds, including raptors. Additionally, there are known occurrences of special status birds such as tri-colored blackbird in very close proximity to the site, although the site itself lacks suitable nesting habitat for this species. Project activities including noise, ground disturbance and vegetation removal that commence during the nesting season (February 1 through August 31) could result in adult birds within the project site and its immediate vicinity abandoning their nests and result in mortality to their unfledged young. This would constitute a violation of state and federal law and would be considered a significant impact under CEQA.

Mitigation Measure. Implementation of the following mitigation measures would reduce impacts to nesting birds to a less-than-significant level.

To the maximum extent practicable, trees and other vegetation planned for removal should be removed during the non-breeding season (September 1 through January 31). If it is not possible to avoid tree or vegetation removal or other disturbances during the breeding season (February 1 through August 31), then a qualified biologist will conduct a pre-construction survey for tree- and ground-nesting raptors and migratory birds in all potential nesting habitat within the construction footprint and within 250 ft. of the footprint. This survey should be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the later part of the breeding season (May through August). If nesting raptors or migratory birds are detected on the site during the survey, a suitable construction-free buffer will be established around all active nests. The precise dimension of the buffer (up to 250 ft.) would be determined by the qualified biologist at that time and may vary depending on location and species. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by the qualified biologist that all chicks have fledged and are independent of their parents. Pre-construction surveys during the non-breeding season are not necessary (with the exception of burrowing owls, see *Impact 3.3.5*, above), as adult birds would be expected to abandon their roosts during project implementation activities and therefore, would not be expected to be harmed or killed.

Implementation of the above measures would be applicable to all four phases of the project and would mitigate impacts to nesting raptors and other birds to a less-than-significant level.

3.3.7 Potential Impacts to American Badgers

Impact. Badgers have been documented on the greater Sargent Ranch property by both PNWB and by the resident rancher. Although badgers and their dens have not been documented on the project site, grasslands of the project site provide potential foraging and breeding habitat for this species, and the loss of denning and foraging habitat for this species may be considered a significant impact under CEQA. Additionally, should badgers occur on the site during project implementation, this may result in harm or mortality to individual badgers, and this would be considered a significant adverse impact under CEQA.

Mitigation. Implementation of the following mitigation measures would reduce impacts to the American badger to a less-than-significant level.

Avoidance. Pre-construction surveys that will be conducted for burrowing owls will also be used to determine the presence or absence of badgers in the development footprint, as well as within 300 feet of development.

If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 ft. (or distance specified by the resource agencies, i.e., CDFW) will be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present on the site during project development activities to ensure the buffer is adequate to avoid direct impact to individuals or den abandonment. The monitor would be necessary on the site until it is determined that young are of an independent age and project development activities would not harm individual badgers.

Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.

Pre-construction surveys and avoidance measures to ensure that badgers are not harmed or killed would be applicable to all project phases.

Compensation. Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of American badger foraging and denning habitat on the project site.

The above mitigation measures will lessen potential impacts to badgers to a less-than-significant level.

3.3.9 Potential Impact to Special Status Plant Species

Potential Impact. Of the special status plant species potentially occurring in the region (Table 3, Figure 5), most are considered absent from the site due to a lack of suitable habitat such as serpentine grasslands, wetlands, or vernal pools. It should be noted that there is a documented occurrence in the CNDDDB of one of these species, i.e. saline clover (CRPR 1B) occurring in

wetlands of the greater ranch property; however, habitat for this species is absent on the project site due to a lack of wetland or vernal pool habitats within the project boundary. Six other special status plant species are considered unlikely to occur on the project site because habitat is marginal on the site for these species and/or because the species has not been observed in the region for many decades. The latter species include showy Rancheria clover (FE, CRPR 1B), alkali milk-vetch (CRPR 1B), fragrant fritillary (CRPR 1B), Loma Prieta hoita (CRPR 1B), big-scale balsamroot (CRPR 1B), and pink creamsacs (CRPR 1B). As with saline clover, it should be noted that there is a CNDDDB-documented occurrence of pink creamsacs on the greater Sargent Ranch property outside of the project site; however, the project site provides marginal habitat for these species due to the absence of serpentine soils on which this species typically occurs. The grasslands of the site provide suitable potential habitat for two special status plant species, both annual species, and these species include round-leaved filaree (CRPR 1B) (annual species; blooms March-May) and Congdon's tarplant (CRPR 1B) (annual species; blooms May-November); and appropriately timed botanical surveys in grassland habitats that will be impacted by the project would need to be conducted to rule out their presence on the site. Three botanical surveys (March, May and late September-early October) conducted within the grassland habitats of the site would be sufficient to confirm the absence of these species on the site. Should these species occur on the project site, impacts to populations as a result of the project would need to be evaluated by a qualified botanist or plant ecologist to determine whether impacts would be considered significant. If the project would result in the loss of a significant portion of the regional population of these species, impacts may be considered significant under CEQA.

Mitigation. Should the botanical surveys confirm that special status plants are absent from the site, then no mitigation would be required. If populations of these species are present, and if it is determined by a qualified botanist or plant ecologist that project impacts to these species are significant under CEQA, then the following mitigations will be implemented which will reduce impacts to a less-than-significant level.

Avoidance. In consultation with a botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer) to these species.

Compensation. If the project cannot be designed to avoid significant impacts to special status plant populations, then the following compensatory measures will be implemented.

Onsite Preservation. The onsite conservation easement area should be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the conservation easement, it should be determined by a qualified botanist or plant ecologist whether these populations to be preserved would adequately compensate, or partially compensate, for lost populations on the project site. If this is the case, then a Management Plan for populations occurring on the conservation easement shall be developed as part of the greater long-term management plan for the conservation easement as required under Mitigation Measure 3.3.2, above.

Development of a Site Restoration Plan. If the project cannot be designed to avoid significant impacts to special status plants (as discussed above) and the easement area does not support adequate populations of the impacted species to compensate for project impacts, then a Site Restoration Plan must be developed for the significantly impacted species by a qualified botanist or plant ecologist and approved by the County prior to the start of project development. The objective of this mitigation measure would be to replace the special status plants and habitat lost during project implementation. The proposed restoration program should be monitored for a period of five years from the date of site grading. The restoration plan should contain at a minimum the following:

- Identification of appropriate locations on the conservation easement area as determined by the botanist or plant ecologist (i.e., areas with suitable soils, aspect, hydrology, etc.) to restore lost plant populations.
- A description of the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can best be established by collecting seeds of onsite plants prior to project implementation and then directly seeding into suitable habitat on the conservation easement.

- A timetable for implementation of the restoration plan.
- A monitoring plan and performance criteria.
- A description of remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- A description of site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

Off-site Mitigation. If an onsite restoration plan is not feasible, mitigation for impacted special status plant species could be accommodated through restoration or preservation at an off-site location. Any off-site restoration plan would be subject to the same minimum requirements as indicated above for an onsite restoration plan.

If off-site preservation is the mitigation alternative chosen, then the mitigation site must be confirmed to support populations of the impacted species and must be established as a conservation easement to be preserved in perpetuity. A qualified botanist or plant ecologist should prepare a Preservation Plan for the site containing, at a minimum, the following elements:

- A monitoring plan and performance criteria for the preserved plant population.
- A description of remedial measures to be performed in the event that performance criteria are not met.
- A description of maintenance activities to be conducted on the site including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife.

The project proponent will be responsible for funding the development and implementation of any onsite or off-site Preservation Plan.

3.3.10 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Potential Impact. A wetland delineation was conducted on the Sargent Ranch property, including the quarry project site, in 2004 by LOA; however, the delineation was never submitted to USACE for verification. Although areas meeting the criteria of jurisdictional wetlands appear

to be absent from the project site based on findings of the 2004 delineation, several ephemeral drainages occur on the site which have a defined bed and bank and evidence of an Ordinary High Water (OHW) mark. These drainages may be considered jurisdictional by both USACE and RWQCB to the extent of the OHW mark on opposing banks; and the CDFW may also consider the ephemeral drainages jurisdictional to the top of the bank. A preliminary estimate, based on the 2004 delineation, is that approximately 5600 linear feet of such ephemeral drainages would be impacted by the proposed project, with the majority, i.e. approximately 3,000 linear feet, being impacted as a result of Phase I of the project, followed by Phase II at approximately 1500 linear feet, Phase IV at approximately 900 linear feet, and Phase III at approximately 150 linear feet. These ephemeral drainages were not observed to support woody riparian vegetation or wetland vegetation during the 2004 delineation effort and in most cases the vegetation present within drainages was undifferentiated from that of surrounding upland habitats. These features appear to only carry water during or directly after large storm events. Therefore, these drainages do not appear to provide biological functions and values in excess of similar surrounding upland habitats; however, most if not all of these features are likely to be considered jurisdictional by the USACE, RWQCB and/or CDFW and therefore, their loss would be considered significant under CEQA. The limit of jurisdiction of the USACE and RWQCB would be the Ordinary High Water (OHW) mark on opposing banks. Most of the ephemeral drainages of the site are narrow, with an average width of OHW of approximately two feet; therefore, the total acreage of potential impact to USACE and RWQCB jurisdiction would be estimated at 0.26 acre. The limit of jurisdiction of the CDFW would be the bed and bank; therefore, with an average channel width of about six feet, the estimated total of areas of CDFW jurisdiction within impacted ephemeral drainages would be estimated at 0.8 acre.

In addition to the direct impacts to ephemeral drainages, the construction of the access road for Phase III and Phase IV of the project will likely result in minor impacts to Sargent Creek as a result of three creek crossings. It is assumed that these impacts will be less than 0.1 acre of areas under the jurisdiction of USACE and RWQCB and less than 0.5 acres of areas under the jurisdiction of CDFW, although specific bridge detail plans have not been prepared as these two phases may not be implemented for at least 20 years into the future. Therefore, in total, impacts

to USACE and RWQCB from all phases of the project are estimated at 0.36 acres and impacts to CDFW jurisdiction are estimated at 1.3 acre.

The loss of Waters of the U.S. and State would be considered a significant impact under CEQA. The following mitigations are designed to reduce these impacts to a less-than-significant level.

Mitigation. The project proponent should implement avoidance, minimization, and/or compensation measures to reduce impacts to jurisdictional waters and riparian habitats to a less-than-significant level.

Avoidance. The preferred method of mitigation would be avoidance of all waters of the U.S. and State by designing the project so that it avoids the placement of fill within potentially-jurisdictional waters. As the last wetland delineation was prepared over 10 years ago and was never verified by USACE, and, as it is likely site conditions have changed since that delineation effort, a formal wetland delineation should be prepared for the project site and conservation easement area, and the delineation should be submitted to USACE for verification so that the extent of jurisdictional waters that will be both impacted and preserved can be determined.

Based on the 2004 delineation, the project has been designed to avoid direct and indirect impacts to the most sensitive aquatic features on the Sargent Ranch property by ensuring that they have avoided jurisdictional wetlands and other aquatic features that support important habitat for special status species as well as avoiding Sargent Creek and Tar Creek with a minimum 150 foot setback, both of which are considered Category 1 streams by the SCVHP. However, the project cannot avoid impacts to all ephemeral drainage channels and still meet project objectives.

Minimization. Because full avoidance is not possible, actions should be taken to minimize impacts to aquatic and riparian habitats. Measures taken during construction activities should include placing construction fencing around any aquatic features or riparian areas to be preserved that occur within 100 feet of project construction activities to ensure that these activities do not inadvertently impact sensitive habitats. Sargent Creek access road crossings shall be designed to minimize impacts to the most sensitive aquatic habitats, such as through the use of clear-span structures, and in such a way to ensure that they do not result in barriers to wildlife that use the Sargent Creek corridor.

As part of project build-out, all proposed lighting should be designed to avoid light and glare impacts to the riparian corridor. Light sources should not be visible from riparian areas and should not illuminate riparian areas or cause glare on the opposite side of the creek. Additionally, proposed development activities should be designed and situated to avoid the loss of trees within the riparian area of Sargent Creek to the maximum extent practicable.

Preservation. The project includes the preservation of an estimated 11,700 linear feet of ephemeral drainages (including approximately 0.5 acres of channels under the jurisdiction of the USACE and RWQCB, and approximately 1.6 acres of channel under the jurisdiction of CDFW); 1.2 acres of pond which, as previously described provides known breeding habitat for CRLF; and 1.0 acres of seasonal wetlands, within a conservation easement. The ponds and wetlands preserved would also be likely to be considered jurisdictional by USACE and RWQCB.

Compensation. In addition to the preservation of ephemeral channel habitat and other aquatic habitat as discussed above, the project will compensate for a loss of ephemeral channel habitat and a small amount of riparian habitat along Sargent Creek riparian through onsite creation of similar or higher quality habitat within the conservation easement area or via the purchase of mitigation credits, or some combination of these two approaches, at a minimum of a 1:1 replacement-to-loss ratio for “in kind” habitat or minimum 1.5:1 replacement-to-loss ratio for different but higher quality habitat (such as the onsite creation of wetland habitat or the purchase of wetland habitat credits).

Should habitat be created onsite, an onsite habitat mitigation and monitoring plan (HMMP) would need to be developed. At a minimum, the HMMP will:

- Define the location of all restoration/creation activities;
- Provide evidence of a suitable water budget to support any created aquatic and riparian habitats;
- Identify the species, amount, and location of plants to be installed in the created habitats;
- Identify the time of year for planting and method for supplemental watering during the establishment period;
- Identify the monitoring period. This should be not less than 5 years.
- Define success criteria that will be required for restoration efforts to be deemed a success;

- Identify adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include, but are not limited to, measures to address colonization by invasive species, unexpected lack of water, and excessive foraging of installed plants by native wildlife;
- Define management and maintenance activities (weeding of invasive plants, providing for supplemental water, repair of water delivery systems, etc.); and
- Provide for surety in funding the monitoring and ensuring that the created aquatic and riparian habitats fall within lands to be preserved and managed into perpetuity.

Regulatory issues. The applicant will also need to comply with all state and federal regulations related to construction work that will impact aquatic habitats occurring on the site. The applicant will be required to obtain a Section 404 Clean Water Act permit from the USACE (because of the extent of the impact, i.e. more than 300 linear feet of jurisdictional channel, an Individual Section 404 permit will be required), Section 401 Water Quality Certification from the RWQCB, and Section 1600 Streambed Alteration Agreement from the CDFW prior to initiating any impacts within these habitats.

These minimization and compensation measures will reduce impacts to waters of the U.S. and state and to sensitive riparian habitats to a less-than-significant level.

3.3.11 Potential Impacts to Western Red Bat, Pallid Bat, and Other Special Status and Non-special Status Roosting Bats

Potential Impact. A number of special status and non-special status bat species may roost and/or forage on the project site. Oak trees of the site provide potential roosting habitat for foliage- and cavity-roosting bats including special status bats such as the western red bat and pallid bat, and several other non-special status bat species. The project site provides suitable foraging habitat, but no suitable roosting habitat for other special status bats such as Townsend's big-eared bat and California mastiff bats. While the loss of foraging and roosting habitat for bat species would be considered a less than significant impact of the project due to availability of such habitat regionally, tree removal could result in the loss of individual special status bats or the loss of maternal colonies of either special status or non-special status bat species, and this would be considered a significant impact of the project.

Mitigation. A qualified biologist shall conduct a habitat assessment in the woodland habitat of the site for bats prior to any activities that will result in the removal of trees from the project site. Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/ or maternity habitat for special status bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e. September through mid-October and March through mid- April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, limbs and branches will be removed by a tree cutter using chainsaws only . Limbs with cavities, crevices or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.

3.3.12 Potential Impacts to Special Status Animal Species

Impact. In addition to CTS, CRLF, WPT, BUOW, American badger and the special status bat species already discussed above, the project site provides potential habitat for several other special status animals that occur, or once occurred, in the project region (Table 3, Figure 5).

The site provides potential foraging and nesting habitat for eight special status bird species, including four raptor species: bank swallow, loggerhead shrike, black swift, Vaux's swift, white-tailed kite, northern harrier, short-eared owl and long-eared owl. Additionally, although nesting habitat is absent or extremely marginal on the site for these species, the site provides potential foraging habitat for another three special status raptor species: bald eagle, peregrine falcon, and golden eagle. All of these latter species have been observed in the past to be present on the greater Sargent Ranch property. Bald eagles have apparently been observed roosting on the Sargent Ranch property near Tar Creek during winter months by PNWB biologists; however, this species has not been observed on the ranch since LOA began surveys in 2004. Peregrine falcons were observed foraging on the site by PNWB biologists and while potential nesting habitat is absent from the quarry project area, suitable potential nesting habitat does occur on the greater Sargent Ranch property for this species. Golden eagles were observed on numerous occasions to forage over the grasslands of the ranch by both PNWB and LOA biologists and are assumed to be regular foragers on the quarry project site; however, no nesting activity has ever

been observed on the ranch despite numerous various biological surveys of the site, many of which occurred during the nesting season.

While breeding habitat for the tri-colored blackbird is absent from within the quarry footprints, as previously discussed, there are two documented occurrences in the CNDDDB of tri-colored blackbirds within ponds on the west side of Sargent Creek in the immediate vicinity of the proposed Phase III and Phase IV access road and the northernmost topsoil stock pile location. These occurrences date back to 1980 and 1989. This species was never observed during surveys conducted by PNWB and LOA, and it seems unlikely the species still occurs there, although the ponds were observed to still support potential nesting habitat for this species in the form of emergent vegetation such as cattails. If the species does still occur on the ranch property, the project site would provide marginal foraging habitat for this species, and it would be unlikely to forage there.

All other special status species known to occur in the project region are considered absent from or unlikely to occur on the project site or its immediate vicinity due to the lack of suitable habitat.

The loss of nesting, roosting and foraging habitat for special status animals would be a less-than-significant impact of the project as this habitat would remain regionally abundant. Approximately 400 acres of similar habitat would also be preserved within the conservation easement area on the site.

Mitigation. None warranted.

3.3.13 Loss of Habitat for Non-special Status Native Wildlife

Potential Impact. The habitats of the proposed quarry site are likely to comprise only a portion of most native wildlife's entire home range or territory. As such, some species may disperse through the site, but most wildlife presently using the site do so as part of their normal movements for foraging, mating, and caring for young. Wildlife species presently occupying the site would be displaced or lost from the proposed development areas.

Mining of the site will occur in four phases, with the last two phases probably not occurring until 25 or more years into the future, and continuing to provide habitat for native wildlife in the interim. As new quarry phases are mined, past phases will be reclaimed and revegetated to be returned to a state as closely as possible reflecting their pre-project state. The greatest impacts to habitat will occur as a result of Phase I. This phase of the project will result in impacts to a total of approximately 155 acres, which includes approximately 114 acres of annual grasslands, 22 acres of oak woodlands, and 19 acres of hay fields. Phase I will also directly impact approximately 3000 linear feet of ephemeral drainages that primarily support herbaceous upland vegetation undifferentiated from surrounding upland habitats. Phase I of the project will not impact, either directly or indirectly, any sensitive riparian habitats or wetland habitats, as no such habitats occur within 150 of the Phase I project. Incrementally, over the span of many decades, the quarry project will impact a total of approximately 248 acres of grasslands, 33 acres of woodlands, and 19 acres of agricultural land. Additionally, a small amount of riparian habitat associated with Sargent Creek as a result of the Phase III and Phase IV access road crossings will be impacted.

Annual grasslands and oak woodlands do provide important habitat for many native species; however, these habitats are still abundant regionally and a total of approximately 400 acres will be preserved in-perpetuity on the conservation easement, including approximately 258 acres of grasslands and 50 acres of woodlands. As habitat for native wildlife, this preserved open space is of higher quality than the area proposed for development because it is composed of a mosaic of different habitats including grasslands, woodlands, chaparral/scrub habitats, seasonal wetlands, ponds that provide breeding habitat for special status species and drinking water for native species, and almost 12,000 linear feet of ephemeral drainages. Additionally, the conservation easement will preserve linkages between undeveloped lands occurring to the east and west of the easement, and the eastern boundary, more than a mile in length, is adjacent to Sargent Creek, a riparian corridor which connects open space areas occurring to the north and south as well.

Impacts to native wildlife due to the loss of habitat resulting from the proposed project are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.14 Interference with the Movement of Native Wildlife

Potential Impacts. The quarry project is unlikely to result in a significant impact to the movements of native wildlife. Although some native wildlife would be expected to move through habitats within the quarry footprints, the project will be set back by 150 or more from the most important movement corridors within the project vicinity, i.e. Tar Creek and Sargent Creek, with the exception of crossings of Sargent Creek for access to Phase III and Phase IV of the project. Wildlife currently moving through the habitats of the quarry site to access open space lands to the east and west will be able to use the conservation easement area to continue to do so, or the Tar Creek corridor to the north of the quarry site. Open space lands and the Sargent Creek corridor remain available to the west of the quarry area that will continue to provide linkage between open space areas to the south and north of the project.

Therefore, impacts to wildlife movements are considered less-than-significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.15 Conflict with Local Policies or Ordinances

Potential Impact. There are two County policies or ordinances that the project will need to abide by are the Santa Clara County Tree Ordinance and Heritage Trees in Santa Clara County Ordinance. The applicant will be responsible for conforming to these two ordinance requirements and applying for any necessary permits for removal of ordinance or heritage trees.

Mitigation. None warranted.

3.3.16 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Potential Impact. The development of quarry facilities and on-going quarry operations will require grading, excavation, and vegetation removal, thereby resulting in the project site becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek/river beds, canals, and adjacent wetlands.

To avoid or minimize sedimentation to offsite waters the quarry will be set back a minimum of 100 feet from any aquatic features. During the development of quarry facilities, including roads,

the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs), develop a SWPPP per State Water Quality Control Board Stormwater Permit, and conform with Santa Clara County's stormwater and grading requirements. If the applicant abides by the above requirements and obtains the required permits prior to starting the project, impacts to downstream waters from erosion and polluted stormwater runoff will be reduced to a less than significant level.

During project operation phase, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Storm water in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain storm water from entering the creek

Mitigation. Practices incorporated into the project description, as well as minimum setback requirements, will ensure that runoff from the quarry does not enter into creeks in the vicinity of the project. During the development of quarry facilities, the applicant must comply with the provisions of a County grading permit, including standard erosion control measures that employ best management practices (BMPs). Projects involving the grading of large tracts of land must also be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board. Compliance with the above permits should result in no impact to water quality in seasonal creeks, reservoirs, and downstream waters from the proposed project.

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APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the approximately 6300-acre Sargent Ranch study area during the surveys conducted by Live Oak Associates on July 30, August 3 and 4, 2004; June 9 and 10, July 13, 20, 21, and 27, and October 6, 2005; March 28 and 29, 2007; May 29-31, 2007; August 1, 2007; and September 24, 2007. All plants have been named according to *The Jepson Manual* (Hickman 1993). The U.S. Fish and Wildlife Service indicator status of each plant has been shown following its common name. Many, although not all, of these species may also be reasonably expected to occur on the Sargent Ranch Quarry project site.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 +/- - Higher/lower end of category
 NR - No review
 NA - No agreement
 NI - No investigation

ACERACEAE – MAPLE FAMILY

<i>Acer macrophyllum</i>	Big-leaf Maple	FAC
<i>Acer negundo</i>	Boxelder	FACW

ANACARDIACEAE – SUMAC FAMILY

<i>Schinus molle</i>	Peruvian Pepper Tree	UPL
<i>Toxicodendron diversilobum</i>	Poison Oak	UPL

APIACEAE – CARROT FAMILY

<i>Anthriscus caucalis</i>	Bur-chervil	UPL
<i>Berula erecta</i>	Cut-leaved Water Parsnip	OBL
<i>Conium maculatum</i>	Poison Hemlock	FACW
<i>Daucus pusillus</i>	Rattlesnakeweed	UPL
<i>Eryngium vaseyi</i>	Coyote Thistle	OBL
<i>Foeniculum vulgare</i>	Fennel	FACU
<i>Heracleum lanatum</i>	Cow Parsnip	FACU
<i>Hydrocotyle ranunculoides</i>	Marsh Pennywort	OBL
<i>Lomatium</i> sp.	Lomatium	-
<i>Oenanthe sarmentosa</i>	Water Parsley	OBL
<i>Osmorhiza chilensis</i>	Sweet-cicely	UPL
<i>Perideridia kelloggii</i>	Kellogg's Yampah	UPL
<i>Sanicula bipinnata</i>	Poison Sanicle	UPL
<i>Sanicula bipinnatifida</i>	Purple Sanicle	UPL
<i>Sanicula crassicaulis</i>	Snakeroot	UPL
<i>Sanicula laciniata</i>	Coast Sanicle	UPL
<i>Torilis arvensis</i>	Field Hedge Parsley	UPL
<i>Torilis nodosa</i>	Knotted Hedge Parsley	UPL

APOCYNACEAE – DOGBANE FAMILY

<i>Vinca major</i>	Periwinkle	UPL
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ASCLEPIADACEAE – MILKWEED FAMILY

<i>Asclepias fascicularis</i>	Narrow-leaved Milkweed	FAC
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ASTERACEAE - SUNFLOWER FAMILY

<i>Achillea millefolium</i>	Common Yarrow	FACU
<i>Achyrrachaena mollis</i>	Blow Wives	UPL
<i>Agoseris grandiflora</i>	California Dandelion	UPL
<i>Agoseris heterophylla</i>	Annual Mountain Dandelion	UPL
<i>Ambrosia psilostachya</i>	Western Ragweed	
<i>Anaphalis margaritacea</i>	Pearly Everlasting	
<i>Anthemis cotula</i>	Mayweed	FACU
<i>Artemisia californica</i>	California Sagebrush	UPL
<i>Artemisia douglasiana</i>	Mugwort	FACW
<i>Baccharis pilularis</i>	Coyote Brush	UPL
<i>Baccharis salicifolia</i>	Mule's Fat	FACW-
<i>Carduus pycnocephalus</i>	Italian Thistle	UPL
<i>Centaurea calcitrapa</i>	Purple Star-thistle	UPL
<i>Centaurea solstitialis</i>	Yellow Star-thistle	UPL
<i>Chamomilla suaveolens</i>	Pineapple Weed	FACU
<i>Cichorium intybus</i>	Chicory	UPL
<i>Cirsium vulgare</i>	Bull Thistle	FACU
<i>Conyza canadensis</i>	Canadian Horseweed	FAC
<i>Cotula coronopifolia</i>	Brass Buttons	FACW+
<i>Erechtites glomerata</i>	Cut-leaved Fireweed	UPL
<i>Erigeron philadelphicus</i>	Philadelphia Daisy	
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	UPL
<i>Filago gallica</i>	Narrow-leaved Filago	UPL
<i>Gnaphalium californicum</i>	California Everlasting	UPL
<i>Gnaphalium luteo-album</i>	Cudweed	FACW-
<i>Gnaphalium purpureum</i>	Purple Cudweed	UPL
<i>Grindelia camporum</i>	Great Valley Gumplant	FACU
<i>Helenium puberulum</i>	Rosilla	FACW
<i>Hemizonia congesta ssp. congesta</i>	Hayfield Tarweed	UPL
<i>Hemizonia congesta ssp. luzulifolia</i>	Hayfield Tarweed	UPL
<i>Hemizonia pungens ssp. pungens</i>	Common Spikeweed	FAC
<i>Hesperevax sparsiflora</i>	Erect Hesperevax	UPL
<i>Hypochaeris glabra</i>	Smooth Cat's Ear	UPL
<i>Hypochaeris radicata</i>	Rough Cat's Ear	UPL
<i>Iva axillaris ssp. robustior</i>	Poverty weed	FAC
<i>Lactuca saligna</i>	Willow Lettuce	NI
<i>Lactuca serriola</i>	Prickly Lettuce	FAC
<i>Lagophylla ramosissima ssp. ramosissima</i>	Common Hareleaf	UPL
<i>Lasthenia californica</i>	Goldfields	UPL

<i>Layia platyglossa</i>	Tidy Tips	UPL
<i>Lessingia filaginifolia</i>	Common Lessingia	UPL
<i>Madia gracilis</i>	Slender Tarweed	UPL
<i>Microseris douglasii</i>	Douglas Microseris	UPL
<i>Picris echioides</i>	Bristly Ox Tongue	FAC*
<i>Senecio vulgaris</i>	Common Groundsel	NI
<i>Silybum marianum</i>	Milk Thistle	UPL
<i>Solidago californica</i>	California Goldenrod	UPL
<i>Sonchus asper</i>	Prickly Sow-thistle	FAC
<i>Sonchus oleraceus</i>	Common Sow-thistle	NI
<i>Taraxacum officinale</i>	Common Dandelion	FACU
<i>Tragopogon porrifolius</i>	Tragopogon	UPL
<i>Uropappus lindleyi</i>	Silverpuffs	UPL
<i>Wyethia glabra</i>	Mules-ears	UPL
<i>Wyethia helenioides</i>	Gray Mules Ears	UPL
<i>Xanthium spinosum</i>	Spiny Cocklebur	FAC+
<i>Xanthium strumarium</i>	Common Cocklebur	FAC+

AZOLLACEAE - MOSQUITO FERN FAMILY

<i>Azolla filiculoides</i>	Fern-Like Azolla	OBL
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BETULACEAE – BIRCH FAMILY

<i>Alnus rhombifolia</i>	White Alder	FACW
<i>Alnus rubra</i>	Red Alder	FACW
<i>Corylus cornuta var. californica</i>	Hazelnut	NI

BLECHNACEAE - DEER FERN FAMILY

<i>Woodwardia fimbriata</i>	Chain Fern	FACW+
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BORAGINACEAE – BORAGE FAMILY

<i>Amsinckia menziesii var. intermedia</i>	Fiddleneck	UPL
<i>Cynoglossum grande</i>	Hound's Tongue	UPL
<i>Heliotropium curassivicum</i>	Alkali Heliotrope	OBL
<i>Plagiobothrys canescens</i>	Valley Popcorn Flower	UPL
<i>Plagiobothrys nothoflavus</i>	Rusty Popcorn Flower	FACU

BRASSICACEAE – MUSTARD FAMILY

<i>Brassica nigra</i>	Black Mustard	UPL
<i>Capsella bursa-pastoris</i>	Cardamine californica	
<i>Milkmaids</i>		UPL
<i>Cardamine oligosperma</i>	Bitter Cress	FACW
<i>Cardaria draba</i>	Hoary Cress	UPL
<i>Hirschfeldia incana</i>	Summer Mustard	UPL
<i>Lepidium campestre</i>	Lepidium latifolium	
<i>Broad-leaved Peppergrass</i>		FACW
<i>Lepidium nitidum</i>	Common Peppergrass	FACW
<i>Lepidium oxycarpum</i>	Sharp-podded Peppergrass	OBL

<i>Lepidium strictum</i>	Wayside Peppergrass	UPL
<i>Raphanus sativus</i>	Wild Radish	UPL
<i>Rorippa curvisiliqua</i>	Western Yellow Cress	OBL
<i>Rorippa nasturtium-aquaticum</i>	Watercress	OBL
<i>Sisymbrium officinale</i>	Hedge Mustard	UPL

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

<i>Lonicera hispidula</i>	Hairy Honeysuckle	UPL
<i>Sambucus mexicana</i>	Blue Elderberry	FAC
<i>Symphoricarpos albus var. laevigatus</i>	Snowberry	FACU

CARYOPHYLLACEAE – PINK FAMILY

<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	UPL
<i>Silene gallica</i>	Windmill Pink	
<i>Spergularia marina</i>	Salt-marsh Sand Spurry	OBL
<i>Spergularia rubra</i>	Red Sand-spurrey	FAC-
<i>Stellaria media</i>	Common Chickweed	FACU

CHENOPODIACEAE – GOOSEFOOT FAMILY

<i>Atriplex triangularis</i>	Spear Scale	FACW
<i>Chenopodium californicum</i>	California Goosefoot	UPL
<i>Salsola tragus</i>	Russian-thistle	FACU

CONVOLVULACEAE – MORNING GLORY FAMILY

<i>Calystegia occidentalis</i>	Western Morning-glory	UPL
<i>Calystegia subacaulis</i>	Hill Morning-glory	UPL
<i>Convolvulus arvensis</i>	Field Bindweed	UPL
<i>Cressa truxillensis</i>	Alkali Weed	FACW

CORNACEAE – DOGWOOD FAMILY

<i>Cornus glabrata</i>	Brown Dogwood	FACW
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CRASSULACEAE – STONECROP FAMILY

<i>Crassula connata</i>	Pygmyweed	FAC
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CUCURBITACEAE – GOURD FAMILY

<i>Marah fabaceus</i>	California Man-Root	UPL
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CYPERACEAE – SEDGE FAMILY

<i>Carex dudleyi</i>	Dudley's Sedge	FACW
<i>Carex obnupta</i>	Slough Sedge	OBL
<i>Carex serratodens</i>	Bifid Sedge	FACW
<i>Cyperus eragrostis</i>	Umbrella Sedge	FACW
<i>Eleocharis macrostachya</i>	Spikerush	OBL
<i>Scirpus acutus</i>	Common Tule	OBL
<i>Scirpus americanus</i>	Three Square	OBL
<i>Scirpus cernuus</i>	Low Club Rush	OBL

DENNSTAEDTIACEAE – BRACKEN FAMILY

<i>Pteridium aquilinum</i>	Western Bracken Fern	FACU
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DIPSACEAE – TEASEL FAMILY

<i>Dipsacus fullonum</i>	Wild Teasel	NI
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DRYOPTERIDACEAE – WOOD FERN FAMILY

<i>Athyrium felix-femina</i>	Western Lady Fern	FAC
<i>Dryopteris arguta</i>	Wood Fern	UPL
<i>Polystichum munitum</i>	Western Sword Fern	UPL

EQUISETACEAE – HORSETAIL FAMILY

<i>Equisetum arvense</i>	Common Horsetail	FAC
<i>Equisetum laevigatum</i>	Smooth Scouring Rush	FACW
<i>Equisetum telmateia ssp. braunii</i>	Giant Horsetail	OBL

ERICACEAE – HEATH FAMILY

<i>Arbutus menziesii</i>	Madrone	UPL
<i>Arctostaphylos tomentosa</i>	Woolly-leaf Manzanita	UPL

EUPHORBIACEAE – SPURGE FAMILY

<i>Eremocarpus setigerus</i>	Doveweed	UPL
<i>Euphorbia crenulata</i>	Chinese Caps	UPL

FABACEAE – LEGUME FAMILY

<i>Astragalus gambelianus</i>	Gamble's Milk-vetch	UPL
<i>Lotus corniculatus</i>	Bird's Foot Trefoil	FAC
<i>Lotus purshianus</i>	Spanish Lotus	UPL
<i>Lotus scoparius</i>	California Broom, Deer Weed	UPL
<i>Lotus wrangelianus</i>	California Lotus	UPL
<i>Lupinus adsurgens</i>	Silky Lupine	UPL
<i>Lupinus albifrons</i>	Silver Bush Lupine	UPL
<i>Lupinus bicolor</i>	Miniature Lupine	UPL
<i>Lupinus nanus</i>	Sky Lupine	UPL
<i>Lupinus succulentus</i>	Arroyo Lupine	UPL
<i>Medicago polymorpha</i>	Bur Clover	FACU-
<i>Melilotus alba</i>	White Sweetclover	FACU+
<i>Melilotus indica</i>	Yellow Sweetclover	FAC
<i>Rupertia physodes</i>	California-tea	UPL
<i>Trifolium angustifolium</i>	Narrow-leaved clover	UPL
<i>Trifolium albopurpureum</i>	Indian Clover	UPL
<i>Trifolium bifidum</i>	Notch-leaved Clover	UPL
<i>Trifolium ciliolatum</i>	Tree Clover	UPL
<i>Trifolium dubium</i>	Little Hop Clover	FACU
<i>Trifolium fucatum</i>	Bull Clover	FAC
<i>Trifolium gracilentum var. gracilentum</i>	Pinpoint Clover	UPL
<i>Trifolium hirtum</i>	Rose Clover	UPL

<i>Trifolium incarnatum</i>	Crimson Clover	UPL
<i>Trifolium microcephalum</i>	Small-head Clover	FACU
<i>Trifolium microdon</i>	Valpariaso Clover	UPL
<i>Trifolium subterraneum</i>	Subterraneum Clover	UPL
<i>Trifolium wildenovii</i>	Tomcat Clover	UPL
<i>Trifolium wormskioldii</i>	Cow Clover	FACW
<i>Vicia sativa</i>	Spring Vetch	FACU
<i>Vicia villosa</i>	Hairy Vetch	UPL

FAGACEAE – OAK FAMILY

<i>Quercus agrifolia</i>	Coast Live Oak	UPL
<i>Quercus douglassii</i>	Blue Oak	UPL
<i>Quercus lobata</i>	Valley Oak	UPL

GERANIACEAE – GERANIUM FAMILY

<i>Erodium botrys</i>	Long-beaked Filaree	UPL
<i>Erodium cicutarium</i>	Redstem Filaree	UPL
<i>Geranium dissectum</i>	Cut-Leaved Geranium	UPL
<i>Geranium molle</i>	Dove's Foot Geranium	UPL

GROSSULARIACEAE – GOOSEBERRY FAMILY

<i>Ribes californicum</i> var. <i>californicum</i>	Hillside Gooseberry	UPL
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	Pinkflower Currant	UPL

HIPPOCASTANACEAE – BUCKEYE FAMILY

<i>Aesculus californica</i>	California Buckeye	UPL
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HYROPHYLLACEAE – WATERLEAF FAMILY

<i>Nemophila menziesii</i> ssp. <i>menziesii</i>	Baby Blue-eyes	UPL
<i>Pholistima auritum</i> var. <i>auritum</i>	Fiesta Flower	UPL

IRIDACEAE – IRIS FAMILY

<i>Iris douglasiana</i>	Douglas Iris	UPL
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	FAC

JUGLANDACEAE – WALNUT FAMILY

<i>Juglans hindsii</i>	California Black Walnut	FAC
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JUNCACEAE – RUSH FAMILY

<i>Juncus balticus</i>	Baltic Rush	OBL
<i>Juncus bufonius</i>	Toad Rush	FACW-
<i>Juncus effuses</i> var. <i>pacificus</i>	Pacific Bog Rush	OBL
<i>Juncus mexicanus</i>	Mexican Rush	FACW
<i>Juncus occidentalis</i>	Western Rush	FACW
<i>Juncus patens</i>	Common Rush	FAC
<i>Juncus xiphioides</i>	Iris-leaf Juncus	FACW+
<i>Luzula comosa</i>	Wood Rush	NI

LAMIACEAE – MINT FAMILY

<i>Lepichinia calycina</i>	Pitcher Sage	UPL
<i>Marrubium vulgare</i>	Horehound	FAC
<i>Mentha pulegium</i>	Pennyroyal	OBL
<i>Pogogyne serpylloides</i>	Thyme-leaved Pogogyne	FACW
<i>Salvia mellifera</i>	Black Sage	UPL
<i>Stachys ajugoides</i> var. <i>rigida</i>	Rigid Hedge Nettle	OBL
<i>Stachys bullata</i>	Wood Mint	UPL
<i>Stachys pycnantha</i>	Short-spiked Hedge Nettle	FACW
<i>Trichostemma lanceolatum</i>	Vinegar Weed	UPL

LAURACEAE – LAUREL FAMILY

<i>Umbellularia californica</i>	California Bay	FAC
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LEMNACEAE – DUCKWEED FAMILY

<i>Lemna gibba</i>	Inflated Duckweed	OBL
<i>Lemna minor</i>	Duckweed	OBL

LILIACEAE – LILY FAMILY

<i>Brodiaea elegans</i>	Harvest Brodiaea	UPL
<i>Calochortus luteus</i>	Yellow Mariposa Lily	UPL
<i>Calochortus venustus</i>	Mariposa Lily	UPL
<i>Chlorogalum pomeridianum</i>	Soap Plant	UPL
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	UPL
<i>Muilla maritima</i>	Common Muilla	UPL
<i>Trillium chloropetalum</i>	Giant Trillium	UPL
<i>Triteleia laxa</i>		

LINACEAE – FLAX FAMILY

<i>Linum bienne</i>	Narrowleaf Flax	UPL
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LYTHRACEAE – LOOSESTRIFE FAMILY

<i>Lythrum hyssopifolia</i>	Hyssop Loosestrife	FACW
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MALVACEAE – MALLOW FAMILY

<i>Malva neglecta</i>	Common Mallow, Cheeses	UPL
<i>Malvella leprosa</i>	Alkali Mallow	FAC
<i>Sidalcea diploscypha</i>	Fringed Sidalcea	
<i>Sidalcea malvaeflora</i> ssp. <i>laciniata</i>	Checker Bloom, Wild Hollyhock	UPL

MYRTACEAE – MYRTLE FAMILY

<i>Eucalyptus globulus</i>	Blue Gum	UPL
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OLEACEAE – OLIVE FAMILY

<i>Fraxinus dipetala</i>	California Ash	UPL
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ONAGRACEAE – EVENING PRIMROSE FAMILY

<i>Camissonia ovata</i>	Sun Cup	UPL
<i>Clarkia rubicunda</i>	Farewell-To-Spring	UPL
<i>Clarkia sp.</i>	Clarkia	
<i>Clarkia unguiculata</i>	Elegant Fairyfan	UPL
<i>Epilobium brachycarpum</i>	Willow Herb	UPL
<i>Epilobium canum</i>	California Fuschia	UPL
<i>Epilobium ciliatum ssp. ciliatum</i>	California Willowherb	FACW
<i>Epilobium minutum</i>	Minute Willowherb	UPL
<i>Epilobium ciliatum</i>	Willow Herb	FACW
<i>Ludwigia peploides</i>	Yellow Water Weed	OBL
<i>Oenothera elata ssp. hookeri</i>	Hooker's Evening Primrose	

OXALIDACEAE – OXALIS FAMILY

<i>Oxalis corniculata</i>	Creeping Wood-sorrel	FACU
<i>Oxalis pes-caprae</i>	Bermuda Buttercup	UPL

PAPAVERACEAE – POPPY FAMILY

<i>Eschscholzia californica</i>	California Poppy	UPL
<i>Platystemon californicus</i>	Cream Cups	UPL

PLANTAGINACEAE – PLANTAGO FAMILY

<i>Plantago lanceolata</i>	English Plantain	FAC
<i>Plantago major</i>	Common Plantain	FACW-

PLATANACEAE – SYCAMORE FAMILY

<i>Platanus racemosa</i>	Western Sycamore	FACW
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POACEAE - GRASS FAMILY

<i>Agrostis viridis</i>	Water Bent Grass	OBL
<i>Arundo donax</i>	Giant Reed	FACW
<i>Avena barbata</i>	Slender Wild Oats	UPL
<i>Avena sativa</i>	Cultivated Oat	UPL
<i>Briza minor</i>	Little Quaking Grass	FACW-
<i>Bromus carinatus</i>	California Brome	UPL
<i>Bromus diandrus</i>	Ripgut	UPL
<i>Bromus hordeaceus</i>	Soft Chess	FACU
<i>Bromus madritensis</i>	Red Brome	NI
<i>Crypsis schoenoides</i>	Swamp Grass	OBL
<i>Crypsis vaginiflora</i>	Prickle-grass	
<i>Cynosurus echinatus</i>	Hedgehog Dogtail	UPL
<i>Danthonia californica</i>	California Oatgrass	FACW
<i>Distichlis spicata</i>	Saltgrass	FACW
<i>Echinochloa crus-galli</i>	Barnyard Grass	FACW
<i>Elymus elymoides</i>	Squirrel tail	FACU-
<i>Elymus glaucus</i>	Blue Wildrye	FACU
<i>Gastridium ventricosum</i>	Nit Grass	FACU

<i>Hordeum brachyanthum</i>	California Barley	FACW
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean Barley	FAC
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Barnyard Barley	NI
<i>Lamarkia aurea</i>	Goldentop	UPL
<i>Leymus triticoides</i>	Creeping Wildrye	FAC+
<i>Lolium multiflorum</i>	Ryegrass	FAC
<i>Lolium perenne</i>	Perennial Rye	FAC
<i>Melica torreyana</i>	Melic Grass	UPL
<i>Nassella cernua</i>	Nodding Needle Grass	
<i>Nassella pulchra</i>	Purple Needle Grass	UPL
<i>Paspalum distichum</i>	Knotgrass	OBL
<i>Phalaris aquatica</i>	Harding Grass	FAC+
<i>Poa annua</i>	Annual Bluegrass	FACW-
<i>Poa secunda</i>	Oneside Blue Grass	UPL
<i>Polypogon monspeliensis</i>	Annual Beardgrass	FACW
<i>Vulpia bromoides</i>	Six-week Fescue	FACW
<i>Vulpia microstachys</i>	Pacific Fescue	UPL

POLEMONIACEAE – PHLOX FAMILY

<i>Navarretia</i> sp.	Navarretia	
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POLYGONACEAE - BUCKWHEAT FAMILY

<i>Eriogonum nudum</i> var. <i>nudum</i>	Naked-stemmed Buckwheat	UPL
<i>Polygonum amphibium</i> var. <i>emersum</i>	Swamp Knotweed	OBL
<i>Polygonum arenastrum</i>	Common Knotweed	FAC
<i>Polygonum hydropiperoides</i>	Water-pepper	OBL
<i>Polygonum persicaria</i>	Lady's Thumb	FACW
<i>Pterostegia drymarioides</i>	Pterostigia	UPL
<i>Rumex acetosella</i>	Sheep Sorrel	FAC_
<i>Rumex crispus</i>	Curly Dock	FACW
<i>Rumex pulcher</i>	Fiddle Dock	FAC+
<i>Rumex salicifolius</i>	Willow Dock	OBL

POLYPODIACEAE – POLYPODY FAMILY

<i>Polypodium californicum</i>	California Polypody	UPL
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PORTULACACEAE – PURSLANE FAMILY

<i>Calandrinia ciliata</i>	Red Maids	FACU
<i>Claytonia gypsophiloides</i>	Coast Claytonia	UPL
<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Small-leaved Claytonia	UPL
<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Miner's Lettuce	FAC
<i>Portulaca oleracea</i>	Common Purslane	FAC

POTAMOGETONACEAE - PONDWEED FAMILY

<i>Potamogeton nodosus</i>	Long-leaved Pondweed	OBL
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PRIMULACEAE – PRIMROSE FAMILY

<i>Anagallis arvensis</i>	Scarlet Pimpernel	FAC
<i>Dodecatheon hendersonii</i>	Mosquito Bills	UPL
<i>Trientalis latifolia</i>	Star Flower	UPL

PTERIDACEAE – BRAKE FAMILY

<i>Adiantum jordanii</i>	Maidenhair Fern	UPL
<i>Pellaea andromedaefolia</i>	Coffee Fern	UPL
<i>Pentagramma triangularis</i>	Gold-back Fern	UPL

RANUNCULACEAE – BUTTERCUP FAMILY

<i>Clematis ligusticifolia</i>	Virgin's Bower	FAC
<i>Myosurus minimus</i>	Common Mousetail	OBL
<i>Ranunculus californicus</i>	California Buttercup	FAC

RHAMNACEAE – BUCKTHORN FAMILY

<i>Rhamnus californica</i>	California Coffeeberry	UPL
<i>Rhamnus crocea</i>	Redberry	UPL

ROSACEAE – ROSE FAMILY

<i>Acaena pinnatifida</i> var. <i>californica</i>	California Acaena	UPL
<i>Adenostema fasciculatum</i>	Chamise	FAC
<i>Aphanes occidentalis</i>	Lady's Mantle	UPL
<i>Fragaria vesca</i>	Wood Strawberry	UPL
<i>Heteromeles arbutifolia</i>	Toyon	UPL
<i>Holodiscus discolor</i>	Creambush	UPL
<i>Horkelia californica</i> ssp. <i>frondosa</i>	Leafy Horkelia	UPL
<i>Oemlaria cerasiformis</i>	Oso Berry	UPL
<i>Prunus cerasifera</i>	Cherry Plum	UPL
<i>Rosa californica</i>	California Rose	FAC+
<i>Rubus discolor</i>	Himalayan Blackberry	FACW
<i>Rubus ursinus</i>	California Blackberry	FACW

RUBIACEAE – MADDER FAMILY

<i>Galium aparine</i>	Goosegrass	FACU
<i>Galium parisiense</i>	Wall Bedstraw	FACU
<i>Galium porrigens</i>	Climbing Bedstraw	UPL
<i>Sherardia arvensis</i>	Field Madder	UPL

SALICACEAE – WILLOW FAMILY

<i>Populus balsamifera</i> ssp. <i>tricarpa</i>	Black Cottonwood	FACW
<i>Populus fremontii</i>	Fremont's Cottonwood	FACW
<i>Salix exigua</i>	Narrowleaf Willow	OBL
<i>Salix laevigata</i>	Red Willow	FACW
<i>Salix lasiolepis</i>	Arroyo Willow	FACW
<i>Salix lucida</i> ssp. <i>lasiandra</i>	Yellow Willow	OBL

SAXIFRAGACEAE – SAXIFRAGE FAMILY

<i>Lithophragma affine</i>	Woodland Star	UPL
<i>Saxifraga californica</i>	California Saxifrage	UPL

SCROPHULARIACEAE – SNAPDRAGON FAMILY

<i>Castilleja affinis</i> ssp. <i>affinis</i>	Indian Paintbrush	UPL
<i>Castilleja exserta</i>	Pink Owl's Clover	UPL
<i>Castilleja foliolosa</i>	Woolly Indian Paint-brush	UPL
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	UPL
<i>Mimulus guttatus</i>	Common Monkeyflower	OBL
<i>Scrophularia californica</i>	Beeplant	FAC
<i>Tryphysaria pusilla</i>	Little Owl's Clover	UPL
<i>Veronica anagallis-aquatica</i>	Water speedwell	OBL

SOLANACEAE – NIGHTSHADE FAMILY

<i>Solanum nigrum</i>	Black Nightshade	FACU
<i>Solanum umbelliferum</i>	Blue Witch	UPL

TAXODIACEAE – BALD CYPRESS FAMILY

<i>Sequoia sempervirens</i>	Coast Redwood	UPL
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TYPHACEAE – CATTAIL FAMILY

<i>Typha angustifolia</i>	Narrow-leaved Cattail	OBL
<i>Typha latifolia</i>	Broad-leaved Cattail	OBL

URTICACEAE – NETTLE FAMILY

<i>Urtica dioica</i> ssp. <i>holosericea</i>	Stinging Nettle	FACW
<i>Urtica urens</i>	Dwarf Nettle	UPL

VERBANACEAE – VERBANE FAMILY

<i>Phyla nodiflora</i>	Garden Lippia	FACW
<i>Verbena lasiostachy</i> var. <i>scabrida</i>	Robust Verbena	FAC-

VIOLACEAE – VIOLET FAMILY

<i>Viola pedunculata</i>	Johnny Jump-up	UPL
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VISCACEAE – MISTLETOE FAMILY

<i>Phoradendron villosum</i>	Oak Mistletoe	UPL
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APPENDIX B
TERRESTRIAL VERTEBRATE SPECIES THAT OCCUR, OR POTENTIALLY
OCCUR, ON THE STUDY AREA

The species listed below are those that have been observed on the greater 6300 acre Sargent Ranch property during surveys conducted by LOA and PNWB (denoted by an asterisk), or would be reasonably expected to occur on Sargent Ranch although not directly observed. Many, although not all, of these species may reasonably be expected to use the habitats of the quarry project site. The list was not intended to include birds that are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely and predictably use the site during some or all of the year.

CLASS: ACTINOPTERYGII**ORDER: SALMONIFORMES (Salmonids)****FAMILY: SOLMONIDAE**

Steelhead (*Onchorynchis mykiss irideus*)*

CLASS: AMPHIBIA**ORDER: CAUDATA (SALAMANDERS)****FAMILY: AMBYSTOMATIDAE (MOLE SALAMANDERS AND RELATIVES)**

California Tiger Salamander (*Ambystoma californiense*)*

FAMILY: SALAMANDRIDAE (NEWTS)

California Newt (*Taricha torosa*)*

FAMILY: PLETHODONTIDAE (LUNGLESS SALAMANDERS)

Ensatina (*Ensatina eschscholtzii*)

Black-bellied Salamander (*Batrachoseps nigriventris*)

Pacific Slender Salamander (*Batrachoseps pacificus*)

Arboreal Salamander (*Aneides lugubris*)*

ORDER: ANURA (FROGS AND TOADS)**FAMILY: BUFONIDAE (TRUE TOADS)**

Western Toad (*Bufo boreas*)*

FAMILY: HYLIDAE (TREEFROGS AND RELATIVES)

Pacific Chorus Frog (*Pseudacris regilla*)*

FAMILY: RANIDAE (TRUE FROGS)

Bullfrog (*Rana catesbeiana*)*

California Red-legged Frog (*Rana draytonii*)*

CLASS: REPTILIA**ORDER: TESTUDINES (TURTLES)****FAMILY: EMYDIDAE (BOX AND WATER TURTLES)**

Western Pond Turtle (*Emys marmorata*)*

ORDER: SQUAMATA (LIZARDS AND SNAKES)

SUBORDER: SAURIA (LIZARDS)

FAMILY: PHRYNOSOMATIDAE

Western Fence Lizard (*Sceloporus occidentalis*)*

FAMILY: SCINCIDAE (SKINKS)

Gilbert Skink (*Eumeces gilberti*)

FAMILY: ANGUIDAE (ALLIGATOR LIZARDS AND RELATIVES)

Southern Alligator Lizard (*Elgaria multicarinata*)*

SUBORDER: SERPENTES (SNAKES)

FAMILY: BOIDAE (BOAS)

Rubber Boa (*Charina bottae*)

FAMILY: COLUBRIDAE (COLUBRIDS)

Racer (*Coluber constrictor*)*

Gopher Snake (*Pituophis melanoleucus*)*

Common Kingsnake (*Lampropeltis getulus*)

Common Garter Snake (*Thamnophis sirtalis*)

Western Aquatic Garter Snake (*Thamnophis couchi*)*

FAMILY: VIPERIDAE

Western Rattlesnake (*Crotalus viridis*)*

CLASS: AVES

ORDER: CICONIIFORMES (HERONS, STORKS, IBISES, AND RELATIVES)

FAMILY: PODICIPEDIDAE

Pied-billed Grebe (*Podilymbus podiceps*)*

FAMILY: ARDEIDAE (HERONS AND BITTERNS)

GREAT BLUE HERON (*ARDEA HERODIAS*)*

BLACK-CROWNED NIGHT HERON (*NYCTICORAX NYCTICORAX*)

GREAT EGRET (*ARDEA ALBA*)*

SNOWY EGRET (*EGRETTA THULA*)*

FAMILY: CATHARTIDAE (AMERICAN VULTURES)

Turkey Vulture (*Cathartes aura*)*

California Condor (*Gymnogyps californianus*)

ORDER: ANSERIFORMES (SCREAMERS, DUCKS AND RELATIVES)

FAMILY: ANATIDAE (SWANS, GEESE AND DUCKS)

MALLARD (*ANAS PLATYRHYNCHOS*)*

CANADA GOOSE (*BRANTA CANADENSIS*)*

WOOD DUCK (*AIX SPONSA*)*

ORDER: FALCONIFORMES (VULTURES, HAWKS, AND FALCONS)

FAMILY: ACCIPITRIDAE (HAWKS, OLD WORLD VULTURES, AND HARRIERS)

White-tailed Kite (*Elanus caeruleus*)*
Bald Eagle (*Haliaeetus leucocephalus*)*
Northern Harrier (*Circus cyaneus*)*
Sharp-shinned Hawk (*Accipiter striatus*)*
Cooper's Hawk (*Accipiter cooperi*)*
Northern Goshawk (*Accipiter gentilis*)
Red-shouldered Hawk (*Buteo lineatus*)*
Red-tailed Hawk (*Buteo jamaicensis*)*
Ferruginous Hawk (*Buteo regalis*)*
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)*

FAMILY: FALCONIDAE (CARACARAS AND FALCONS)

American Kestrel (*Falco sparverius*)*
Merlin (*Falco columbarius*)*
Peregrine Falcon (*Falco peregrinus*)*
Prairie Falcon (*Falco mexicanus*)*

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (QUAILS, PHEASANTS AND RELATIVES)

Wild Turkey (*Meleagris gallopavo*)*

FAMILY: ODONTOPHORIDAE (NEW WORLD QUAIL)

California Quail (*Callipepla californica*)*

FAMILY: LARIDAE (GULLS AND TERNS)

California Gull (*Larus californicus*)

ORDER: CHARADRIIDAE (SHOREBIRDS, GULLS AND RELATIVES)

FAMILY: CHARADRIIDAE (PLOVERS AND RELATIVES)

KILLDEER (*CHARADRIUS VOCIFEROUS*)*

ORDER: COLUMBIFORMES (PIGEONS AND DOVES)

FAMILY: COLUMBIDAE (PIGEONS AND DOVES)

Rock Dove (*Columba livia*)*
Band-tailed Pigeon (*Columba fasciata*)*
Mourning Dove (*Zenaida macroura*)*
Eurasian Collared-dove (*Streptopelia decaocto*)*

ORDER: STRIGIFORMES (OWLS)

FAMILY: TYTONIDAE (BARN OWLS)

Common Barn Owl (*Tyto alba*)*

FAMILY: STRIGIDAE (TYPICAL OWLS)

Short-eared Owl (*Asio flammeus*)
Great Horned Owl (*Bubo virginianus*)*
Northern Saw-whet Owl (*Aegolius acadicus*)*
Burrowing Owl (*Athene cunicularia*)*

Long-eared Owl (*Asio otus*)
Western Screech Owl (*Megascops kennicottii*)*

ORDER: CAPRIMULGIFORMES (GOATSUCKERS AND RELATIVES)

FAMILY: CAPRIMULGIDAE (GOATSUCKERS)
Common Nighthawk (*Chordeiles minor*)

ORDER: APODIFORMES (SWIFTS AND HUMMINGBIRDS)

FAMILY: TROCHILIDAE (HUMMINGBIRDS)
Anna's Hummingbird (*Calypte anna*)*
Rufous Hummingbird (*Selasphorus rufus*)*
Allen's Hummingbird (*Selasphorus sasin*)*

ORDER: CORACIIFORMES (KINGFISHERS AND RELATIVES)

FAMILY: ALCEDINIDAE (KINGFISHERS)
BELTED KINGFISHER (*CERYLE ALCYON*)*

ORDER: PICIFORMES (WOODPECKERS AND RELATIVES)

FAMILY: PICIDAE (WOODPECKERS AND WRYNECKS)
Acorn Woodpecker (*Melanerpes formicivorus*)*
Red-breasted Sapsucker (*Sphyrapicus rubber*)*
Northern Flicker (*Colaptes auratus*)*
Hairy Woodpecker (*Picoides villosus*)*
Nuttall's Woodpecker (*Picoides nuttallii*)*
Downy Woodpecker (*Picoides pubescens*)*

ORDER: PASSERIFORMES (PERCHING BIRDS)

FAMILY: TYRANNIDAE (TYRANT FLYCATCHERS)
Olive-sided Flycatcher (*Contopus borealis*)*
Western Wood-Pewee (*Contopus sordidulus*)
Dusky Flycatcher (*Empidonax oberholseri*)
Pacific Slope Flycatcher (*Empidonax difficilis*)*
Black Phoebe (*Sayornis nigricans*)*
Say's Phoebe (*Sayornis saya*)*
Ash-throated Flycatcher (*Myiarchus cinerascens*)*
Western Kingbird (*Tyrannus verticalis*)*

FAMILY: LANIIDAE (SHRIKES)
Loggerhead Shrike (*Lanius ludovicianus*)*

FAMILY: VIREONIDAE (TYPICAL VIREOS)
Cassin's Vireo (*Vireo cassinii*)
Hutton's Vireo (*Vireo huttoni*)*

FAMILY: CORVIDAE (JAYS, MAGPIES, AND CROWS)
Scrub Jay (*Aphelocoma coerulescens*)*
Yellow-billed magpie (*Pica nuttalli*)*
American Crow (*Corvus brachyrhynchos*)*

Common Raven (*Corvus corax*)*

FAMILY: ALAUDIDAE (LARKS)

Horned Lark (*Eremophila alpestris*)*

FAMILY: HIRUNDINIDAE (SWALLOWS)

Tree Swallow (*Tachycineta bicolor*)*

Violet-green Swallow (*Tachycineta thalassina*)*

Cliff Swallow (*Hirundo pyrrhonota*)

Barn Swallow (*Hirundo rustica*)

Bank Swallow (*Riparia riparia*)*

FAMILY: PARIDAE (TITMICE)

Oak Titmouse (*Parus inornatus*)*

Chestnut-backed chickadee (*Parus rufescens*)*

FAMILY: AEGITHALIDAE (BUSHTIT)

Bushtit (*Psaltiriparus minimus*)*

FAMILY: SITTIDAE (NUTHATCHES)

White-breasted Nuthatch (*Sitta carolinensis*)*

FAMILY: TROGLODYTIDAE (WRENS)

Bewick's Wren (*Thryomanes bewickii*)*

House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (KINGLETS)

Golden-crowned Kinglet (*Regulus regulus*)*

Ruby-crowned Kinglet (*Regulus calendula*)*

FAMILY: TURDIDAE (THRUSHES)

Western Bluebird (*Sialia currucoides*)*

Hermit Thrush (*Catharus guttatus*)*

American Robin (*Turdus migratorius*)*

Varied Thrush (*Ixoreus naevius*)

FAMILY: TIMALIIDAE (BABBLERS)

Wrentit (*Chamaea fasciata*)*

FAMILY: MIMIDAE (MOCKINGBIRDS AND THRASHERS)

Northern Mockingbird (*Mimus polyglottos*)*

California Thrasher (*Toxostoma redivivum*)*

FAMILY: STURNIDAE (STARLINGS)

European Starling (*Sturnus vulgaris*)*

FAMILY: MOTACILLIDAE (WAGTAILS AND PIPITS)

American Pipit (*Anthus rubescens*)*

FAMILY: BOMBYCILLIDAE (WAXWINGS)

Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: PTILOGONATIDAE (SILKY FLYCATCHERS)

Phainopepla (*Phainopepla nitens*)

FAMILY: PARULIDAE (WOOD WARBLERS AND RELATIVES)

California Yellow Warbler (*Dendroica petechia brewsteri*)

Yellow-rumped Warbler (*Dendroica coronata*)*

Townsend's Warbler (*Dendroica townsendi*)*

Wilson's Warbler (*Wilsonia pusilla*)*

Orange-crowned Warbler (*Vermivora celata*)*

Common Yellowthroat (*Geothlypis trichas*)*

FAMILY: EMBERIZIDAE (EMBERIZINES)

Spotted towhee (*Pipilo maculatus*)*

California towhee (*Pipilo crissalis*)*

Rufous-crowned Sparrow (*Aimophila ruficeps*)

Chipping Sparrow (*Spizella passerina*)*

Black-chinned Sparrow (*Spizella atrogularis*)

Savannah Sparrow (*Passerculus sandwichensis*)

Song Sparrow (*Melospiza melodia*)*

Lincoln's Sparrow (*Melospiza lincolni*)*

Golden-crowned Sparrow (*Zonotrichia atricapilla*)*

Dark-eyed Junco (*Junco hyemalis*)*

Lark Sparrow (*Chondestes grammacus*)*

Sage Sparrow (*Amphispiza belli*)*

Grasshopper Sparrow (*Ammodramus savannarum*)*

FAMILY: CARDINALIDAE (CARDINALS, GROSBEAKS AND ALLIES)

Black-headed Grosbeak (*Pheucticus melanocephalus*)*

Lazuli Bunting (*Passerina amoena*)*

FAMILY: ICTERIDAE (BLACKBIRDS, ORIOLES AND ALLIES)

Red-winged Blackbird (*Agelaius phoeniceus*)*

Western Meadowlark (*Sturnella neglecta*)*

Brewer's Blackbird (*Euphagus cyanocephalus*)*

Brown-headed Cowbird (*Molothrus ater*)*

Bullocks oriole (*Icterus bullockii*)*

FAMILY: FRINGILLIDAE (FINCHES)

Purple Finch (*Carpodacus purpureus*)*

House Finch (*Carpodacus mexicanus*)*

Lesser Goldfinch (*Carduelis psaltria*)*

American Goldfinch (*Carduelis tristis*)*

FAMILY: PASSERIDAE (OLD WORLD SPARROWS)

House Sparrow (*Passer domesticus*)*

CLASS: MAMMALIA

ORDER: DIDELPHIMORPHIA (MARSUPIALS)

FAMILY: DIDELPHIDAE (OPOSSUMS)

Virginia Opossum (*Didelphis virginiana*)*

ORDER: INSECTIVORA (SHREWS AND MOLES)

FAMILY: SORICIDAE (SHREWS)

Ornate Shrew (*Sorex ornatus*)

Trowbridge's Shrew (*Sorex trowbridgii*)

FAMILY: TALPIDAE (MOLES)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (BATS)

FAMILY: VESPERTILIONIDAE (VESPERTILIONID BATS)

Little Brown Myotis (*Myotis lucifugus*)

California Myotis (*Myotis californicus*)

Western Pipistrelle (*Pipistrellus hesperus*)

Big Brown Bat (*Eptesicus fuscus*)

Townsend's Big-eared Bat (*Plecotus townsendii*)

Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (FREE-TAILED BAT)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

Western Mastiff Bat (*Eumops perotis*)

ORDER: LAGOMORPHA (RABBITS, HARES, AND PIKAS)

FAMILY: LEPORIDAE (RABBITS AND HARES)

Desert Cottontail (*Sylvilagus audubonii*)

Black-tailed Hare (*Lepus californicus*)*

Brush Rabbit (*Sylvilagus bachmani*)*

ORDER: RODENTIA (SQUIRRELS, RATS, MICE, AND RELATIVES)

FAMILY: SCIURIDAE (SQUIRRELS, CHIPMUNKS, AND MARMOTS)

California Ground Squirrel (*Spermophilus beecheyi*)*

Western Gray Squirrel (*Sciurus griseus*)

FAMILY: GEOMYIDAE (POCKET GOPHERS)

Botta's Pocket Gopher (*Thomomys bottae*)*

FAMILY: HETEROMYIDAE (POCKET MICE AND KANGAROO RATS)

California Pocket Mouse (*Perognathus californicus*)*

FAMILY: MURIDAE (MICE, RATS AND VOLES)

Western Harvest Mouse (*Reithrodontomys megalotis*)*

California Mouse (*Peromyscus californicus*)*

Deer Mouse (*Peromyscus maniculatus*)*

California Vole (*Microtus californicus*)*

ORDER: CARNIVORA (CARNIVORES)

FAMILY: CANIDAE (FOXES, WOLVES, AND RELATIVES)

Coyote (*Canis latrans*)*

Red Fox (*Vulpes vulpes*)

Gray Fox (*Urocyon cinereoargenteus*)*

Domestic Dog (*Canis familiaris*)*

FAMILY: PROCYONIDAE (RACCOONS AND RELATIVES)

Raccoon (*Procyon lotor*)*

Ringtail (*Bassariscus astutus*)

FAMILY: MUSTELIDAE (WEASELS, BADGERS, AND RELATIVES)

American Badger (*Taxidea taxus*)*

FAMILY: MEPHITIDAE (SKUNKS)

Striped Skunk (*Mephitis mephitis*)*

FAMILY: FELIDAE (CATS)

Feral Cat (*Felis cattus*)

Cougar (*Puma concolor*)*

Bobcat (*Lynx rufus*)*

ORDER: PERISSODACTYLA (HORSES, TAPIRS, AND RELATIVES)

FAMILY: EQUIDAE (HORSES)

Domestic Horse (*Equus caballus*)*

ORDER: ARTIODACTYLA (EVEN-TOED UNGULATES)

FAMILY: SUIDAE (PIGS)

Wild Pig (*Sus Scrofa*)*

FAMILY: CERVIDAE (DEER, ELK, AND RELATIVES)

Black-tailed Deer (*Odocoileus hemionus columbiana*)*

FAMILY: BOVIDAE (SHEEP, GOATS AND RELATIVES)

Domestic Cattle (*Bos Taurus*)

APPENDIX C: MINIMIZATION MEASURES FOR CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

The following measures will minimize direct and indirect impacts to California red-legged frogs and California tiger salamanders.

- Prior to the start of construction, a qualified biologist will train all project staff regarding habitat sensitivity, identification of special status species, and required practices. The training shall include the general measures that are being implemented to conserve these species as they relate to the project, the penalties for non-compliance, and the boundaries of the project area. A fact sheet or other supporting materials containing this information should be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.
- A qualified biologist will survey the project site prior to, and be present to monitor, construction activities during any initial ground disturbance or vegetation clearing or other periods during construction, as necessary. The biologist will capture and relocate any California red-legged frogs and California tiger salamanders that are discovered during the surveys or construction monitoring. Any individuals that are captured should be held for the minimum amount of time necessary to release them to suitable habitat outside of the work area.
- A qualified biologist will stake and flag exclusion zones around all known locations of CRLF and CTS breeding and upland refugia areas in the construction zone. These areas will be avoided during construction activities to the maximum extent practicable. All construction areas will be flagged, and all activity will be confined to these areas.
- If a CRLF or CTS is encountered during construction work, activities will cease until the animal is removed and relocated by a qualified biologist.
- Construction activities should be limited to the period from May 1 through October 31.
- Permanent and temporary construction disturbances and other types of project-related disturbances to CRLF or CTS habitat shall be minimized to the maximum extent practicable and confined to the project site. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, designated cross-country routes, and other designated areas. These areas also should be included in preconstruction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects. Sensitive habitat areas shall be delineated with high visibility flagging or fencing to prevent encroachment of construction personnel and equipment into any sensitive areas during project work activities. At no time shall equipment or personnel be allowed to adversely affect areas outside the project site without authorization from the Service.

- Because dusk and dawn are often the times when CRLF and CTS are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour before sunrise.
- No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the project site to avoid harassment, killing, or injuring of CRLF or CTS.
- A representative shall be appointed by the applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a CRLF or CTS or who finds a dead, injured or entrapped individual. The representative shall be identified during the tailgate/training session. The representative's name and telephone number shall be provided to the Service prior to the initiation of ground disturbance activities.
- Tightly woven fiber netting or similar material shall be used for erosion control or other purposes at the project site to ensure that CRLF and CTS do not get trapped.
- A litter control program shall be instituted at the entire project site. All construction personnel should ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers should be removed from the project area at the end of each working day.

Exhibit 2



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

SARGENT RANCH MITIGATION RESOURCES SANTA CLARA COUNTY, CALIFORNIA

Prepared by
LIVE OAK ASSOCIATES, INC.

Rick A. Hopkins, Ph.D., Principal/Senior Biologist
Pamela Peterson, Senior Project Manager/Plant and Wetland Ecologist
Mark Jennings, Ph.D., Senior Associate/Herpetologist

Prepared for

Debt Acquisition Co. of America
Attn: Howard Justus
1565 Hotel Circle South, Suite 310
San Diego, CA 92108

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PN 662-06

San Jose: 6840 Via Del Oro, Suite 220 • San Jose, CA 95119 • Phone: (408) 224-8300 • Fax: (408) 224-1411
Oakhurst: P.O. Box 2697 • 33930 Sierra Way, Suite B • Oakhurst, CA 93644 • Phone: (559) 642-4880 • (559) 642-4883
Bakersfield: 8200 Stockdale Highway, M10-293 • Bakersfield, CA 93311 • (661) 889-2084
Truckee: 11050 Pioneer Trail, Suite 203 • Truckee, CA 96161 • Phone: (530) 214-8947

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EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) completed an investigation of the biological resources occurring on the approximately 5,300-acre Sargent Ranch site located south of the City of Gilroy in Santa Clara County, California, and evaluated likely potential value of the site for the establishment of a Conservation Bank for the preservation and possible creation of sensitive biological resources. The evaluation includes findings from several hundred hours of surveys completed by Pacific North Western Biological Resources Consultants, Inc. (PNWB) on the site during the period from May 2000 through June 2001 (PNWB 2001); as well as numerous surveys completed on the site by LOA during the period from July 2004 through June 2014. The latter surveys by LOA include several reconnaissance-level surveys to document habitats and general conditions on the site in 2004; a formal (but not USACE-verified) delineation in 2005; habitat assessments and focused surveys for steelhead, California tiger salamanders and California red-legged frogs conducted over portions of the site in 2005; focused rare plant surveys conducted over the southeastern portion of the site to the east of Sargent Creek in 2007; and more recent surveys in January and June 2014 to confirm existing site conditions, primarily with regard to special status animals and wetlands.

The site supports a rich mosaic of fourteen terrestrial and aquatic habitats. Terrestrial habitats include, but are not limited to, annual grasslands, serpentine grasslands/outcrops, oak woodlands, riparian woodlands and chaparral habitats. Additionally, a variety of hydrologic features occur on the site. The latter includes four USGS blue line streams (Tick Creek, Tar Creek, Sycamore Creek, and Sargent Creek), many seasonal drainages, natural and manmade ponds, seasonal wetlands and seeps, serpentine seeps, and freshwater marsh. The primary use of the site currently is as rangeland with a winter/spring grazing regime, although other land uses occurring on the site include rural residential, oil drilling and hay production.

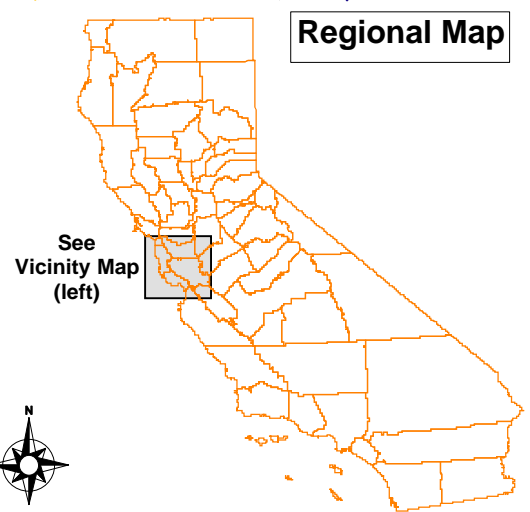
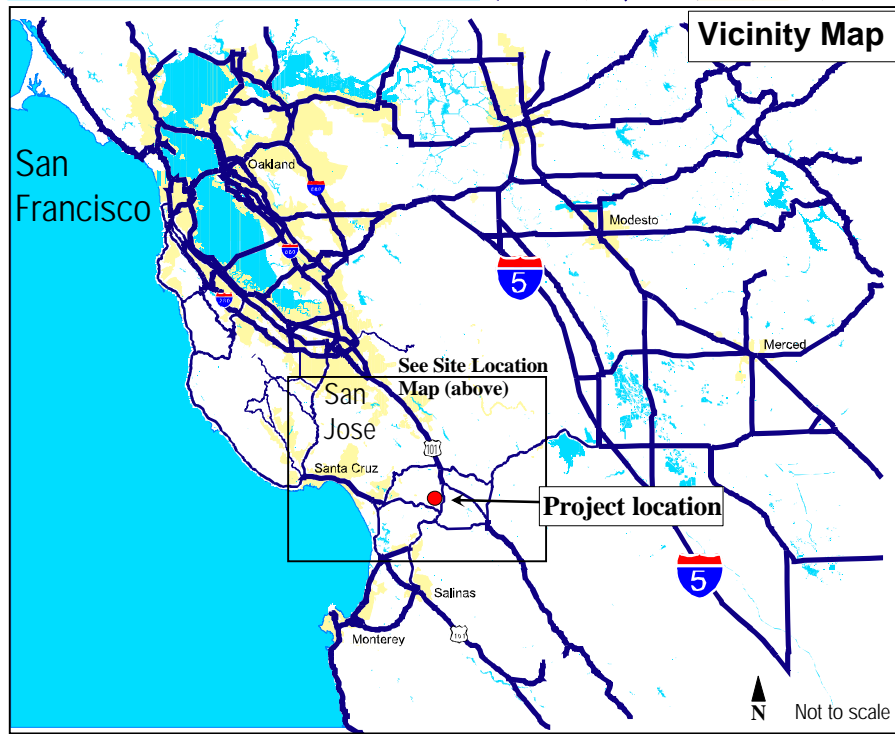
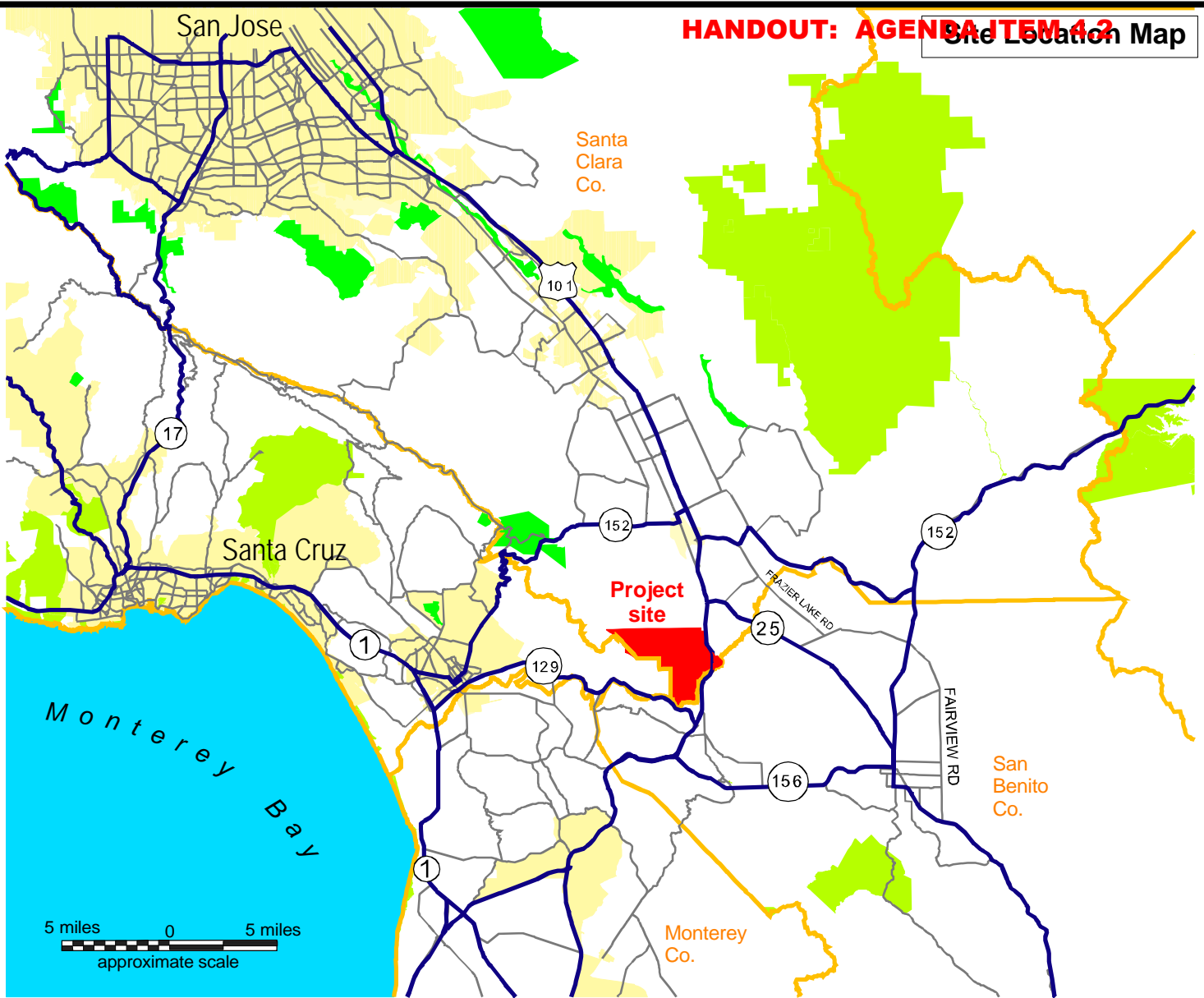
The variety and quality of habitats on the site contribute to species richness. Approximately 350 species of plants have been documented on the site; and more than 100 wildlife species have been observed using the habitats of the site. The site is known to provide habitat, including breeding habitat, for several animal species covered under the federal and/or state Endangered Species Acts, including steelhead (*Oncorhynchus mykiss irideus*) (Federally Threatened), California red-legged frog (*Rana draytonii*) (Federally Threatened), and California tiger salamander (*Ambystoma californiense*) (Federally Threatened and State Threatened). A variety of other animal species with varying legal status have also been observed on the site during surveys conducted by PNWB and LOA, including the western pond turtle (*Emys marmorata*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus anatum*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), black swift (*Cypseloides niger*), and American badger (*Taxidea taxus*). In addition to providing habitat for special status species, the site supports an abundance of habitat for more common species.

The Santa Clara Valley Habitat Conservation Plan (HCP) was used as a very general guideline as to the monetary value placed on various land cover types and sensitive habitats present on the study area.

1 INTRODUCTION

Live Oak Associates, Inc. (LOA) has prepared the following report that describes the biological resources of the approximately 5300-acre Sargent Ranch site, located immediately west of Highway 101 to the south of the City of Gilroy, in Santa Clara County, California (Figure 1). Although the ranch itself encompasses areas within Santa Cruz County, the focus of this effort was on that portion of the ranch occurring within Santa Clara County. The majority of the site occurs adjacent to and west of Highway 101 approximately one mile south of the Highway 101 and Highway 25 interchange. This portion of the site is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The remainder of the site occurs immediately east of Highway 101. This latter portion of the site is bound to the west by Highway 101; to the south by the Pajaro River; and to the east and north by agricultural crop lands. The site can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 North, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the site range from a low of approximately 135 feet NGVD (National Geodetic Vertical Datum) at its southwest corner to a high of just over 1000 feet NGVD on the highest hills in the western central portion of the site. Three main watersheds occur on the site and include Sargent Creek, Tar Creek and Pescadero Creek, all of which are tributaries of the Pajaro River. The Pajaro River eventually drains into Monterey Bay southwest of the site. The site is currently used primarily for cattle grazing although oil wells also occur on the site near Tar Creek and portions of the site are used for oat hay production.

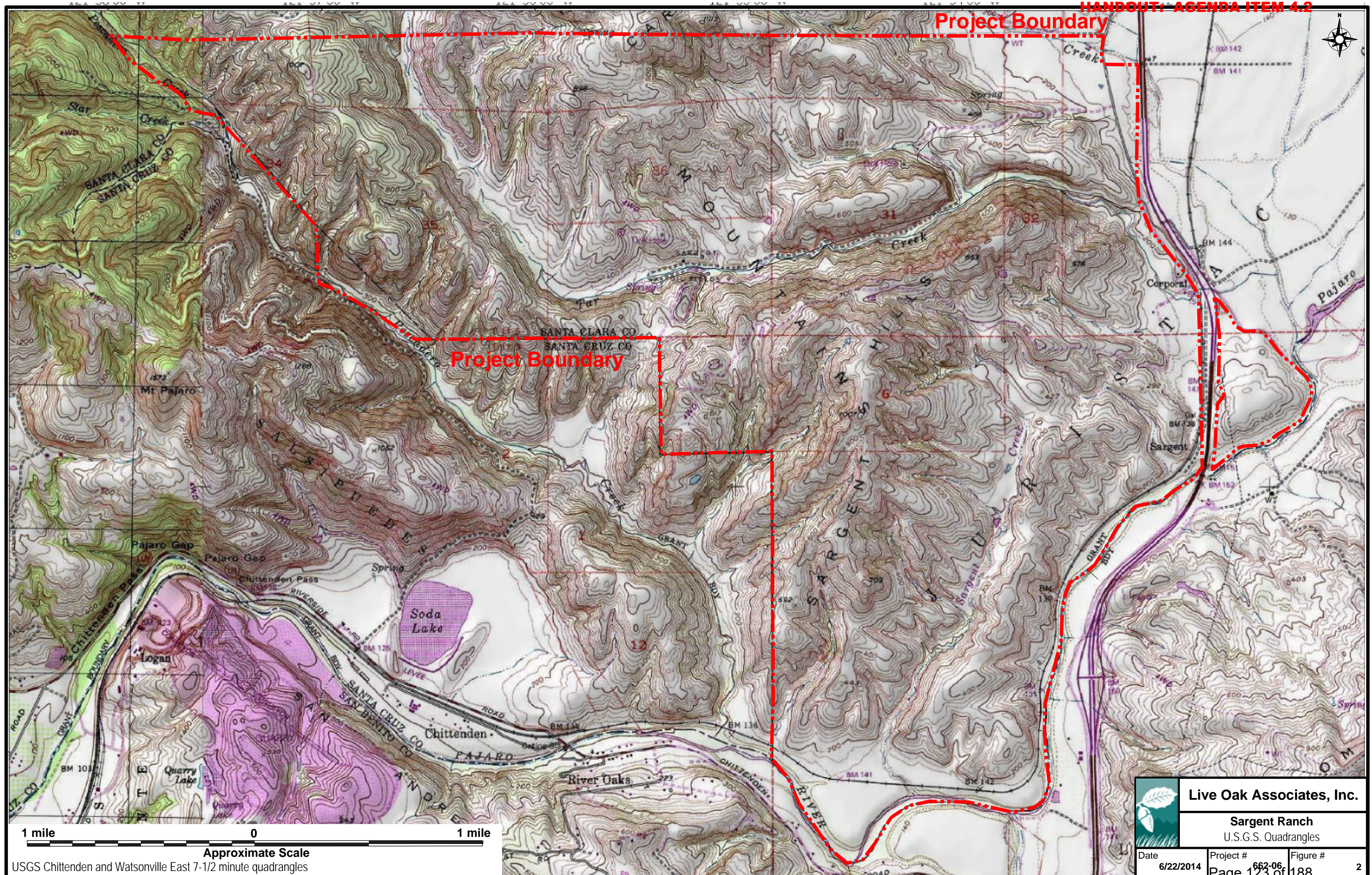
This report analyzes potential value of the Sargent Ranch site as a future Mitigation Bank. Sources of information used in the evaluation are based primarily on findings from surveys conducted on the site by PNWB during the period from 2000 through 2001, and by LOA from 2004 through 2014. The latter surveys by LOA include several reconnaissance-level surveys to document habitats and general conditions on the site in 2004; a formal wetland delineation effort in 2005; habitat assessments and focused surveys for steelhead, California tiger salamanders and California red-legged frogs conducted over portions of the site in 2005; focused rare plant surveys conducted over the southeastern portion of the site to the east of Sargent Creek




Live Oak Associates, Inc.

Sargent Ranch
Site / Vicinity Map

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in 2007; and more recent surveys in January and June 2014 to confirm existing site conditions, primarily with regard to special status animals and wetlands.

Other sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2014); (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014); (3) current listings from Special Plants and Animals (CDFW 2014); (4) the Santa Clara Valley Habitat Conservation Plan (ICF International 2012); (5) aerial photos of the site and surrounding areas; and (5) manuals and references related to plants and animals of the region.

2 EXISTING BIOLOGICAL RESOURCES OF THE RANCH

The following section describes the biological resources of the 5300-acre Sargent Ranch site, and discusses the relative value of these resources in light of the proposed Conservation Bank. Additionally, we provide a discussion of the value of on-site habitats relative to development fees under the Santa Clara Valley Habitat Conservation Plan (HCP).

2.1 BIOTIC HABITATS AND LAND USES

Fourteen biotic habitats and three land uses have been identified on the site (Table 1, Figure 3); and these habitats have been named pursuant to land cover types defined in the Santa Clara Valley HCP (ICF Int. 2012). More detailed habitat descriptions are provided below.

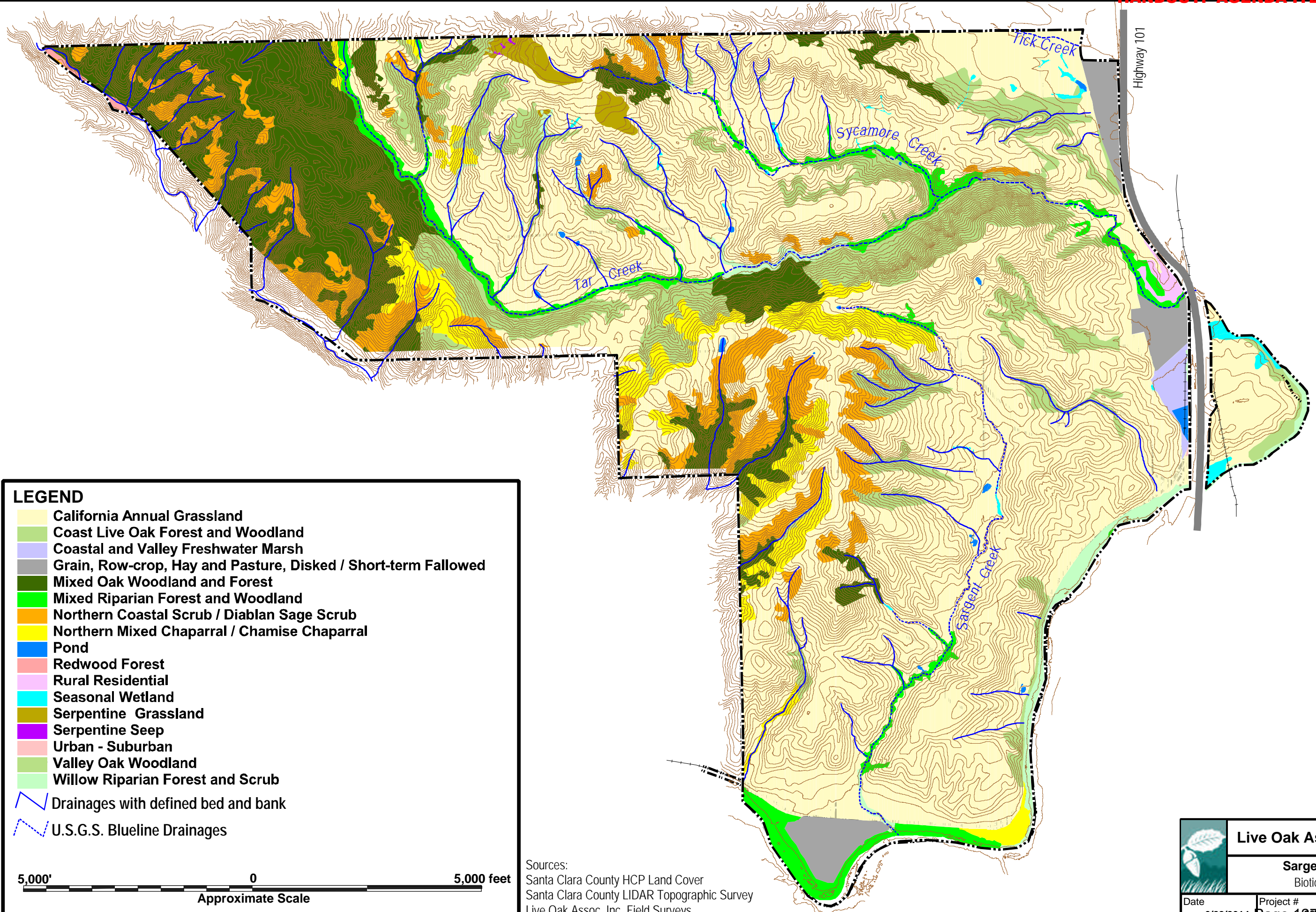
2.1.1 California Annual Grassland

California annual grassland habitat occupies approximately 3,040 acres (approximately 57%) of the project site. Grasslands on the site are dominated by non-native grass species such as wild oats (*Avena barbata* and *A. fatua*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian rye grass (*Festuca perennis*); and weedy non-native forb species such as black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), poison hemlock (*Conium maculatum*), summer mustard (*Hirschfeldia incana*) and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow (*Achillea millifolium*), clarkia (*Clarkia* sp.), rattlesnake weed (*Daucus pusillus*), Pacific rye grass (*Elymus glaucus* ssp. *virescens*), lupines (*Lupinus* spp.), California melic (*Melica californica*), purple needle-grass (*Nassella pulchra*) and gray mules ears (*Wyethia helenioides*).

The grassland is expected to support a host of common grassland animal species. Reptilian species observed onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*) and western rattlesnake (*Crotalis viridis*). Other reptilian species expected to occur here include the gopher snake (*Pituophis melanoleucus*),

Table 1: Habitats and Land Uses of the Study Area

Habitats	Acreages	Value
California Annual Grassland	3,040.0	California tiger salamander estivation habitat; potential burrowing owl habitat; American badger habitat; foraging habitat for many special status birds.
Mixed Oak Woodland and Forest	661.5	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Coast Live Oak Forest and Woodland	542.4	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Coastal Scrub/Diablan Sage Scrub	318.3	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Mixed Chaparral/Chamise Chaparral	222.6	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Mixed Riparian Forest and Woodland	179.9	Nesting, roosting, foraging and movement corridor habitat for California red-legged frog and many other common and special-status birds and other animals; considered a Sensitive Natural Community per CDFW.
Willow Riparian Forest and Scrub	83.6	Nesting, roosting, foraging and movement corridor habitat for CRLF and many other common and special-status birds and other animals; considered a Sensitive Natural Community per CDFW.
Valley Oak Woodland	65.4	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Serpentine Grassland and Outcrop	32.9	Potential habitat for special status endemic plants and animals; considered a Sensitive Natural Community per CDFW.
Seasonal Wetland	21.6	USACE and RWQCB jurisdictional habitat.
Coastal and Valley Freshwater Marsh	18.3	USACE and RWQCB jurisdictional habitat.
Pond	9.8	CTS and CRLF breeding habitat.
Redwood Forest	5.5	Nesting, roosting, foraging habitat for many common and special-status birds and other animals.
Serpentine Seep	0.6	Potential habitat for special status endemic plants.
Total	5,202.4	
Creeks, Streams and Drainages	Linear Feet	
USGS Blue Line Streams	62,835	CDFW, USACE and RWQCB jurisdictional habitat; steelhead breeding habitat (Tar Creek).
Other Intermittent/Ephemeral Drainages (Defined Bed and Bank, evidence of OHW)	131,246	Potential CDFW, USACE and RWQCB jurisdictional habitat.
Total	194,081	
Other Land Uses	Acreages	
Grain, Row Crop, Hay and Pasture	97.5	
Rural Residential	10.6	
Urban-Suburban	0.9	
Total	109.0	



LEGEND

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub
- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

5,000' 0 5,000 feet
Approximate Scale

Sources:
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Live Oak Assoc. Inc. Field Surveys

Live Oak Associates, Inc.		
Sargent Ranch Biotic Habitats		
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common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*). The grasslands may also support the San Joaquin coachwhip (*Masticophis flagellum ruddocki*).

This habitat provides foraging habitat for a number of birds. Avian species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), great horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*), western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltiriparus minimus*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianus*). Other medium-sized and larger mammals that might also be expected to occur on the site include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

While California annual grassland is a common community in the site's vicinity, grasslands of the site may be considered particularly important due to the fact that federally and state threatened California tiger salamanders (*Ambystoma californiense*) have been confirmed to breed on the site and therefore grasslands of the site provide estivation habitat for this species (discussed further in the next section). Other special status species including roosting and foraging burrowing owls and badgers have also been observed within grasslands of the site.

2.1.1 Northern Coastal Scrub/Diablan Sage Scrub and Northern Mixed Chaparral/Chamise Chaparral

Chaparral and scrub habitats occupy approximately 541 acres (or approximately 10%) of the site. California sagebrush (*Artemisia californica*) is the dominant shrub within the chaparral habitats of the site; however, poison oak (*Toxicodendron diversiloba*), coyote brush (*Baccharis pilularis*) and black sage (*Salvia mellifera*) to form open to dense stands, especially along upper slopes on the site. Herbaceous components of this habitat included wild oats, soft chess, foxtail chess (*Bromus madritensis*), broad-leaved filaree (*Erodium botrys*), California cudweed (*Gnaphalium californicum*), summer mustard (*Hirschfeldia incana*), coffee fern (*Pellaea andromedifolia*), and chia (*Salvia columbariae*).

Animal species using the chaparral habitats of the site would be similar to those already described as occurring in grasslands of the site.

2.1.2 Oak Woodland and Forest

Oak woodlands and forest occupy approximately 1,269 acres (approximately 24%) of the site. Woodlands and forest almost completely dominated by coast live oak (*Quercus agrifolia*) are the

most prevalent woodlands on the site; however mixed oak woodlands comprised of coast live oak, blue oak (*Quercus douglasii*) and valley oak (*Quercus lobata*) occur in the northwestern portion of the site on steep slopes to the west of Tar Creek; and some valley oak (*Quercus lobata*) woodland occurs in the northeastern portion of the site. Coast live oak woodlands and mixed oak woodlands of the site generally have a relatively closed canopy and either a barren or leaf litter understory; while valley oak woodlands of the site vary in canopy density, but primarily support a relatively open canopy with an annual grassland understory.

Oak woodlands provide extremely important habitat for a variety of wildlife species. Oak trees provide nesting sites and cover for many birds, including raptors, and mammals. Cavity-bearing trees supply food, denning, nesting and roosting sources. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for amphibians and reptiles. Acorns are a valuable food source for many animal species, including the California quail, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Many of the same species that inhabit the annual grasslands also inhabit the oak woodlands. Representative animal species of oak dominated forests include arboreal salamander (*Aneides lugubris*), southern alligator lizard, common kingsnake, ringneck snake (*Diadophis punctatus*), western screech owl (*Otus kennicottii*), scrub jay, acorn woodpecker (*Melanerpes formicivorus*), western bluebird, woodrat (*Neotoma sp.*), opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.1.3 Riparian Woodland

Riparian woodlands, including mixed riparian forest and woodland and willow riparian forest and scrub habitats, encompass approximately 264 acres (approximately 5%) of habitats of the site. Mixed riparian woodlands occur all along Tar Creek and its major tributary, Sycamore Creek, as well as at the upper and lower reaches of Sargent Creek. Riparian woodlands of the site are highly diverse, including coast live oak, California bay (*Umbellularia californica*), western sycamore (*Platanus racemosa*) (the latter includes individual trees with trunk diameters in excess of five feet along Sycamore Creek), arroyo and red willow (*Salix lasiolepis* and *S. laevigata*), Fremont cottonwood (*Populus fremontii*), buckeye (*Aesculus californica*), and poison

oak. Species commonly observed in the understory of riparian woodlands of the site included horsetail (*Equisetum laevigatum*)(FACW), umbrella sedge (*Cyperus eragrostis*)(FACW), Himalayan and California blackberry (*Rubus discolor* and *R. ursinus*)(FACW), mugwort (*Artemisia douglasiana*)(FACW), and poison hemlock (*Conium maculatum*)(FACW). An unusual feature of Tar Creek is the number of areas where tar and/or oil flows are found on the surface; with the largest feature comprising several acres.

Because of the diversity of vegetation layers in riparian systems, generally these habitats support a diverse array of native wildlife, as well as provide movement corridors for some animal species between other habitat types. For this reason, riparian habitats tend to provide high biotic value and are considered a Sensitive Natural Community by CDFW. For instance, riparian systems serve as dispersal corridors and islands of habitat for an estimated 83% of amphibians and 40% of reptiles in California (Brode and Bury 1984). Leaf litter and decaying logs provide a moist microclimate suitable for amphibians such as the pacific treefrog and the California red-legged frog. Reptiles that may utilize riparian systems include the western fence lizard, skilton skink (*Eumeces skiltonianus skiltonianus*), southern alligator lizard, gopher snake, and common kingsnake (*Lampropeltis getulus*).

Many resident and migratory bird species depend on riparian and aquatic habitats. Resident species that may be found in this habitat include the red-shouldered hawk, great horned owl (*Bubo virginianus*), Hutton's vireo (*Vireo huttoni*), western scrub-jay, bushtit (*Psaltirparus minimus*), and downy woodpecker (*Picoides pubescens*). Winter migrants may include the sharp-shinned hawk (*Accipiter striatus*) and ruby-crowned kinglet (*Regulus calendula*). Summer migrants may include the ash-throated flycatcher (*Myiarchus cinerascens*) and yellow warbler (*Dendroica petechia*).

The structural and faunal diversity of riparian zones provide an abundant food source for, and attract a variety of, mammalian species. For example, the deer mouse (*Peromyscus maniculatus*) feeds on soil-dwelling larvae as well as a variety of seeds and leaves. Other constituent mammals of riparian woodlands include the brush rabbit (*Sylvilagus bachmani*) and western gray squirrel (*Sciurus griseus*).

Riparian woodlands are considered an important and sensitive natural community by CDFW because of the diversity of plant and wildlife species that they support and because of their role as movement corridors for many native wildlife species. Riparian corridors of the project site are also known to provide habitat for the federally threatened California red-legged frog (*Rana draytonii*), discussed further in the next section.

2.1.4 Serpentine Grassland

Serpentine grasslands occur in the northwestern portion of the site and comprise approximately 33 acres. These grasslands are interspersed with rock outcrops and vegetation is generally more sparse as compared to grasslands of the site off of serpentine soils. Although serpentine grasslands of the site support non-native grasses similar to non-serpentine grasslands of the site, they support very few non-native forb species and a much higher density of native bunchgrasses such as purple needlegrass and melic grasses (*Melica* spp.), and typically also support a much higher diversity of common native forbs such as California poppy, owl's-clover (*Castilleja exserta* ssp. *exserta*), cream cups (*Platystemon californicus*), blue dicks (*Dichelostemma capitatum*), hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*)

Animal species expected to occur in the serpentine grasslands would be similar to those occurring in other grasslands of the site.

Serpentine grasslands are considered a sensitive natural community by CDFW due to the fact that so many rare plant species in California are endemic to these soils. Although no rare plant species have been observed on the site, to our knowledge, focused surveys for rare plants have not been conducted on the serpentine habitats of the site. These habitats in some parts of the County also are known to support the federally threatened Bay Checkerspot butterfly (*Euphydryas editha bayensis*). This latter species has not been observed on the site and is considered unlikely to occur here due to a lack of known populations in the site's immediate vicinity; but, this species larval host plants, California plantain (*Plantago erecta*) and owl's-clover (*Castilleja* spp.) are present in this habitat and to our knowledge, focused surveys for this species have not been conducted on the site.

2.1.5 Wetlands, Ponds and Other Aquatic Habitats

The site supports a diverse array of wetland types including natural and manmade ponds with emergent vegetation; freshwater marsh; and seasonal wetlands, the latter including seep springs and serpentine seeps. In total, the various wetlands and ponds encompassed approximately 50 acres based on a wetland delineation completed by LOA in 2005 (the delineation has not been verified by USACE). Seasonal wetlands of the site vary considerably in their size and biological importance. Most are small and support vegetation dominated by non-native wetland species. The marsh habitat occurring in the eastern portion of the site, encompassing 18 acres; however, was observed to support a diversity of native wetland plants during the 2005 delineation effort, including slough sedge (*Carex obnupta*); spike rush (*Eleocharis macrostachya*), threesquare (*Scirpus americanus*); California tule (*Scirpus californicus*), and tall flat sedge (*Cyperus eragrostis*).

Amphibian species potentially using the aquatic habitats of the site include, but are not limited to, Pacific tree frogs and western toads (a large number of juvenile western toads were observed in Tick Creek during the 2005 delineation effort). California red-legged frogs and California tiger salamanders are known to breed in some of the aquatic features of the site.

Avian species were observed utilizing these wetland areas during the June and July 2004 surveys, during the wet season, several species would be expected to forage in this habitat for amphibian and invertebrate prey including the great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*).

In addition to the wetlands, the site supports four USGS blue line streams: Tar Creek, Sycamore Creek, Tick Creek and Sargent Creek. Only Tar Creek is perennial (although mostly dry during the last site visit in June 2014 due to two years of drought conditions). In addition to the blue line features, the site supports many seasonal drainage channels with defined beds and banks and evidence of an Ordinary High Water mark. Most of the creeks and drainages of the site would be considered jurisdictional by the USACE and RWQCB to the extent of the Ordinary High Water mark on opposing banks; and most would also be considered jurisdictional by CDFW to the top of the bank or the dripline of riparian vegetation, whichever is greater.

2.1.6 Redwood Forest

A small amount of redwood (*Sequoia sempervirens*) forest occurs in the extreme northwestern corner of the site along Pescadero Creek, estimated at about five acres. Common plant species occurring in redwood forests may include species such as California bay-laurel (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), and white alder (*Alnus rhombifolia*). Common understory plant species may include shrubs such as tanoak (*Lithocarpus densiflorus*), scrub oak (*Quercus berberidifolia*), California huckleberry (*Vaccinium ovatum*), California wax-myrtle (*Morella californica*), thimbleberry (*Rubus parviflorus*), wartleaf buckbrush (*Ceanothus papillosus*), and blueblossom (*Ceanothus thyrsiflorus*), as well as herbaceous species including maidenhair fern (*Adiantum jordanii*), licorice fern (*Polypodium glycyrrhiza*), wood fern (*Dryopteris arguta*), western sword fern (*Polystichum munitum*), creeping wild ginger (*Asarum caudatum*), redwood sorrel (*Oxalis oregano*), and alumroot (*Heuchera micrantha*).

Redwood forests provide important habitat for wildlife. The cool, damp shade of the woodland floor provides habitat for amphibians such as the California newt (*Taricha torosa torosa*), arboreal salamander (*Aneides lugubris*), black salamander (*Aneides flavipunctatus*), and Pacific tree frog. Reptiles that may occur in this habitat include the western skink, sharp-tailed snake (*Contia tenuis*), and California mountain kingsnake (*Lampropeltis zonata*).

Birds expected to occur in this habitat include Steller's jays (*Cyanocitta stelleri*), dark-eyed juncos (*Junco hyemalis*), sharp-shinned hawk (*Accipiter striatus*), northern flicker (*Colaptes auratus*), Pacific-slope flycatcher (*Empidonax difficilis*), chestnut-backed chickadee (*Poecile rufescens*), and brown creeper (*Certhia americana*).

Mammals that may occur in this habitat include the Virginia opossum, western grey squirrel, coyote, grey fox, raccoon, striped skunk, cougar, bobcat, and black-tailed deer.

2.1.7 Other Land Uses

Other land uses on the site include a rural residence and associated outbuildings, including a barn and corrals; hay fields; and oil drilling.

2.2 SANTA CLARA VALLEY HABITAT CONSERVATION PLAN

Ecologists and resource economists have longed attempted to place a monetary value on natural lands as a way to justify their preservation/conservation goals and strategies. No simply process exists. However, locally, we can rely on two recent efforts (i.e., *The Healthy Lands & Healthy Economies Initiative* and *The Santa Clara Valley Habitat Plan*) to help characterize and justify the methods to value natural lands. Without any question, the Sargent Ranch supports extremely important mosaic of natural habitats, habitats that are regionally at risk such as aquatic/wetland resources (streams, riparian habitats, seasonal wetlands/drainages, etc.), sensitive plant and wildlife species, and landscape connectivity (i.e., connectivity amongst the Santa Cruz Mountain Range, Gabilan Range and in-directly with the Diablo Range, and Coast Range). As such, the conservation value of the Sargent Ranch is substantial as it enhances ecosystem services throughout this region of California.

The Healthy Lands & Healthy Economies Initiative (Schwartz et al. 2014) concludes that open space in Santa Clara County provides between \$1.6 and \$3.8 billion in benefit to people each year. This analysis asserts that the County's natural capital asset value is as high as \$386 billion. As would be expected, they put a premium on wetland/riparian habitats as these habitats are valued several times higher than other habitats such as deciduous forest, evergreen forest, mixed forest, scrub/shrub, grassland, etc.

The Santa Clara Valley Habitat Plan (SCVHP) is a regional Habitat Conservation Plan (approximately 519,506 acres of Santa Clara County) that is designed to allow for planned development while providing for large scale conservation planning and preservation. The SCVHP's purpose is to protect, enhance and restore natural resources in the Plan Area, of which the lands of the Sargent Ranch in Santa Clara County are included.

While it is not at all difficult to accept that the habitats and location of the Sargent Ranch are important and valuable to meeting the SCVHP's goals of protect, enhance and restore conservation lands that provide the ecosystem services the Ranch is capable of doing, it becomes a bit more challenging in valuing those lands. Therefore, the most parsimonious approach, is to simply rely on the cost models developed by the SCVHP for estimating the value of different habitats as the foundation for establishing a baseline monetary value of the Ranch.

In Table 2 we have provided the development fees and specialty fees that likely would be required to be paid if the ranch were proposed for development. According to the HCP's Geobrowser, the ranch is considered a "moderate priority" for protection. The vast majority of the ranch property occurs within Fee Zone A (Ranchlands and Natural Lands), with a corresponding development fee per acre of \$17,028 (per the current 2014/2015 fee schedule).

Table 2: HCP Land Cover Development Fees and Specialty Fees			
Land Cover	Acreages	Fee Per Acre	Total Fees
Fee Zone A: Ranchlands and Natural Lands	5202.4	\$17,028.00	\$88,586,467
Fee Zone B: Agricultural and Valley Floor Lands	97.5	\$11,806.00	\$1,151,085
No Fee Zone Lands: Urban/Suburban and Rural Residential	11.5	\$0	0.00
Total Land Cover Fees			\$89,737,552
Specialty Fees	Acreages	Fee Per Acre	Total Fees
Serpentine	32.9	\$55,410.00	\$1,822,989
Willow Riparian Forest and Mixed Riparian	263.5	\$142,838.00	\$37,637,813
Seasonal Wetland (includes 0.6 acres of serpentine seep)	22.2	\$383,238.00	\$8,507,883
Coastal and Valley Freshwater Marsh	18.3	\$175,159.00	\$3,205,410
Pond	9.8	\$156,755.00	\$1,536,199
Total Specialty Fees			\$52,710,294
Streams	Linear Feet	Fee per Linear Foot	Total Fees
Category 1 Streams	27,521	\$601	\$16,540,121
Total Stream Fees			\$16,540,121
Total HCP Fees			\$158,987,967

In addition to Land Cover Fees; the HCP sets forth additional "specialty fees" for certain habitats that are considered particularly valuable and of a high priority for protection. These include seasonal wetland, freshwater marsh, riparian, pond, stream, and serpentine habitats. Therefore, in addition to Land Cover Fees, in Table 2 we have also provided the additional specialty fees that likely would have to be paid in addition to Land Cover Fees under the HCP. Habitats occurring on Sargent Ranch study area that would be subject to additional specialty fees include serpentine, freshwater marsh, seasonal wetland, pond, willow riparian, mixed riparian, and stream.

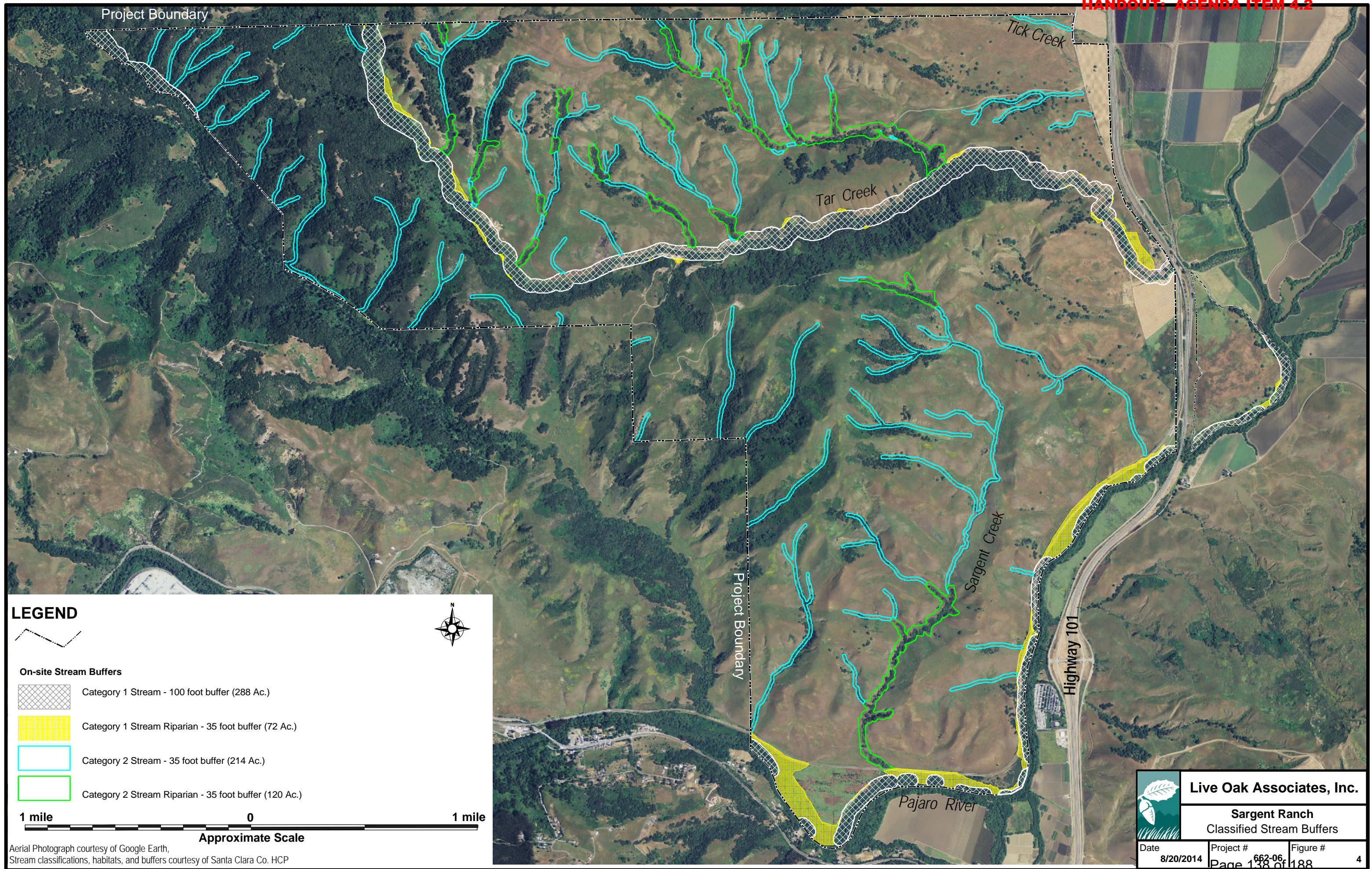
It should be noted that we have only included Category 1 streams in Table 2. Category 1 streams are streams that are actually identified in the HCP Geobrowser; and are defined in the HCP (Condition 11, pg. 6-47):

“Category 1. This stream type has sufficient flow to support covered species and riparian habitat. These streams include perennial streams and some intermittent streams. These streams are typically larger than ephemeral drainages and support movement of covered species along the length of the stream. The ability of these streams to also support healthy riparian habitats bolsters the ecological value of the stream. This category also includes all in-channel ponds downstream of reservoirs.”

Category 1 streams on the site include Tar Creek, Sargent Creek and the Pajaro River. However, based on the 2005 wetland delineation conducted on the site by LOA, the site also supports a high number of intermittent and ephemeral drainages that have a defined bed and bank and evidence of an Ordinary High Water mark. Most of these drainages do not support riparian vegetation or wetland vegetation; but we believe that they may meet the definition of a Category 2 stream under the HCP. Category 2 streams are defined under the HCP (Condition 11, pg. 6-47):

“Category 2. This stream type may not have sufficient flow to support covered species and riparian habitat. These streams include all ephemeral streams and some intermittent stream reaches. These reaches provide minimum support of water-quality functions and primary breeding habitat for covered species. Category 2 streams are not specifically mapped as part of the Habitat Plan. They include both identified streams (named creeks and USGS blueline creeks) that are not classified as Category 1 streams (as shown in Figure 6-2) and other unmapped streams that meet the “Criteria to Verify or Identify a Watercourse as a Stream” as defined below.”

The HCP goes on to provide three criteria to determine whether a stream course meets the definition of a Category 2 stream, including hydrologic connectivity; a defined bed and bank; and topographic position. We have calculated approximate linear feet of potential Category 2 streams that appear to meet the three criteria as 166,561. HCP specialty fees for both Category 1 and Category 2 streams are \$601 per linear foot of impact, including impacts within the stream set back, even if there is no direct impact to the stream itself. Figure 4 depicts Category 1 and potential Category 2 streams on the site, along with stream setbacks that would be required based on their classification under the HCP.



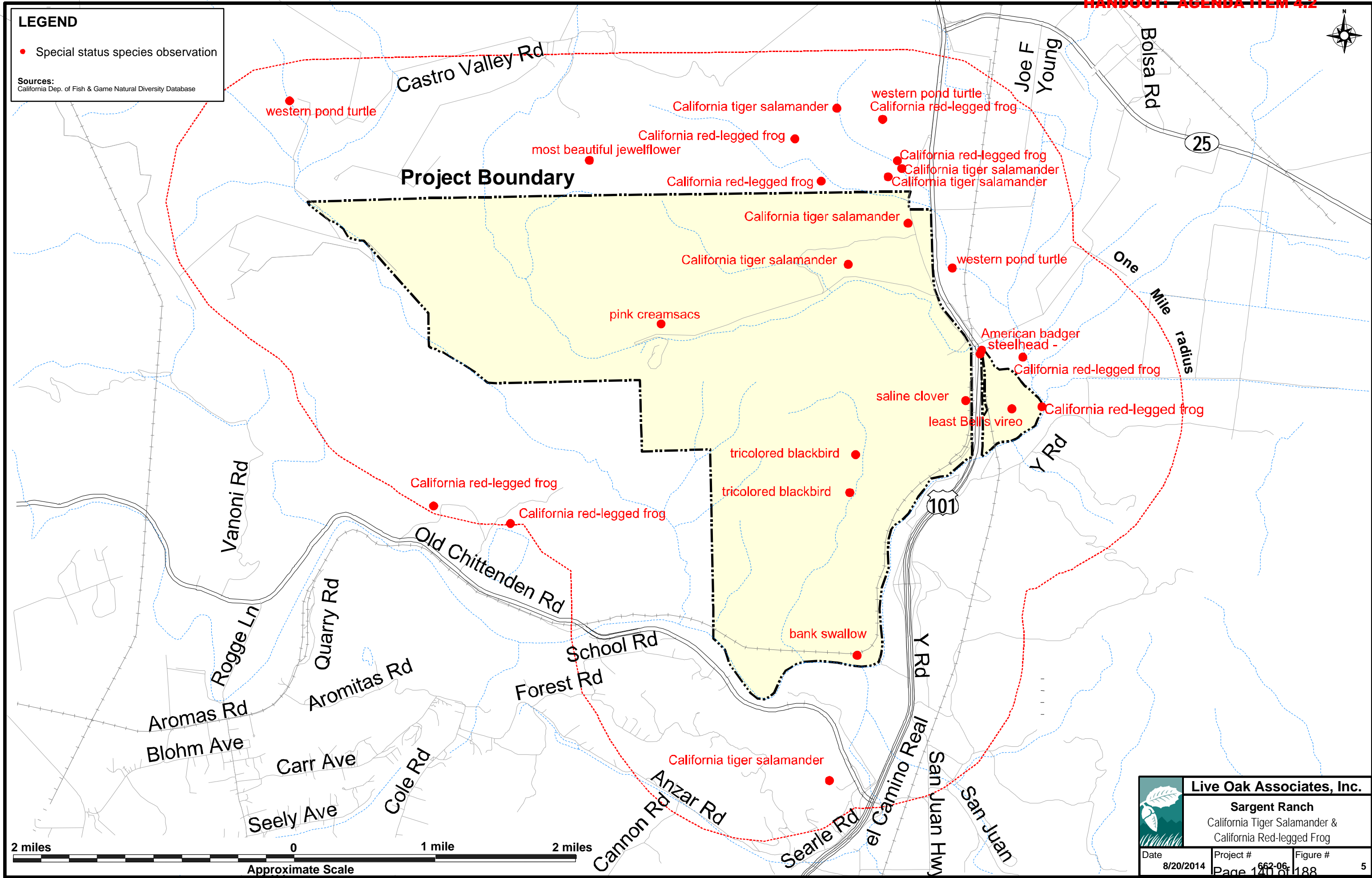
2.3 SPECIAL STATUS PLANTS AND ANIMALS

A number of special status plants and animals occur in the vicinity of the study area, and several of these species have been confirmed to be present on the site. These species, and their occurrence, or potential occurrence, in the study area, are listed in Table 3 on the following pages. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), *California Natural Diversity Data Base* (CDFW 2014), *Endangered and Threatened Wildlife and Plants* (USFWS 2014), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFW 2014), *The California Native Plant Society's On-line Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014); and surveys conducted on the site by both LOA and PNWB. This information was used to evaluate the occurrence, or potential occurrence, of special status plant and animal species onsite. Figure 5 shows the location of special status species found by the California Natural Diversity Data Base (CNDDB) within a one-mile radius of the project site.

LEGEND

- Special status species observation

Sources:
California Dep. of Fish & Game Natural Diversity Database



Live Oak Associates, Inc.

Sargent Ranch

California Tiger Salamander &
California Red-legged Frog

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8/20/2014

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Table 3: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014; as well as surveys conducted on the site by LOA and PNWB).

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Santa Clara Valley Dudleya <i>Dudleya abramsii</i> ssp. <i>setchellii</i>	FE, CNPS 1B.1	Occurs within cismontane woodland and valley and foothill grasslands on rocky serpentine soils at elevations between 60-455 meters. Blooms April–October.	Unlikely. There are no known occurrences of this species in the immediate site vicinity. Potential habitat for the species does occur within serpentine outcrops on the site; and dudleya do occur here on the site, but they have been identified by both PNWB and LOA biologists as the common dudleya which occurs both on and off serpentine.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014; as well as surveys conducted on the site by LOA and PNWB).

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Pink Creamsacs <i>Castilleja rubicundula</i> var. <i>rubicundula</i>	CNPS 1B.2	Occurs on serpentine soils within chaparral, cismontane woodland, meadows and seeps, and valley and foothill grasslands between 20- 900 meters. Blooms April– June.	Possible. Observed on the site in 1992 on the north side of Tar Creek and focused special status plant surveys have not been conducted in this area and in other potentially suitable habitats on the site.
Mt. Hamilton Fountain Thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	CNPS 1B.2	Occurs in serpentine seeps at elevations between 100-890 meters.	Unlikely. Although potential habitat for this species occurs within serpentine seeps in the northwestern portion of the site, this perennial species would likely have been observed if present in the seeps during the 2005 wetland delineation and it was not observed.
Hoover's Button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	CNPS 1B.1	Occurs in vernal pools between 3-45 meters in elevation. Blooms in July	Possible. This species has been observed in the site's vicinity but not on the site itself; however, focused special status plant surveys have not been conducted on the site in all potentially suitable habitats.
Smooth Lessingia <i>Lessingia micradenia</i> var. <i>glabrata</i>	CNPS 1B.2	Occurs on serpentine soils within grassland and chaparral at elevations between 120-420 meters. Blooms July-November.	Possible. Although this species has not been observed on the site or in the site's immediate vicinity, serpentine grasslands of the site provide potential habitat for this species and focused surveys have not been conducted in the serpentine habitats of the site.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2014 and CNPS 2014; as well as surveys conducted on the site by LOA and PNWB).

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Loma Prieta Hoita <i>Hoita strobilina</i>	CNPS 1B.1	Occurs in grassland, chaparral, cismontane woodland, riparian woodland, often on serpentine, at elevations between 30-860 meters. Blooms May-October.	Possible. This species has been observed in the site's vicinity but not on the site itself; however, focused special status plant surveys have not been conducted on the site in all potentially suitable habitats.
Most Beautiful Jewelflower <i>Streptanthus albidus ssp. peramoenus</i>	CNPS 1B.2	Occurs in serpentine chaparral, cismontane woodlands, and valley and foothill grasslands at elevations between 110-1000 meters. Blooms March-October	Possible. This species has been observed in serpentine habitat to the immediate north of the site and habitat is present on the site. Focused surveys for special status plants have not been conducted in the serpentine habitats of the site.
Saline Clover <i>Trifolium hydrophilum</i>	CNPS 1B.2	Marshes and swamps, alkaline valley and foothill grasslands, vernal pools, between 0 to 300 m. Blooms April to June.	Possible. There was a 1998 collection of this species near Highway 101 in the easternmost portion of the ranch and focused surveys for special status plants have not been completed for this portion of the site or for other areas of the site that also provide potential habitat for this species.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Bay Checkerspot Butterfly <i>Euphydryas editha bayensis</i>	FT	Endemic to serpentine habitats of the SF Bay Area. Requires presence of larval host plants (<i>Plantago erecta</i> and <i>Castilleja</i> ssp.).	Unlikely. There are no known occurrences of this species in the project vicinity; however, the larval host plants (<i>Plantago erecta</i> and <i>Castilleja</i> sp.) are present within the serpentine grasslands of the site and as far as we are aware, no focused surveys for this species have been conducted in these habitats.
Steelhead <i>Onchorhynchus mykiss irideus</i>	FT, CSC	Migrate up fresh water rivers or streams in the spring and spend the remainder of the time in the ocean.	Present. Numerous steelhead juveniles were documented in Tar Creek during surveys conducted by PNWB in 2000-2001; and adult steelhead were observed in Tar Creek near the Highway 101 overpass. Resident rancher confirms adult steelhead in Tar Creek during above average rainfall years.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
California Tiger Salamander <i>Ambystoma californiense</i>	FT, CT	Breeds in vernal pools and stock ponds of central California; adults estivate in grassland habitats adjacent to the breeding sites.	Present. CTS have been documented breeding on the site during surveys conducted by PNWB in 2000-2001 and by LOA in 2004-2005. One of the ponds was confirmed by PNWB to support eastern tiger salamanders and hybrids of eastern and California tiger salamanders.
California Red-legged Frog <i>Rana draytonii</i>	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	Present. CRLF have been documented on-site in ponds and tributaries of Pescadero Creek, Tar Creek, Tick Creek and Sargent Creek during surveys conducted by PNWB in 2000 and 2001 and by LOA in 2004 and 2005.
Bald Eagle <i>Haliaeetus leucocephalus</i>	CE	Nests and roosts near water bodies with consistent fish supply (eagle's main food source). Builds nests in tall trees or on cliffs.	Present. A pair of eagles was observed on the site for an approximate four month period during the winter and spring in 2000, but no eagles have been observed on the site since.
Bank Swallow (nesting) <i>Riparia riparia</i>	CT	Colonial nester on vertical cliffs and banks near riparian or coastal habitats. Requires sandy soils to excavate nest holes.	Present. A single bank swallow was observed foraging on the site by PNWB biologists. Although no nesting activity was observed, potential breeding habitat is present on the site along banks of Sargent Creek.
Least Bell's Vireo <i>Vireo bellii pusillus</i>	FE, CE	Occurs in southern California during the breeding season March, migrates out of the state July through September. Dense brush, mesquite, or cottonwood-willow forests in riparian areas.	Possible. Although the last sighting of this species on the site was in 1932, this species is known to occur in the site's vicinity and willow-dominated riparian habitats of the site provide potential nesting habitat for this species.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Western Spadefoot <i>Spea hammondi</i>	CSC	Found in areas that support temporary pools in sand and gravel substrates, often associated with short grassland, coastal sage scrub and chaparral. From Shasta County south through Central Valley and along central and southern coastal range to Baja. Feeds mainly on mosquito larvae.	Possible. PNWB potentially identified this species by vocalization during 2000-2001 surveys and the site provides potential habitat for this species.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Foothill Yellow-legged Frog <i>Rana boylei</i>	CSC	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	Possible. Although never observed on the site, potential habitat for this species occurs within Tar Creek and Sargent Creek.
Western Pond Turtle <i>Clemmys marmorata</i>	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Present. This species has been observed in a pond in the eastern portion of the site near Highway 101 and potential habitat for this species also occurs within Tar Creek and ponds associated with Sargent Creek.
Northern Harrier <i>Circus cyaneus</i>	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats	Present. This species has been observed foraging over the site during PNWB and LOA surveys, although no nesting activity has been observed on the site.
White-tailed Kite <i>Elanus leucurus</i>	CP	Prefers open grasslands and agricultural areas throughout central California, though can also be found in riparian areas with adjacent open grasslands. Uses a variety of trees and large shrubs for nesting.	Present. This species has been observed foraging over the site during PNWB and LOA surveys, although no nesting activity has been observed on the site.
Golden Eagle <i>Aquila chrysaetos</i>	CSC	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Present. Golden eagles have been observed foraging over the site during both PNWB and LOA surveys on several occasions and the site provides suitable nesting habitat for this species.
Peregrine Falcon <i>Falco peregrinus anatum</i>	CP	Requires cliffs for nesting and forages in a variety of habitats.	Present. PNWB observed falcons foraging on the site during 2000 and 2001 surveys. Although no nests were observed, nesting habitat does occur on the site.
Burrowing Owl <i>Athene cunicularia</i>	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Present. The site supports suitable habitat (e.g., ground squirrel burrows) for burrowing owls, and species has been observed foraging on the site and possibly winter roosting on the site by both PNWB and the resident rancher; although no nesting activity has been observed on the site.
Short-eared Owl <i>Asio flammeus</i>	CSC	Occurs in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	Possible. The site provides both nesting and foraging habitat for this species.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Long-eared Owl <i>Asio otus</i>	CSC	Occurs in edge habitats including in clumps of trees or at edges of open forests that are adjacent to grasslands, shrublands, wetlands, marshes, and farmlands. Utilizes stick nests built by other birds in trees.	Possible. The site provides both nesting and foraging habitat for this species.
Black Swift (nesting) <i>Cypseloides niger</i>	CSC	Nests on cliffs near the ocean or other aquatic habitat. Forages for insects over a variety of habitats.	Possible. Nesting habitat is marginal on the site, but this species may forage over the site.
Vaux's Swift (nesting) <i>Chaetura vauxi</i>	CSC	Nests in coniferous and deciduous forests and forages for insects over a variety of habitats.	Possible. Nesting habitat is absent from the site, but this species may forage over the site.
Olive-sided Flycatcher (nesting) <i>Contopus cooperi</i>	CSC	Frequents coniferous forests, especially with tall standing dead trees. They prefer spruce, fir, balsam, pine, or mixed woodlands near edges and clearings, wooded streams, swamps, bogs, edges of lakes or rivers.	Present. Olive-sided flycatchers have been observed on the site during surveys by LOA and PNWB; however, nesting habitat is absent on the site for this species.
Loggerhead Shrike <i>Lanius ludovicianus</i>	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Present. This species was observed by LOA foraging on the site on several occasions and the site provides good quality nesting habitat for this species.
Yellow-breasted Chat (nesting) <i>Icteria virens</i>			Present. PNWB observed this species on the site during surveys in 2000.
Tricolored blackbird <i>Agelaius tricolor</i>	CSC	Breeds near fresh water in dense emergent vegetation.	Possible. There are two CNDDDB occurrences of this species on the site, nesting in emergent vegetation of stock ponds adjacent to Sargent Creek from 1980 and 1989; and the marsh and pond vegetation in the southeastern area of the main quarry site may provide potential nesting habitat for this species.
Pallid Bat <i>Antrozous pallidus</i>	CSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas that provide roosting opportunities.	Possible. Roosting and foraging habitat are present on the site.
Western Red Bat <i>Lasiurus blossevillii</i>	CSC	Roosts primarily in trees. Prefers habitat edges and mosaics with trees.	Possible. Roosting and foraging habitat are present on the site.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2014 and USFWS 2014)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Western Mastiff Bat <i>Eumops perotis californicus</i>	CSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Possible. Roosting and foraging habitat are present on the site.
American Badger <i>Taxidea taxus</i>	CSC	Occurs in grasslands, and open areas of scrubland and forests with friable soils that are uncultivated.	Present. According to the resident rancher, this species occurs in fields near the ranch house as well as in the extreme southern portion of the site. Most of the grasslands of the site appear to support potential habitat for this species.
Ringtail <i>Bassariscus astutus</i>	CP	Occurs mainly in riparian and heavily wooded habitats near water.	Likely. Good quality habitat for this species occurs within the riparian woodlands associated with Tar Creek and Sargent Creek; and PNWB tentatively identified the prints of this species in riparian areas of the site.
San Francisco Dusky-footed Woodrat <i>Neotoma fuscipes annectens</i>	CSC	Found in hardwood forests, oak riparian and shrub habitats.	Possible. This species and its nests have not been observed on the site; but riparian woodlands of the site support good habitat for this species and woodrat nests have been observed along the Pajaro River to the east of the site; although which subspecies these nests belong to is not known.

Present: Species observed on the site at time of field surveys or during recent past.

Likely: Species not observed on the site, but is expected to occur there because suitable habitat is present.

Possible: Species not observed on the site, but it could occur there from time to time.

Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a Transient.

Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE Federally Endangered
FT Federally Threatened
FPE Federally Endangered (Proposed)
FC Federal Candidate

CE California Endangered
CT California Threatened
CR California Rare
CP California Protected
CSC California Species of Special Concern

CNPS California Native Plant Society Listing
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 Plants about which we need more information – a review list
4 Plants of limited distribution – a watch list

2.4 SPECIAL STATUS ANIMAL SPECIES CONFIRMED TO OCCUR ON THE PROJECT SITE DESERVING ADDITIONAL DISCUSSION

The site is known to provide habitat, including breeding habitat, for several animal species covered under the federal and/or state Endangered Species Acts, including steelhead (*Oncorhynchus mykiss irideus*) (Federally Threatened), California red-legged frog (*Rana draytonii*) (Federally Threatened), and California tiger salamander (*Ambystoma californiense*) (Federally Threatened and State Threatened). A variety of other animal species with varying legal status have also been observed on the site during surveys conducted by PNWB and LOA or as documented in the CNDDDB, including the western pond turtle (*Emys marmorata*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus anatum*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), black swift (*Cypseloides niger*), bank swallow (*Riparia riparia*), and American badger (*Taxidea taxus*). In addition to providing habitat for special status species, the site supports an abundance of habitat for more common species. Approximately 350 species of plants have been documented on the site (Appendix A); and more than 100 wildlife species have been observed using the habitats of the site (Appendix B). Additional discussion of some of the special status species occurring on the site is provided below.

2.4.1 Steelhead Trout (*Oncorhynchus mykiss*). Federal listing status: Threatened; State listing status: None.

The steelhead that occur in the study site region are considered a part of the Central California Coast Evolutionarily Significant Unit (ESU). This ESU encompasses all naturally spawned steelhead populations occurring in river basins from the Russian River, located north of San Francisco Bay, down to Soquel Creek in Santa Cruz County, as well as all populations within drainages of the San Francisco and San Pablo Bays (steelhead occurring in the Sacramento-San Joaquin River Basin of the Central Valley are excluded from this ESU) (NMFS 1996). The Central California Coast ESU received its listing status as Threatened under FESA on August 18, 1997.

In addition to the listing of species and subspecies, FESA allows for the listing of "distinct population segments" of vertebrate species. In the case of population segments of anadromous

salmonids such as the steelhead, a population is considered “distinct” if it represents “an evolutionarily significant unit (ESU) of the species as a whole”. To be considered an ESU, a population or group of populations must meet two criteria. First, it must be, to a substantial degree, reproductively isolated from other populations and, secondly, it must contribute substantially to the ecological or genetic diversity of the species (NMFS 1996).

The major threats to the Central California Coast ESU were determined to be related to a loss of habitat quality due to poor land use management practices leading to floods and an increase in the deposition of sediments into streams (NMFS 1996).

The species name *Oncorhynchus mykiss* refers both to the steelhead trout and to the rainbow trout, the difference being that unlike the rainbow trout which spends its entire life within freshwater systems, the steelhead is anadromous, spending the majority of its life in the ocean, only migrating up freshwater streams and rivers in order to spawn.

Salmonid fishes can best be identified by their fin characteristics and by the presence of a dark lateral line across the body. All salmonids possess a single dorsal fin plus an adipose fin, abdominal pelvic fins, and all of these fins lack spines (USFWS 1986, Page and Burr 1991). Adult steelhead and rainbow trout are further identified from other salmonids by small, irregular black spots on their back and on most fins, as well as by the distinct rows of black spots on their caudal fins. Adult steelhead can reach a size of 45 inches and their coloration can vary from blue to brown above and from silver to pale yellowish-green below (USFWS 1986, Page and Burr 1991). At sea, adult steelhead tend to have different coloration than rainbow trout, being much darker in color and lacking the pinkish lateral band, however, once they enter freshwater, the steelhead develops coloration very similar to the resident rainbow's and are difficult to distinguish (USFWS 1986). Juvenile steelhead and juvenile rainbow trout can not be distinguished from one another but both can be identified from other juvenile fish species by five to ten dark, oval parr marks which are widely spaced (Page and Burr 1991).

Life History. Steelhead require adequate migration conditions both for spawning adults as well as for out-migrating smolts. Adult migration passage occurs in the study site region from winter through early spring, typically January through April, when passage may be facilitated by heavier winter flows, however, migration can begin as early as December. Adult passage can be

adversely affected by manmade barriers such as dams and other within-channel structures and also as a result of flood control measures which have altered the normal hydrologic regime by reducing winter flows (Smith, *pers. comm.*).

North American steelhead most commonly spend two years in the ocean prior to migrating into freshwater to spawn, however, it is not unusual for some fish within populations of California and Oregon to spend only one year in the ocean prior to spawning (NMFS 2012). The steelhead is somewhat unique from other anadromous salmonids in that it can spawn more than once, a trait known as “iteroparity” (NMFS 2012). Steelhead spawning habitat is characterized by cool, clear, well-oxygenated streams that have a suitable depth, velocity and substrate size (USFWS 1986). Females lay eggs in depressions (“redds”) which they excavate in clean gravel substrates. The eggs are then fertilized by the male and immediately covered by the female. Spawning can occur in both perennial and seasonal streams, however young hatched in seasonal streams will migrate to perennial streams soon after hatching (NMFS 2012). Steelhead embryos are extremely sensitive to the dissolved oxygen concentration within the gravels of the redds, with an approximate concentration of 7.2 mg/L representing the lower limit of tolerance. The amount of oxygen reaching the embryo is a function water velocity passing through the gravels of the redds, which in turn can be affected by the permeability of the gravels. Studies have found that hatching success rate increases in more permeable gravels, with the greatest success occurring in gravels with less than 5 percent by volume of sand and silt (NMFS 2012). The amount of oxygen within the gravels can also be significantly reduced if they contain a large amount of decaying organic matter (NMFS 2012). Embryos develop much more slowly at low intra-gravel oxygen levels and generally result in weaker, smaller fry which are more vulnerable to mortality. Increased deposition of fine sediments into spawning streams can therefore have a significant adverse affect on the survival of both steelhead embryos and juveniles.

The length of time before steelhead eggs hatch is determined by several factors including stream temperature and dissolved oxygen concentrations, but typically occurs 19 to 80 days after the eggs are laid (NMFS 2012). The young steelhead then remain in the gravel substrate for two to three weeks before making their way to the substrate surface. Upon emergence, the young typically remain in shallow water near the stream edge where they form schools but as they become older, individual fish will separate from these schools to establish and defend a territory.

The size of an individual's territory is largely dependent on Mortality is high for juvenile steelhead during the first months after emergence. The young are predated upon by other fish including larger juvenile steelhead, sculpins (*Cottus* sp.) and rainbow trout; by birds such as great blue herons and belted kingfishers; by reptiles such as garter snakes (*Thamnophis* sp.) and by various mammals (NMFS 2012).

Juvenile steelhead prey on a variety of drifting aquatic and terrestrial invertebrates (NMFS 2012). They are sight-feeders and their ability to locate food is substantially hindered by turbid or low light conditions. Rearing can occur either in cool tributary waters or in warm, downstream habitats where food availability is high (Smith *pers. comm.*). In warmer waters with abundant food, the juveniles may actually grow more quickly than those in cooler environments because warmer temperatures will increase both digestion and metabolism. Optimum environmental temperatures for fish rearing is dependent upon several factors including food availability, the season, oxygen availability and the life stage of the fish (Smith, *pers. comm.*) but productive summer stream temperatures should be somewhere in the range of 10 to 15 degrees C (50 to 60 degrees F) (USFWS 1986). Steelhead have difficulty extracting oxygen from the water at any temperature above 20 degrees C (68 degrees F) regardless of how oxygen-rich the water is and temperatures above 24 degrees C (75 degrees F) are generally lethal. Unfortunately, the availability of rearing habitat for steelhead has been substantially reduced due to several anthropogenic factors including stream channel alteration, alteration of hydrologic regimes (water diversions and flood control measures), and increased sediment deposition due to poor land management practices (NMFS 2012).

Excessive sediment deposition has been determined to adversely impact juvenile steelhead both when held suspended in the water column or when deposited on the channel bed. Turbidity such as that caused by suspended particles can impair the ability of juveniles to located and capture prey, and fine sediments deposited over larger substrates in the channel bed also reduces food availability by decreasing invertebrate prey populations. If suspended particles reach certain concentrations, steelhead can also suffer direct physiological damage to their gill filaments (NMFS 2012).

Juveniles will typically remain in freshwater for two years prior to smolting and migrating to the ocean. The average size of the fish at the time of smolting will be about eight inches (NMFS 2012) and the outmigration typically occurs from March through May. A major roadblock to successful passage of smolts includes low spring stream flows, often a result of freshwater diversions and ground water percolation operations (Smith, *pers. comm.*). The majority of their growth to sexual maturity occurs in the ocean where adult fish in the region typically reach a size of 23 inches after two years (NMFS 2012).

Occurrence on the Site. During PNWB 2000 surveys, the presence of high numbers of juvenile steelhead, including both first year and second year juveniles, were confirmed to be present throughout the entire length of Tar Creek on the ranch. The resident rancher also confirms observing adult steelhead in Tar Creek during above-average rainfall years.

2.4.2 California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened.

Life History and Ecology. The California tiger salamander is a large terrestrial salamander, with adults attaining a total length of over 8 inches (203 millimeters) [Stebbins 1951]. Dorsally, the background color appears to be jet black--normally with an overlain pattern of white or yellow spots, or bars (Stebbins 1985; Petranka 1998). Adult California tiger salamanders breed from late November through February, following the onset of winter rains (Storer 1925; Barry and Shaffer 1994). Both males and females travel up to 1 mile (1.6 km) or more during nocturnal breeding migrations from subterranean refuge, or aestivation, sites (i.e., small mammal burrows) to egg deposition sites in long-lasting, rain-filled vernal pools (Twitty 1941; Lored et al. 1961; Andersen 1968; Austin and Shaffer 1992).

Embryos of California tiger salamanders hatch in approximately 14-28 days after being laid and the resulting gilled, aquatic larvae [0.41-0.43 inches (10.5-11 mm) in length] require a minimum of about 10-12 weeks to complete development through metamorphosis (Storer 1925; Twitty 1941). Following metamorphosis (normally from early May through July), juveniles emigrate en masse at night into small mammal burrows or deep cracks in the soil, which they use as refugia during the hot summer and fall months (Shaffer et al. 1993; Lored et al. 1996).

Anecdotal evidence indicates that salamanders have a high degree of site fidelity to their breeding ponds and also to the small mammal burrows they use for refugia (Shaffer et al. 1993). Sites used for reproduction are typically natural pools that fill with rainwater and artificial stock ponds; however, salamanders have also been observed to breed in springs, wells, artificial reservoirs, quarry ponds, man-made canals, and rarely, in the slack waters of oxbows in small- to medium-sized streams. Such sites may, or may not contain dense amounts of aquatic and streamside vegetation. The highest numbers of larvae appear to occur in aquatic habitats that are largely devoid of any vegetation and contain very turbid water. Salamanders may also turn up in certain man-made structures (e.g. wet basements, wells, swimming pools, underground pipes, and septic tank drains), sometimes many years after their local breeding site has been destroyed by urbanization (Storer 1925; Pickwell 1947).

Juvenile and adult salamanders typically use the burrows of California ground squirrels and pocket gophers as underground refugia (Storer 1925; Jennings and Hayes 1994; Jennings 1996; Loredó et al. 1996) but may use a variety of burrows including cracks within the soil that may extend up to 15 feet (4.6 m) deep from the soil surface (Jennings, unpub. data). Juvenile and adult salamanders are especially common in situations where piles of concrete, rock, or other rubble are mixed with dirt and are located near breeding sites (Jennings, unpub. data). Findings from the limited research on the species suggest that 95% of a CTS population estives within 2,000 feet of a breeding pond and that 99% of the breeding population estives within 0.7 miles of a breeding pond; however, the USFWS considers suitable habitat within 1.3 miles of a known breeding pool to constitute potential upland habitat for the salamander.

Occurrence on the Site. PNWB confirmed the presence of breeding populations of CTS in three locations on the ranch during their 2000-2001 surveys (Figure 5). These include the pond/seasonal wetland complex in the very northeastern corner of the site near Tick Creek. The latter location was also confirmed to support introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis). The



LEGEND

On-site Species Observations

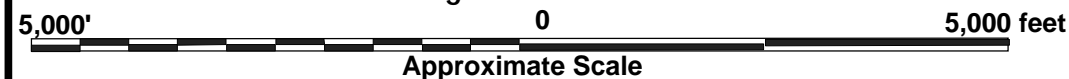
- CTS** California Tiger Salamander
- CRLF** California Red-legged Frog
- BF** Bullfrog
- ETS** Eastern Tiger Salamander
- WPT** Western Pond Turtle
- Fish** Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages



Sources:
 Santa Clara County HCP Land Cover
 Santa Clara County LIDAR Topographic Survey
 Pacific North Western Biological Resources Consultants, Inc. 2001.
 Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Live Oak Associates, Inc.		
Sargent Ranch Pacific North Western Special Status Species Findings from 2000-2001 Surveys		
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other two observances were within a pond adjacent to Sycamore Creek and an isolated drainage in the western portion of the site. CTS in the latter two locations appeared to be non-hybrid populations. Based on the USFWS' 1.3 mile radius for estivation habitat, it appears the vast majority of grasslands of the site could be considered estivation habitat for this species.

Potential CTS predators were found in other stock ponds of the site, including blue gill (*Lepomis macrochirus*) and bullfrogs (*Lithobates catesbiana*), and this may be why CTS do not occur in these other ponds, although many, in years of normal and above-normal rainfall, would appear to support a suitable hydrologic regime to provide breeding habitat for this species. During the January 2014 site visit to confirm existing conditions on the site, ponds were completely dry or almost completely dry due to two years of drought conditions in the region. While it is highly unlikely that CTS breeding would have occurred over the past two years, per Dr. Jennings, the drought may benefit CTS by killing off fish and knocking down bullfrog populations, and therefore make ponds more suitable for CTS breeding habitat in the future, although bullfrogs would be expected to recolonize these ponds in the future rather rapidly.

2.4.3 California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.

Life History. The California red-legged frog is the largest native frog in California, with adults attaining a length of 3.4-5.4 inches (85-138 mm) snout-to-vent length (SVL) (Jennings and Hayes 1994). On the dorsal surface, the background color varies from brown to gray to reddish-brown, normally with some dark mottling peppered around spots with light-colored centers (Stebbins 1985). The distribution of reddish pigment is highly variable, but is usually restricted to the groin and undersurfaces of the thighs, legs, and feet (Jennings and Hayes 1994). This red coloration is not diagnostic for species identification. Two distinctive, prominent folds of skin ("dorsolateral folds"), run in a complete line from the rear of the eyes to the groin. The groin has a distinctly mottled pattern of black on a light-colored background. Juvenile frogs range from 1.5-3.4 inches (40-84 mm) SVL and have the same coloration as adults except that the dorsolateral folds are normally yellow or orange colored (Stebbins 1985). This coloration is distinct even at a distance. Larval frogs range from 0.6-3.1 inches (14-80 mm).

Adult California red-legged frogs have been observed breeding from late November through early May after the onset of warm rains (Storer 1925, Jennings and Hayes 1994). Male frogs typically attract females by emitting low short calls in small mobile groups of 3-7 individuals (Jennings and Hayes 1994). Females move toward the calling groups and amplex a male. Following amplexus, the females move to chosen oviposition sites where they attach an egg mass of 2,000-6,000 moderate-sized (2.0-2.8 mm diameter) eggs to an emergent vegetation brace such as tule stalks, grasses, or willow roots located just below the water surface (Storer 1925, Livezey and Wright 1947). Once laid, the egg mass will swell with water for about 24 hours, finally reaching the size of a softball. Males usually remain at the breeding sites for several weeks after reproduction before moving to foraging habitats, while females immediately remove to foraging habitats.

California red-legged frog embryos hatch about 6-14 days following fertilization. The resulting larvae (8.8-10.3 mm) require 14-28 weeks to reach metamorphosis, which usually occurs between July and September, although there are scattered observations of overwintering larvae in perennial ponds such as at the arboretum at Golden Gate Park in San Francisco (Jennings, pers. obs). Tadpoles generally metamorphose at 65-85 mm total length (Storer 1925) and the newly emerged juvenile frogs are generally 25-30 mm SVL. Larvae are thought to graze on algae, but they are rarely observed in the field because they spend most of their time concealed in submergent vegetation, algal mats or detritus (Jennings and Hayes 1994). Post-metamorphic frogs grow rapidly feeding on a wide variety of invertebrates.

Males typically reach sexual maturity at 2 years and females at 3 years; however, frogs of both sexes may reach sexual maturity in a single year if resources are sufficient (Jennings, unpub. data). Conversely, frogs may take 3-4 years to reach maturity during extended periods of drought (Jennings and Hayes 1994). Based on limited field data, California red-legged frogs appear to live up to 10 years in the wild (Jennings, unpub. data). Adult frogs apparently eat a wide variety of animal prey including invertebrates, small fishes, frogs, and small mammals.

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historic range. Larvae, juveniles, and adult frogs have been collected from natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and

springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits (containing water), and large reservoirs (Jennings 1988). The key to the presence of frogs in these habitats is the presence of perennial (or near perennial) water and the general lack of introduced aquatic predators such as largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and bluegill (*L. macrochirus*), crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), and bullfrogs (*Rana catesbeiana*).

The habitats observed to contain the largest densities of red-legged frogs are associated with deep-water pools (27 inches [>0.7 meters] deep) with stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha* spp.), tule (*Scirpus* spp.), or sedges (*Carex* sp.) (Hayes and Jennings 1988). However, California red-legged frogs have also been observed to inhabit stock ponds, sewage treatment ponds, and artificial (e.g., concrete) pools completely devoid of vegetation (Storer 1925; Jennings, *pers. comm.*). Continued survival of frogs in all aquatic habitats seems to be based on the continued presence of ponds, springs, or pools that are disjunct from perennial streams. Such habitats provide the continued basis for successful reproduction and recruitment year after year into nearby drainages that may lose frog populations due to stochastic events such as extreme flooding or droughts. Juvenile frogs are often observed sunning themselves during the day in the warm, surface-water layer associated with floating and submerged vegetation (Hayes and Tennant 1986). Adult frogs are largely nocturnal and are known to sit on stream banks or on the low-hanging limbs of willow trees over pools of water where they can detect small mammal prey (Hayes and Tennant 1986; Jennings and Hayes 1994). Adult red-legged frogs will move within the riparian zone from well-vegetated areas to pools of water to hydrate during periods of time when many of the streams are dry except for isolated pools (Rathbun et al. 1993). During wet periods (especially in the winter and early spring months), red-legged frogs can move long distances (e.g., 1 mile) between aquatic habitats, often over areas that are considered to be unsuitable for frogs (e.g., roads, open fields, croplands, etc.). Such activities can result in frogs ending up in isolated aquatic habitats well away from the nearest known frog populations.

Occurrence on the Site. CRFL have been confirmed to be present in ponds and tributaries of the Tick Creek, Tar Creek, Sycamore Creek, Pescadero Creek and Sargent Creek watersheds of the

site during PNWB's 2000 and 2001 surveys and LOA's 2004 and 2005 surveys (Figure 5). During surveys in January 2014 to confirm existing conditions of the site; LOA Associate Herpetologist Dr. Mark Jennings confirmed that even with two years of drought conditions, and despite most of the creeks and ponds of the site being completely, or nearly dry, refugia for CRLF and other terrestrial amphibians was present on the site within still persistent ponds in the Tar Creek drainage and also potentially within stock troughs. As for CTS, the drought conditions may have even favored CRLF by killing off CRLF predators within ponds of the site, such as non-native bullfrogs and non-native fish species; although, again, bullfrogs would be expected to re-colonize these ponds.

2.4.4 Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The western pond turtle is the only native aquatic, freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with 1) basking sites such as rocks and logs, 2) dense stands of submergent or emergent vegetation, 3) abundant aquatic invertebrate resources, 4) suitable nearby nesting sites, and 5) the lack of native and exotic predators (Bury 1972; Jennings and Hayes 1994; Bury and Holland, in press). This species can move along streams up to 3.1 miles (5 kilometers) in a short period of time, and they can tolerate at least 7 days without water (Jennings and Hayes 1994; Bury and Holland, in press).

Occurrence on the Site. Western pond turtles were observed by PNWB within the large pond near the eastern boundary of the site near Highway 101; and ponds and riparian habitats associated with Tar Creek and Sargent Creek provide potential habitat for this species although it has not been observed there.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Concern.

The burrowing owl is considered a California species of special concern. This decision was based on the fact that the burrowing owl's population levels were decreasing due to habitat

destruction, roadside nesting (vulnerability to human interference) and indirectly, ground squirrel poisoning.

The burrowing owl is a small, long-legged, semi-fossorial bird that averages a height of 9.5 inches, has an average wingspan of 23 inches, and weighs an average of 5.25 ounces. Burrowing owls are unique, as they are the only owl that regularly lives and breeds in underground nests. In California, these birds typically occur in the Central and Imperial Valleys, primarily utilizing ground squirrel burrows (or the burrows of other animals, e.g., badgers, prairie dogs and kangaroo rats) found in grasslands, open shrub lands, deserts, and to a lesser extent, grazing and agricultural lands. Burrowing owls in this region are typically found in lower elevations, and have strong site fidelity. Pairs have been known to return to the same area year after year, and some pairs are known to utilize the same burrow as the previous year.

Life History. Burrowing owls feed on various small mammals including deer mice, voles, and rats. They also prey on various invertebrates including crickets, beetles, grasshoppers, spiders, centipedes, scorpions and crayfish. Peak hunting periods occur around dusk and dawn.

The breeding season for the burrowing owl runs from February to August, with a peak between April and July. Clutch size varies from six to 12 eggs, with an average of seven to nine eggs. Females generally produce only one clutch per year. The female incubates the eggs for a month, while the male provides her food. The male continues to provide food during the brooding period. The young remain in their burrow for approximately two weeks after hatching, and become fully independent of their parents between eight to ten weeks of age. Burrowing owls are a fairly short-lived species, with an average life expectancy of 4.8 years. The oldest known wild burrowing owl was eight years and eight months old at the time of its death.

Burrowing owls are subject to predation by larger mammals (e.g., feral cats, bobcats, fox and coyotes). They are also susceptible to anthropogenic effects such as collisions with automobiles, and destruction or disruption of their nests, especially during the breeding season. The burrowing owl may also be affected by ground squirrel eradication efforts. Burrowing owl numbers have been in decline over the past 30 to 40 years, in California. The decline in numbers is due mainly to habitat destruction by way of development and agricultural practices.

Occurrence on the Site. A burrowing owl was observed on the site during PNWB surveys immediately to the north of the wetland/pond complex near Tick Creek in the northeastern portion of the site although the owl was confirmed to be gone from that area during nesting season. The resident rancher also reports seeing burrowing owls during the summer perched on serpentine rock outcrops in the northern portion of the ranch. Since this latter area does not support ground squirrel burrows, it is likely the owls were only foraging in this location. Although burrowing owls have never been observed nesting on the site, the grasslands of the site would appear to provide good breeding habitat for this species.

2.4.5 American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The American badger is considered a California species of special concern. This decision was based on the fact that the badger's population levels were decreasing due to mainly to habitat conversion from open grasslands to agriculture and urban uses, trapping for fur, and direct and indirect poisoning from eating poisoned rodents – their main prey base.

The American badger measures 520 to 875 mm (20 to 34 inches) from head to tail, with the tail making up only about 1/5 of this length. Badgers weigh between 4 and 12 kg (approximately 9 to 26 pounds). The body is flattened, and the legs are short and stocky, and the feet have long strong claws (up to 4-inches long). The fur on the back and flanks of the badger varies from brownish gray to a reddish color, with a buff colored underside. The face of the badger is distinct with several black patches on either side of its long snout. A white dorsal stripe extends back over the head from the nose, that in northern populations ends near the shoulders, while in southern populations continues over the back to the rump. Males are significantly larger than females (Kurta, 1995; Long, 1999). Badgers are primarily solitary, coming together for breeding purposes. Badgers are generally found throughout California's arid grasslands and scrublands with friable soils from sea level to 12,000 feet, except the northern North Coast area (Grinnell et al, 1937). Badgers are primarily nocturnal and rarely seen during the day.

Life History. Badgers feed on a variety of small to medium size mammals including deer mice, voles, and rats; in addition, they also feed on roots. Badgers will also eat reptiles and their eggs as well as birds and their eggs. Their main food source, however, is ground squirrels and pocket

gophers. They are opportunistic foragers and their food sources shift seasonally with availability.

Badgers generally breed in late summer or early fall, experiencing a delayed implantation. Although the badger female is technically pregnant for seven months, actual gestation takes 6 weeks. Most cubs (pups or kits) are born in March or April and litter size ranges from 1 to 5 with an average of 3 (Long 1973). Females can breed as young as 4 to 6 months of age; however, their first litter usually occurs after one year of age. Males do not usually breed until after their second year. Badger cubs are born blind, furred and helpless (ibid). Their eyes open between 4 and 6 weeks of age, and they are nursed for approximately 2 months. After 2 months of age the mother starts supplementing their diet with solid food, usually small rodents. Most young disperse shortly after weaning, while some remain in their natal area until the next breeding season. They may roam up to 100 km (62 miles) to find their own home range. The average life of badgers in the wild is between 8 and 12 years.

The home range size for badgers varies by sex, season and prey base, with males having larger home ranges than females. One study indicated males had an average home range of 2,100 acres, while one radio collared female had a home range of 1,790 acres in summer, 131 acres in fall, and only 5 acres during the winter (Sargeant and Warner 1972). Another study indicated a home range size between 667 and 1,550 acres for both sexes (Lindzey 1978).

Badgers often hunt for prey by digging into fossorial mammal burrows. Coyotes have been known to follow badgers to take advantage of an easy meal as rodents are flushed from their burrows. Badgers may enlarge hunting burrows for sleeping and protection from weather. During the summer months, they dig new resting burrows nearly every day; these burrows are usually only a few feet deep. Their natal dens are more permanent and may be as much as 30 feet long and 10 feet deep (Banfield 1974).

Badgers are ferocious animals and have few natural predators, though they can be preyed upon by bear (*Ursus americanus*), bobcat, and cougar. As discussed above, the main threat to badgers comes from anthropogenic effects.

Occurrence on the site. Habitat is present on the site and this species was observed during PNWB surveys and the presence of badgers near the ranch residence and in the southernmost portion of the site is also confirmed by the resident rancher.

3 OPPORTUNITIES FOR HABITAT CREATION AND ENHANCEMENT

3.1 SEASONAL WETLANDS AND RIPARIAN HABITAT

As indicated above, the site currently supports approximately 50 acres of various wetland habitats and 260 acres of high quality riparian woodlands. Since these habitat types are generally considered of very high biotic value, the creation of additional acreages of these habitat types on the site would be beneficial.

During the 2005 LOA delineation and 2014 LOA reconnaissance-level surveys, portions of the site were identified that may provide potential for the creation of seasonal wetlands or riparian habitats. It should be noted that a hydrologist would need to determine whether a sufficient water budget exists in these areas to support the creation of habitat, however.

One area that was identified as providing potential location for created wetlands is in the northeast corner of the site immediately south of Tick Creek. This area encompasses a large swale that already supports some hydrophytic vegetation, terminating within a wetland complex near the ranch's entrance road.

Other areas observed on the site that may provide opportunities for wetland creation occur at the lower extremes of seasonal drainages where they intercept Tar Creek, especially the north-south reach of Tar Creek in the northwestern portion of the site. Several of the drainages form wide swales in relatively level areas and these swales also already support some hydrophytic plant species such as California oat grass (*Danthonia californica*). Potentially, some additional terraforming of these areas could promote water retention and allow a hydrophyte-dominated community to develop; however, again, a hydrologist would need to evaluate these areas further.

With regard to potential creation of additional riparian habitat, some opportunities may be available at the lower and middle reaches of Sargent Creek and its tributaries. Sargent Creek already supports mature riparian vegetation along the lower reach and at the very upper end of the main channel in the central portion of the site. Due to relatively steep hillsides to the east of the creek, potentially, only a very narrow area of riparian vegetation could be established there, but areas to the west of the creek are relatively more level and appear to provide potential areas for creation of additional habitat where none currently occurs. Additionally, where the creek already supports riparian vegetation, there appear to be some opportunities to potentially plant

additional vegetation to widen the riparian corridor. As with wetland creation, these areas would require further evaluation to confirm that they have the proper hydrology to support such vegetation.

3.2 CALIFORNIA TIGER SALAMANDER AND CALIFORNIA RED-LEGGED FROG

It appears that most of the stock ponds of the site and the major drainages, such as Tar Creek and Sargent Creek, already provide good quality habitat for CRLF, based on the wide distribution of occurrences of this species documented by PNWB and LOA; however, some of these ponds also have been confirmed to support CRLF predators such as non-native fish and bullfrogs. Potentially, habitat for CRLF could be further enhanced via a Habitat Management Plan that incorporates measures to eradicate, or at least knock down, populations of these predatory species.

CTS have been confirmed to breed in relatively few of the ponds of the site as compared to CRLF; although many of the ponds that they were not found in would appear to provide a hydrologic regime suitable for CTS breeding. The same CRLF predators, i.e. non-native fish and bullfrogs, also would be predators on CTS. Additionally, the occurrence of non-native eastern tiger salamanders on the site may threaten the native population as a result of hybridization. Therefore, a Habitat Management Plan that incorporates measures to deal with these potential threats to the on-site population would be beneficial, and also potentially could result in CTS expanding to breeding in ponds that they don't appear to be utilizing.

3.3 SERPENTINE GRASSLAND AND SEEP

It is estimated that as much as 10% of California's native plant species are serpentine endemics, and also, a very high percentage of native plants considered rare in California are serpentine endemics. In addition to rare serpentine endemics, serpentine habitats tend to favor a greater diversity of more common native bunchgrasses and forbs than other grasslands because the chemical nature of the soils (low calcium to magnesium ratio, low essential nutrients, high concentration of heavy metals, etc.) tends to inhibit dense colonization of these areas by non-native grasses and forbs that outcompete natives on non-serpentine soils. In addition to rare plants, serpentine habitats in southern Santa Clara County are known to support populations of

the federally threatened Bay checkerspot butterfly. As such, serpentine grasslands are generally considered a sensitive biological community with a high priority for protection.

As indicated in the previous section, no rare serpentine species have ever been detected on the site; however, as far as we are aware, focused surveys for rare plants and for the Bay checkerspot butterfly have never been conducted within the serpentine habitats of the site; and, therefore, it is unknown whether the habitats on the site support populations of these species. Certainly, the preservation value of these habitats on the site would be enhanced greatly by the presence of special status serpentine endemics.

There may be some potential for the introduction of rare serpentine plants. Rock outcrops in these habitats already support the more common dudleya species, so potentially may also be suitable for Santa Clara Valley dudleya, although other efforts to transplant or seed this species into serpentine habitat where it doesn't already occur have not always been successful. Other serpentine endemics species that may be appropriate to seed at the site include annuals such as most beautiful jewelflower, which has been found in serpentine habitats just north of the ranch, and smooth lessingia. The serpentine seep on the site may provide potential habitat for Mount Hamilton thistle, which is endemic to this habitat type.

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APPENDIX A VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the Sargent Ranch study area during the surveys conducted by Live Oak Associates on July 30, August 3 and 4, 2004; June 9 and 10, July 13, 20, 21, and 27, and October 6, 2005; March 28 and 29, 2007; May 29-31, 2007; August 1, 2007; and September 24, 2007. All plants have been named according to *The Jepson Manual* (Hickman 1993). The U.S. Fish and Wildlife Service indicator status of each plant has been shown following its common name.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 +/- - Higher/lower end of category
 NR - No review
 NA - No agreement
 NI - No investigation

ACERACEAE – MAPLE FAMILY

<i>Acer macrophyllum</i>	Big-leaf Maple	FAC
<i>Acer negundo</i>	Boxelder	FACW

ANACARDIACEAE – SUMAC FAMILY

<i>Schinus molle</i>	Peruvian Pepper Tree	UPL
<i>Toxicodendron diversilobum</i>	Poison Oak	UPL

APIACEAE – CARROT FAMILY

<i>Anthriscus caucalis</i>	Bur-chervil	UPL
<i>Berula erecta</i>	Cut-leaved Water Parsnip	OBL
<i>Conium maculatum</i>	Poison Hemlock	FACW
<i>Daucus pusillus</i>	Rattlesnakeweed	UPL
<i>Eryngium vaseyi</i>	Coyote Thistle	OBL
<i>Foeniculum vulgare</i>	Fennel	FACU
<i>Heracleum lanatum</i>	Cow Parsnip	FACU
<i>Hydrocotyle ranunculoides</i>	Marsh Pennywort	OBL
<i>Lomatium</i> sp.	Lomatium	-
<i>Oenanthe sarmentosa</i>	Water Parsley	OBL
<i>Osmorhiza chilensis</i>	Sweet-cicely	UPL
<i>Perideridia kelloggii</i>	Kellogg's Yampah	UPL

<i>Sanicula bipinnata</i>	Poison Sanicle	UPL
<i>Sanicula bipinnatifida</i>	Purple Sanicle	UPL
<i>Sanicula crassicaulis</i>	Snakeroot	UPL
<i>Sanicula laciniata</i>	Coast Sanicle	UPL
<i>Torilis arvensis</i>	Field Hedge Parsley	UPL
<i>Torilis nodosa</i>	Knotted Hedge Parsley	UPL

APOCYNACEAE – DOGBANE FAMILY

<i>Vinca major</i>	Periwinkle	UPL
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ASCLEPIADACEAE – MILKWEED FAMILY

<i>Asclepias fascicularis</i>	Narrow-leaved Milkweed	FAC
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ASTERACEAE - SUNFLOWER FAMILY

<i>Achillea millefolium</i>	Common Yarrow	FACU
<i>Achyrrachaena mollis</i>	Blow Wives	UPL
<i>Agoseris grandiflora</i>	California Dandelion	UPL
<i>Agoseris heterophylla</i>	Annual Mountain Dandelion	UPL
<i>Ambrosia psilostachya</i>	Western Ragweed	
<i>Anaphalis margaritacea</i>	Pearly Everlasting	
<i>Anthemis cotula</i>	Mayweed	FACU
<i>Artemisia californica</i>	California Sagebrush	UPL
<i>Artemisia douglasiana</i>	Mugwort	FACW
<i>Baccharis pilularis</i>	Coyote Brush	UPL
<i>Baccharis salicifolia</i>	Mule's Fat	FACW-
<i>Carduus pycnocephalus</i>	Italian Thistle	UPL
<i>Centaurea calcitrapa</i>	Purple Star-thistle	UPL
<i>Centaurea solstitialis</i>	Yellow Star-thistle	UPL
<i>Chamomilla suaveolens</i>	Pineapple Weed	FACU
<i>Cichorium intybus</i>	Chicory	UPL
<i>Cirsium vulgare</i>	Bull Thistle	FACU
<i>Conyza canadensis</i>	Canadian Horseweed	FAC
<i>Cotula coronopifolia</i>	Brass Buttons	FACW+
<i>Erechtites glomerata</i>	Cut-leaved Fireweed	UPL
<i>Erigeron philadelphicus</i>	Philadelphia Daisy	
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	UPL
<i>Filago gallica</i>	Narrow-leaved Filago	UPL
<i>Gnaphalium californicum</i>	California Everlasting	UPL
<i>Gnaphalium luteo-album</i>	Cudweed	FACW-
<i>Gnaphalium purpureum</i>	Purple Cudweed	UPL
<i>Grindelia camporum</i>	Great Valley Gumplant	FACU
<i>Helenium puberulum</i>	Rosilla	FACW
<i>Hemizonia congesta ssp. congesta</i>	Hayfield Tarweed	UPL
<i>Hemizonia congesta ssp. luzulifolia</i>	Hayfield Tarweed	UPL
<i>Hemizonia pungens ssp. pungens</i>	Common Spikeweed	FAC
<i>Hesperervax sparsiflora</i>	Erect Hesperervax	UPL
<i>Hypochaeris glabra</i>	Smooth Cat's Ear	UPL

<i>Hypochaeris radicata</i>	Rough Cat's Ear	UPL
<i>Iva axillaris ssp. robustior</i>	Poverty weed	FAC
<i>Lactuca saligna</i>	Willow Lettuce	NI
<i>Lactuca serriola</i>	Prickly Lettuce	FAC
<i>Lagophylla ramosissima ssp. ramosissima</i>	Common Hareleaf	UPL
<i>Lasthenia californica</i>	Goldfields	UPL
<i>Layia platyglossa</i>	Tidy Tips	UPL
<i>Lessingia filaginifolia</i>	Common Lessingia	UPL
<i>Madia gracilis</i>	Slender Tarweed	UPL
<i>Microseris douglasii</i>	Douglas Microseris	UPL
<i>Picris echioides</i>	Bristly Ox Tongue	FAC*
<i>Senecio vulgaris</i>	Common Groundsel	NI
<i>Silybum marianum</i>	Milk Thistle	UPL
<i>Solidago californica</i>	California Goldenrod	UPL
<i>Sonchus asper</i>	Prickly Sow-thistle	FAC
<i>Sonchus oleraceus</i>	Common Sow-thistle	NI
<i>Taraxacum officinale</i>	Common Dandelion	FACU
<i>Tragopogon porrifolius</i>	Tragopogon	UPL
<i>Uropappus lindleyi</i>	Silverpuffs	UPL
<i>Wyethia glabra</i>	Mules-ears	UPL
<i>Wyethia helenioides</i>	Gray Mules Ears	UPL
<i>Xanthium spinosum</i>	Spiny Cocklebur	FAC+
<i>Xanthium strumarium</i>	Common Cocklebur	FAC+

AZOLLACEAE - MOSQUITO FERN FAMILY

<i>Azolla filiculoides</i>	Fern-Like Azolla	OBL
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BETULACEAE – BIRCH FAMILY

<i>Alnus rhombifolia</i>	White Alder	FACW
<i>Alnus rubra</i>	Red Alder	FACW
<i>Corylus cornuta var. californica</i>	Hazelnut	NI

BLECHNACEAE - DEER FERN FAMILY

<i>Woodwardia fimbriata</i>	Chain Fern	FACW+
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BORAGINACEAE – BORAGE FAMILY

<i>Amsinckia menziesii var. intermedia</i>	Fiddleneck	UPL
<i>Cynoglossum grande</i>	Hound's Tongue	UPL
<i>Heliotropium curassavicum</i>	Alkali Heliotrope	OBL
<i>Plagiobothrys canescens</i>	Valley Popcorn Flower	UPL
<i>Plagiobothrys nothoflavus</i>	Rusty Popcorn Flower	FACU

BRASSICACEAE – MUSTARD FAMILY

<i>Brassica nigra</i>	Black Mustard	UPL
<i>Capsella bursa-pastoris</i>	Cardamine californica	
<i>Milkmaids</i>		UPL
<i>Cardamine oligosperma</i>	Bitter Cress	FACW

<i>Cardaria draba</i>	Hoary Cress	UPL
<i>Hirschfeldia incana</i>	Summer Mustard	UPL
<i>Lepidium campestre</i>	Lepidium latifolium	
<i>Broad-leaved Peppergrass</i>		FACW
<i>Lepidium nitidum</i>	Common Peppergrass	FACW
<i>Lepidium oxycarpum</i>	Sharp-podded Peppergrass	OBL
<i>Lepidium strictum</i>	Wayside Peppergrass	UPL
<i>Raphanus sativus</i>	Wild Radish	UPL
<i>Rorippa curvisiliqua</i>	Western Yellow Cress	OBL
<i>Rorippa nasturtium-aquaticum</i>	Watercress	OBL
<i>Sisymbrium officinale</i>	Hedge Mustard	UPL

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

<i>Lonicera hispidula</i>	Hairy Honeysuckle	UPL
<i>Sambucus mexicana</i>	Blue Elderberry	FAC
<i>Symphoricarpos albus var. laevigatus</i>	Snowberry	FACU

CARYOPHYLLACEAE – PINK FAMILY

<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	UPL
<i>Silene gallica</i>	Windmill Pink	
<i>Spergularia marina</i>	Salt-marsh Sand Spurry	OBL
<i>Spergularia rubra</i>	Red Sand-spurrey	FAC-
<i>Stellaria media</i>	Common Chickweed	FACU

CHENOPODIACEAE – GOOSEFOOT FAMILY

<i>Atriplex triangularis</i>	Spear Scale	FACW
<i>Chenopodium californicum</i>	California Goosefoot	UPL
<i>Salsola tragus</i>	Russian-thistle	FACU

CONVOLVULACEAE – MORNING GLORY FAMILY

<i>Calystegia occidentalis</i>	Western Morning-glory	UPL
<i>Calystegia subacaulis</i>	Hill Morning-glory	UPL
<i>Convolvulus arvensis</i>	Field Bindweed	UPL
<i>Cressa truxillensis</i>	Alkali Weed	FACW

CORNACEAE – DOGWOOD FAMILY

<i>Cornus glabrata</i>	Brown Dogwood	FACW
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CRASSULACEAE – STONECROP FAMILY

<i>Crassula connata</i>	Pygmyweed	FAC
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CUCURBITACEAE – GOURD FAMILY

<i>Marah fabaceus</i>	California Man-Root	UPL
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CYPERACEAE – SEDGE FAMILY

<i>Carex dudleyi</i>	Dudley's Sedge	FACW
<i>Carex obnupta</i>	Slough Sedge	OBL
<i>Carex serratodens</i>	Bifid Sedge	FACW

<i>Cyperus eragrostis</i>	Umbrella Sedge	FACW
<i>Eleocharis macrostachya</i>	Spikerush	OBL
<i>Scirpus acutus</i>	Common Tule	OBL
<i>Scirpus americanus</i>	Three Square	OBL
<i>Scirpus cernuus</i>	Low Club Rush	OBL

DENNSTAEDTIACEAE – BRACKEN FAMILY

<i>Pteridium aquilinum</i>	Western Bracken Fern	FACU
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DIPSACEAE – TEASEL FAMILY

<i>Dipsacus fullonum</i>	Wild Teasel	NI
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DRYOPTERIDACEAE – WOOD FERN FAMILY

<i>Athyrium felix-femina</i>	Western Lady Fern	FAC
<i>Dryopteris arguta</i>	Wood Fern	UPL
<i>Polystichum munitum</i>	Western Sword Fern	UPL

EQUISETACEAE – HORSETAIL FAMILY

<i>Equisetum arvense</i>	Common Horsetail	FAC
<i>Equisetum laevigatum</i>	Smooth Scouring Rush	FACW
<i>Equisetum telmateia ssp. braunii</i>	Giant Horsetail	OBL

ERICACEAE – HEATH FAMILY

<i>Arbutus menziesii</i>	Madrone	UPL
<i>Arctostaphylos tomentosa</i>	Woolly-leaf Manzanita	UPL

EUPHORBIACEAE – SPURGE FAMILY

<i>Eremocarpus setigerus</i>	Doveweed	UPL
<i>Euphorbia crenulata</i>	Chinese Caps	UPL

FABACEAE – LEGUME FAMILY

<i>Astragalus gambelianus</i>	Gamble's Milk-vetch	UPL
<i>Lotus corniculatus</i>	Bird's Foot Trefoil	FAC
<i>Lotus purshianus</i>	Spanish Lotus	UPL
<i>Lotus scoparius</i>	California Broom, Deer Weed	UPL
<i>Lotus wrangelianus</i>	California Lotus	UPL
<i>Lupinus adsurgens</i>	Silky Lupine	UPL
<i>Lupinus albifrons</i>	Silver Bush Lupine	UPL
<i>Lupinus bicolor</i>	Miniature Lupine	UPL
<i>Lupinus nanus</i>	Sky Lupine	UPL
<i>Lupinus succulentus</i>	Arroyo Lupine	UPL
<i>Medicago polymorpha</i>	Bur Clover	FACU-
<i>Melilotus alba</i>	White Sweetclover	FACU+
<i>Melilotus indica</i>	Yellow Sweetclover	FAC
<i>Rupertia physodes</i>	California-tea	UPL
<i>Trifolium angustifolium</i>	Narrow-leaved clover	UPL
<i>Trifolium albopurpureum</i>	Indian Clover	UPL

<i>Trifolium bifidum</i>	Notch-leaved Clover	UPL
<i>Trifolium ciliolatum</i>	Tree Clover	UPL
<i>Trifolium dubium</i>	Little Hop Clover	FACU
<i>Trifolium fucatum</i>	Bull Clover	FAC
<i>Trifolium gracilentum</i> var. <i>gracilentum</i>	Pinpoint Clover	UPL
<i>Trifolium hirtum</i>	Rose Clover	UPL
<i>Trifolium incarnatum</i>	Crimson Clover	UPL
<i>Trifolium microcephalum</i>	Small-head Clover	FACU
<i>Trifolium microdon</i>	Valpariaso Clover	UPL
<i>Trifolium subterraneum</i>	Subterraneum Clover	UPL
<i>Trifolium wildenovii</i>	Tomcat Clover	UPL
<i>Trifolium wormskioldii</i>	Cow Clover	FACW
<i>Vicia sativa</i>	Spring Vetch	FACU
<i>Vicia villosa</i>	Hairy Vetch	UPL

FAGACEAE – OAK FAMILY

<i>Quercus agrifolia</i>	Coast Live Oak	UPL
<i>Quercus douglassii</i>	Blue Oak	UPL
<i>Quercus lobata</i>	Valley Oak	UPL

GERANIACEAE – GERANIUM FAMILY

<i>Erodium botrys</i>	Long-beaked Filaree	UPL
<i>Erodium cicutarium</i>	Redstem Filaree	UPL
<i>Geranium dissectum</i>	Cut-Leaved Geranium	UPL
<i>Geranium molle</i>	Dove's Foot Geranium	UPL

GROSSULARIACEAE – GOOSEBERRY FAMILY

<i>Ribes californicum</i> var. <i>californicum</i>	Hillside Gooseberry	UPL
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	Pinkflower Currant	UPL

HIPPOCASTANACEAE – BUCKEYE FAMILY

<i>Aesculus californica</i>	California Buckeye	UPL
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HYROPHYLLACEAE – WATERLEAF FAMILY

<i>Nemophila menziesii</i> ssp. <i>menziesii</i>	Baby Blue-eyes	UPL
<i>Pholistima auritum</i> var. <i>auritum</i>	Fiesta Flower	UPL

IRIDACEAE – IRIS FAMILY

<i>Iris douglasiana</i>	Douglas Iris	UPL
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	FAC

JUGLANDACEAE – WALNUT FAMILY

<i>Juglans hindsii</i>	California Black Walnut	FAC
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JUNCACEAE – RUSH FAMILY

<i>Juncus balticus</i>	Baltic Rush	OBL
<i>Juncus bufonius</i>	Toad Rush	FACW-
<i>Juncus effuses</i> var. <i>pacificus</i>	Pacific Bog Rush	OBL

<i>Juncus mexicanus</i>	Mexican Rush	FACW
<i>Juncus occidentalis</i>	Western Rush	FACW
<i>Juncus patens</i>	Common Rush	FAC
<i>Juncus xiphioides</i>	Iris-leaf Juncus	FACW+
<i>Luzula comosa</i>	Wood Rush	NI

LAMIACEAE – MINT FAMILY

<i>Lepichinia calycina</i>	Pitcher Sage	UPL
<i>Marrubium vulgare</i>	Horehound	FAC
<i>Mentha pulegium</i>	Pennyroyal	OBL
<i>Pogogyne serpylloides</i>	Thyme-leaved Pogogyne	FACW
<i>Salvia mellifera</i>	Black Sage	UPL
<i>Stachys ajugoides</i> var. <i>rigida</i>	Rigid Hedge Nettle	OBL
<i>Stachys bullata</i>	Wood Mint	UPL
<i>Stachys pycnantha</i>	Short-spiked Hedge Nettle	FACW
<i>Trichostemma lanceolatum</i>	Vinegar Weed	UPL

LAURACEAE – LAUREL FAMILY

<i>Umbellularia californica</i>	California Bay	FAC
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LEMNACEAE – DUCKWEED FAMILY

<i>Lemna gibba</i>	Inflated Duckweed	OBL
<i>Lemna minor</i>	Duckweed	OBL

LILIACEAE – LILY FAMILY

<i>Brodiaea elegans</i>	Harvest Brodiaea	UPL
<i>Calochortus luteus</i>	Yellow Mariposa Lily	UPL
<i>Calochortus venustus</i>	Mariposa Lily	UPL
<i>Chlorogalum pomeridianum</i>	Soap Plant	UPL
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	UPL
<i>Muilla maritima</i>	Common Muilla	UPL
<i>Trillium chloropetalum</i>	Giant Trillium	UPL
<i>Triteleia laxa</i>		

LINACEAE – FLAX FAMILY

<i>Linum bienne</i>	Narrowleaf Flax	UPL
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LYTHRACEAE – LOOSESTRIFE FAMILY

<i>Lythrum hyssopifolia</i>	Hyssop Loosestrife	FACW
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MALVACEAE – MALLOW FAMILY

<i>Malva neglecta</i>	Common Mallow, Cheeses	UPL
<i>Malvella leprosa</i>	Alkali Mallow	FAC
<i>Sidalcea diploscypha</i>	Fringed Sidalcea	
<i>Sidalcea malvaeflora</i> ssp. <i>laciniata</i>	Checker Bloom, Wild Hollyhock	UPL

MYRTACEAE – MYRTLE FAMILY

<i>Eucalyptus globulus</i>	Blue Gum	UPL
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OLEACEAE – OLIVE FAMILY

<i>Fraxinus dipetala</i>	California Ash	UPL
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ONAGRACEAE – EVENING PRIMROSE FAMILY

<i>Camissonia ovata</i>	Sun Cup	UPL
<i>Clarkia rubicunda</i>	Farewell-To-Spring	UPL
<i>Clarkia sp.</i>	Clarkia	
<i>Clarkia unguiculata</i>	Elegant Fairyfan	UPL
<i>Epilobium brachycarpum</i>	Willow Herb	UPL
<i>Epilobium canum</i>	California Fuschia	UPL
<i>Epilobium ciliatum ssp. ciliatum</i>	California Willowherb	FACW
<i>Epilobium minutum</i>	Minute Willowherb	UPL
<i>Epilobium ciliatum</i>	Willow Herb	FACW
<i>Ludwigia peploides</i>	Yellow Water Weed	OBL
<i>Oenothera elata ssp. hookeri</i>	Hooker's Evening Primrose	

OXALIDACEAE – OXALIS FAMILY

<i>Oxalis corniculata</i>	Creeping Wood-sorrel	FACU
<i>Oxalis pes-caprae</i>	Bermuda Buttercup	UPL

PAPAVERACEAE – POPPY FAMILY

<i>Eschscholzia californica</i>	California Poppy	UPL
<i>Platystemon californicus</i>	Cream Cups	UPL

PLANTAGINACEAE – PLANTAGO FAMILY

<i>Plantago lanceolata</i>	English Plantain	FAC
<i>Plantago major</i>	Common Plantain	FACW-

PLATANACEAE – SYCAMORE FAMILY

<i>Platanus racemosa</i>	Western Sycamore	FACW
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POACEAE - GRASS FAMILY

<i>Agrostis viridis</i>	Water Bent Grass	OBL
<i>Arundo donax</i>	Giant Reed	FACW
<i>Avena barbata</i>	Slender Wild Oats	UPL
<i>Avena sativa</i>	Cultivated Oat	UPL
<i>Briza minor</i>	Little Quaking Grass	FACW-
<i>Bromus carinatus</i>	California Brome	UPL
<i>Bromus diandrus</i>	Ripgut	UPL
<i>Bromus hordeaceus</i>	Soft Chess	FACU
<i>Bromus madritensis</i>	Red Brome	NI
<i>Crypsis schoenoides</i>	Swamp Grass	OBL
<i>Crypsis vaginiflora</i>	Prickle-grass	
<i>Cynosurus echinatus</i>	Hedgehog Dogtail	UPL

<i>Danthonia californica</i>	California Oatgrass	FACW
<i>Distichlis spicata</i>	Saltgrass	FACW
<i>Echinochloa crus-galli</i>	Barnyard Grass	FACW
<i>Elymus elymoides</i>	Squirrel tail	FACU-
<i>Elymus glaucus</i>	Blue Wildrye	FACU
<i>Gastridium ventricosum</i>	Nit Grass	FACU
<i>Hordeum brachyanthurum</i>	California Barley	FACW
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean Barley	FAC
<i>Hordeum murinum ssp. leporinum</i>	Barnyard Barley	NI
<i>Lamarkia aurea</i>	Goldentop	UPL
<i>Leymus triticoides</i>	Creeping Wildrye	FAC+
<i>Lolium multiflorum</i>	Ryegrass	FAC
<i>Lolium perenne</i>	Perennial Rye	FAC
<i>Melica torreyana</i>	Melic Grass	UPL
<i>Nassella cernua</i>	Nodding Needle Grass	
<i>Nassella pulchra</i>	Purple Needle Grass	UPL
<i>Paspalum distichum</i>	Knotgrass	OBL
<i>Phalaris aquatica</i>	Harding Grass	FAC+
<i>Poa annua</i>	Annual Bluegrass	FACW-
<i>Poa secunda</i>	Oneside Blue Grass	UPL
<i>Polypogon monspeliensis</i>	Annual Beardgrass	FACW
<i>Vulpia bromoides</i>	Six-week Fescue	FACW
<i>Vulpia microstachys</i>	Pacific Fescue	UPL

POLEMONIACEAE – PHLOX FAMILY

<i>Navarretia</i> sp.	Navarretia	
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POLYGONACEAE - BUCKWHEAT FAMILY

<i>Eriogonum nudum var. nudum</i>	Naked-stemmed Buckwheat	UPL
<i>Polygonum amphibium var. emersum</i>	Swamp Knotweed	OBL
<i>Polygonum arenastrum</i>	Common Knotweed	FAC
<i>Polygonum hydropiperoides</i>	Water-pepper	OBL
<i>Polygonum persicaria</i>	Lady's Thumb	FACW
<i>Pterostegia drymarioides</i>	Pterostigia	UPL
<i>Rumex acetosella</i>	Sheep Sorrel	FAC_
<i>Rumex crispus</i>	Curly Dock	FACW
<i>Rumex pulcher</i>	Fiddle Dock	FAC+
<i>Rumex salicifolius</i>	Willow Dock	OBL

POLYPODIACEAE – POLYPODY FAMILY

<i>Polypodium californicum</i>	California Polypody	UPL
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PORTULACACEAE – PURSLANE FAMILY

<i>Calandrinia ciliata</i>	Red Maids	FACU
<i>Claytonia gypsophiloides</i>	Coast Claytonia	UPL
<i>Claytonia parviflora ssp. parviflora</i>	Small-leaved Claytonia	UPL
<i>Claytonia perfoliata ssp. perfoliata</i>	Miner's Lettuce	FAC

<i>Portulaca oleracea</i>	Common Purslane	FAC
POTAMOGETONACEAE - PONDWEED FAMILY		
<i>Potamogeton nodosus</i>	Long-leaved Pondweed	OBL
PRIMULACEAE – PRIMROSE FAMILY		
<i>Anagallis arvensis</i>	Scarlet Pimpernel	FAC
<i>Dodecatheon hendersonii</i>	Mosquito Bills	UPL
<i>Trientalis latifolia</i>	Star Flower	UPL
PTERIDACEAE – BRAKE FAMILY		
<i>Adiantum jordanii</i>	Maidenhair Fern	UPL
<i>Pellaea andromedaefolia</i>	Coffee Fern	UPL
<i>Pentagramma triangularis</i>	Gold-back Fern	UPL
RANUNCULACEAE – BUTTERCUP FAMILY		
<i>Clematis ligusticifolia</i>	Virgin's Bower	FAC
<i>Myosurus minimus</i>	Common Mousetail	OBL
<i>Ranunculus californicus</i>	California Buttercup	FAC
RHAMNACEAE – BUCKTHORN FAMILY		
<i>Rhamnus californica</i>	California Coffeeberry	UPL
<i>Rhamnus crocea</i>	Redberry	UPL
ROSACEAE – ROSE FAMILY		
<i>Acaena pinnatifida</i> var. <i>californica</i>	California Acaena	UPL
<i>Adenostema fasciculatum</i>	Chamise	FAC
<i>Aphanes occidentalis</i>	Lady's Mantle	UPL
<i>Fragaria vesca</i>	Wood Strawberry	UPL
<i>Heteromeles arbutifolia</i>	Toyon	UPL
<i>Holodiscus discolor</i>	Creambush	UPL
<i>Horkelia californica</i> ssp. <i>frondosa</i>	Leafy Horkelia	UPL
<i>Oemlaria cerasiformis</i>	Oso Berry	UPL
<i>Prunus cerasifera</i>	Cherry Plum	UPL
<i>Rosa californica</i>	California Rose	FAC+
<i>Rubus discolor</i>	Himalayan Blackberry	FACW
<i>Rubus ursinus</i>	California Blackberry	FACW
RUBIACEAE – MADDER FAMILY		
<i>Galium aparine</i>	Goosegrass	FACU
<i>Galium parisiense</i>	Wall Bedstraw	FACU
<i>Galium porrigens</i>	Climbing Bedstraw	UPL
<i>Sherardia arvensis</i>	Field Madder	UPL
SALICACEAE – WILLOW FAMILY		
<i>Populus balsamifera</i> ssp. <i>tricarpa</i>	Black Cottonwood	FACW
<i>Populus fremontii</i>	Fremont's Cottonwood	FACW
<i>Salix exigua</i>	Narrowleaf Willow	OBL

<i>Salix laevigata</i>	Red Willow	FACW
<i>Salix lasiolepis</i>	Arroyo Willow	FACW
<i>Salix lucida ssp. lasiandra</i>	Yellow Willow	OBL

SAXIFRAGACEAE – SAXIFRAGE FAMILY

<i>Lithophragma affine</i>	Woodland Star	UPL
<i>Saxifraga californica</i>	California Saxifrage	UPL

SCROPHULARIACEAE – SNAPDRAGON FAMILY

<i>Castilleja affinis ssp. affinis</i>	Indian Paintbrush	UPL
<i>Castilleja exserta</i>	Pink Owl's Clover	UPL
<i>Castilleja foliolosa</i>	Woolly Indian Paint-brush	UPL
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	UPL
<i>Mimulus guttatus</i>	Common Monkeyflower	OBL
<i>Scrophularia californica</i>	Beeplant	FAC
<i>Tryphysaria pusilla</i>	Little Owl's Clover	UPL
<i>Veronica anagallis-aquatica</i>	Water speedwell	OBL

SOLANACEAE – NIGHTSHADE FAMILY

<i>Solanum nigrum</i>	Black Nightshade	FACU
<i>Solanum umbelliferum</i>	Blue Witch	UPL

TAXODIACEAE – BALD CYPRESS FAMILY

<i>Sequoia sempervirens</i>	Coast Redwood	UPL
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TYPHACEAE – CATTAIL FAMILY

<i>Typha angustifolia</i>	Narrow-leaved Cattail	OBL
<i>Typha latifolia</i>	Broad-leaved Cattail	OBL

URTICACEAE – NETTLE FAMILY

<i>Urtica dioica ssp. holosericea</i>	Stinging Nettle	FACW
<i>Urtica urens</i>	Dwarf Nettle	UPL

VERBANACEAE – VERBANE FAMILY

<i>Phyla nodiflora</i>	Garden Lippia	FACW
<i>Verbena lasiostachy var. scabrida</i>	Robust Verbena	FAC-

VIOLACEAE – VIOLET FAMILY

<i>Viola pedunculata</i>	Johnny Jump-up	UPL
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VISCACEAE – MISTLETOE FAMILY

<i>Phoradendron villosum</i>	Oak Mistletoe	UPL
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**APPENDIX B
TERRESTRIAL VERTEBRATE SPECIES THAT OCCUR, OR POTENTIALLY
OCCUR, ON THE STUDY AREA**

The species listed below are those that have been observed on the site during surveys conducted by LOA and PNWB (denoted by an asterisk), or that may reasonably be expected to use the habitats of the study area. The list was not intended to include birds that are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely and predictably use the site during some or all of the year.

CLASS: ACTINOPTERYGII**ORDER: SALMONIFORMES (SALMONIDS)****FAMILY: SOLMONIDAE**

Steelhead (*Onchorynchis mykiss irideus*)*

CLASS: AMPHIBIA**ORDER: CAUDATA (SALAMANDERS)****FAMILY: AMBYSTOMATIDAE (MOLE SALAMANDERS AND RELATIVES)**

CALIFORNIA TIGER SALAMANDER (*AMBYSTOMA CALIFORNIENSE*)*

FAMILY: SALAMANDRIDAE (NEWTs)

California Newt (*Taricha torosa*)*

FAMILY: PLETHODONTIDAE (LUNGLESS SALAMANDERS)

Ensatina (*Ensatina eschscholtzii*)

Black-bellied Salamander (*Batrachoseps nigriventris*)

Pacific Slender Salamander (*Batrachoseps pacificus*)

Arboreal Salamander (*Aneides lugubris*)*

ORDER: ANURA (FROGS AND TOADS)**FAMILY: BUFONIDAE (TRUE TOADS)**

Western Toad (*Bufo boreas*)*

FAMILY: HYLIDAE (TREEFROGS AND RELATIVES)

Pacific Chorus Frog (*Pseudacris regilla*)*

FAMILY: RANIDAE (TRUE FROGS)

Bullfrog (*Rana catesbeiana*)*

California Red-legged Frog (*Rana draytonii*)*

CLASS: REPTILIA**ORDER: TESTUDINES (TURTLES)****FAMILY: EMYDIDAE (BOX AND WATER TURTLES)**

Western Pond Turtle (*Emys marmorata*)*

ORDER: SQUAMATA (LIZARDS AND SNAKES)

SUBORDER: SAURIA (LIZARDS)

FAMILY: PHRYNOSOMATIDAE

Western Fence Lizard (*Sceloporus occidentalis*)*

FAMILY: SCINCIDAE (SKINKS)

Gilbert Skink (*Eumeces gilberti*)

FAMILY: ANGUIDAE (ALLIGATOR LIZARDS AND RELATIVES)

Southern Alligator Lizard (*Elgaria multicarinata*)*

SUBORDER: SERPENTES (SNAKES)

FAMILY: BOIDAE (BOAS)

Rubber Boa (*Charina bottae*)

FAMILY: COLUBRIDAE (COLUBRIDS)

Racer (*Coluber constrictor*)*

Gopher Snake (*Pituophis melanoleucus*)*

Common Kingsnake (*Lampropeltis getulus*)

Common Garter Snake (*Thamnophis sirtalis*)

Western Aquatic Garter Snake (*Thamnophis couchi*)*

FAMILY: VIPERIDAE

Western Rattlesnake (*Crotalus viridis*)*

CLASS: AVES

ORDER: CICONIIFORMES (HERONS, STORKS, IBISES, AND RELATIVES)

FAMILY: PODICIPEDIDAE

Pied-billed Grebe (*Podilymbus podiceps*)*

FAMILY: ARDEIDAE (HERONS AND BITTERNS)

GREAT BLUE HERON (*ARDEA HERODIAS*)*

BLACK-CROWNED NIGHT HERON (*NYCTICORAX NYCTICORAX*)

GREAT EGRET (*ARDEA ALBA*)*

SNOWY EGRET (*EGRETTA THULA*)*

FAMILY: CATHARTIDAE (AMERICAN VULTURES)

Turkey Vulture (*Cathartes aura*)*

California Condor (*Gymnogyps californianus*)

ORDER: ANSERIFORMES (SCREAMERS, DUCKS AND RELATIVES)

FAMILY: ANATIDAE (SWANS, GEESE AND DUCKS)

MALLARD (*ANAS PLATYRHYNCHOS*)*

CANADA GOOSE (*BRANTA CANADENSIS*)*

WOOD DUCK (*AIX SPONSA*)*

ORDER: FALCONIFORMES (VULTURES, HAWKS, AND FALCONS)

FAMILY: ACCIPITRIDAE (HAWKS, OLD WORLD VULTURES, AND HARRIERS)

White-tailed Kite (*Elanus caeruleus*)*
Bald Eagle (*Haliaeetus leucocephalus*)*
Northern Harrier (*Circus cyaneus*)*
Sharp-shinned Hawk (*Accipiter striatus*)*
Cooper's Hawk (*Accipiter cooperi*)*
Northern Goshawk (*Accipiter gentilis*)
Red-shouldered Hawk (*Buteo lineatus*)*
Red-tailed Hawk (*Buteo jamaicensis*)*
Ferruginous Hawk (*Buteo regalis*)*
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)*

FAMILY: FALCONIDAE (CARACARAS AND FALCONS)

American Kestrel (*Falco sparverius*)*
Merlin (*Falco columbarius*)*
Peregrine Falcon (*Falco peregrinus*)*
Prairie Falcon (*Falco mexicanus*)*

ORDER: GALLIFORMES (Megapodes, Curassows, Pheasants, and Relatives)**FAMILY: PHASIANIDAE (QUAILS, PHEASANTS AND RELATIVES)**

Wild Turkey (*Meleagris gallopavo*)*

FAMILY: ODONTOPHORIDAE (NEW WORLD QUAIL)

California Quail (*Callipepla californica*)*

FAMILY: LARIDAE (GULLS AND TERNS)

California Gull (*Larus californicus*)

ORDER: CHARADRIIDAE (SHOREBIRDS, GULLS AND RELATIVES)**FAMILY: CHARADRIIDAE (PLOVERS AND RELATIVES)**

KILLDEER (*CHARADRIUS VOCIFEROUS*)*

ORDER: COLUMBIFORMES (PIGEONS AND DOVES)**FAMILY: COLUMBIDAE (PIGEONS AND DOVES)**

Rock Dove (*Columba livia*)*
Band-tailed Pigeon (*Columba fasciata*)*
Mourning Dove (*Zenaida macroura*)*
Eurasian Collared-dove (*Streptopelia decaocto*)*

ORDER: STRIGIFORMES (OWLS)**FAMILY: TYTONIDAE (BARN OWLS)**

Common Barn Owl (*Tyto alba*)*

FAMILY: STRIGIDAE (TYPICAL OWLS)

Short-eared Owl (*Asio flammeus*)
Great Horned Owl (*Bubo virginianus*)*

Northern Saw-whet Owl (*Aegolius acadicus*)*
Burrowing Owl (*Athene cunicularia*)*
Long-eared Owl (*Asio otus*)
Western Screech Owl (*Megascops kennicottii*)*

ORDER: CAPRIMULGIFORMES (GOATSUCKERS AND RELATIVES)

FAMILY: CAPRIMULGIDAE (GOATSUCKERS)
Common Nighthawk (*Chordeiles minor*)

ORDER: APODIFORMES (SWIFTS AND HUMMINGBIRDS)

FAMILY: TROCHILIDAE (HUMMINGBIRDS)
Anna's Hummingbird (*Calypte anna*)*
Rufous Hummingbird (*Selasphorus rufus*)*
Allen's Hummingbird (*Selasphorus sasin*)*

ORDER: CORACIIFORMES (KINGFISHERS AND RELATIVES)

FAMILY: ALCEDINIDAE (KINGFISHERS)
BELTED KINGFISHER (*CERYLE ALCYON*)*

ORDER: PICIFORMES (WOODPECKERS AND RELATIVES)

FAMILY: PICIDAE (WOODPECKERS AND WRYNECKS)
Acorn Woodpecker (*Melanerpes formicivorus*)*
Red-breasted Sapsucker (*Sphyrapicus rubber*)*
Northern Flicker (*Colaptes auratus*)*
Hairy Woodpecker (*Picoides villosus*)*
Nuttall's Woodpecker (*Picoides nuttallii*)*
Downy Woodpecker (*Picoides pubescens*)*

ORDER: PASSERIFORMES (PERCHING BIRDS)

FAMILY: TYRANNIDAE (TYRANT FLYCATCHERS)
Olive-sided Flycatcher (*Contopus borealis*)*
Western Wood-Pewee (*Contopus sordidulus*)
Dusky Flycatcher (*Empidonax oberholseri*)
Pacific Slope Flycatcher (*Empidonax difficilis*)*
Black Phoebe (*Sayornis nigricans*)*
Say's Phoebe (*Sayornis saya*)*
Ash-throated Flycatcher (*Myiarchus cinerascens*)*
Western Kingbird (*Tyrannus verticalis*)*

FAMILY: LANIIDAE (SHRIKES)
Loggerhead Shrike (*Lanius ludovicianus*)*

FAMILY: VIREONIDAE (TYPICAL VIREOS)
Cassin's Vireo (*Vireo cassinii*)
Hutton's Vireo (*Vireo huttoni*)*

FAMILY: CORVIDAE (JAYS, MAGPIES, AND CROWS)
Scrub Jay (*Aphelocoma coerulescens*)*

Yellow-billed magpie (*Pica nuttalli*)*
American Crow (*Corvus brachyrhynchos*)*
Common Raven (*Corvus corax*)*

FAMILY: ALAUDIDAE (LARKS)

Horned Lark (*Eremophila alpestris*)*

FAMILY: HIRUNDINIDAE (SWALLOWS)

Tree Swallow (*Tachycineta bicolor*)*
Violet-green Swallow (*Tachycineta thalassina*)*
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
Bank Swallow (*Riparia riparia*)*

FAMILY: PARIDAE (TITMICE)

Oak Titmouse (*Parus inornatus*)*
Chestnut-backed chickadee (*Parus rufescens*)*

FAMILY: AEGITHALIDAE (BUSHTIT)

Bushtit (*Psaltirparus minimus*)*

FAMILY: SITTIDAE (NUTHATCHES)

White-breasted Nuthatch (*Sitta carolinensis*)*

FAMILY: TROGLODYTIDAE (WRENS)

Bewick's Wren (*Thryomanes bewickii*)*
House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (KINGLETS)

Golden-crowned Kinglet (*Regulus regulus*)*
Ruby-crowned Kinglet (*Regulus calendula*)*

FAMILY: TURDIDAE (THRUSHES)

Western bluebird (*Sialia currucoides*)*
Hermit Thrush (*Catharus guttatus*)*
American Robin (*Turdus migratorius*)*
Varied Thrush (*Ixoreus naevius*)

FAMILY: TIMALIIDAE (BABBLERS)

Wrentit (*Chamaea fasciata*)*

FAMILY: MIMIDAE (MOCKINGBIRDS AND THRASHERS)

Northern Mockingbird (*Mimus polyglottos*)*
California thrasher (*Toxostoma redivivum*)*

FAMILY: STURNIDAE (STARLINGS)

European Starling (*Sturnus vulgaris*)*

FAMILY: MOTACILLIDAE (WAGTAILS AND PIPITS)

American Pipit (*Anthus rubescens*)*

FAMILY: BOMBYCILLIDAE (WAXWINGS)

Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: PTILOGONATIDAE (SILKY FLYCATCHERS)

Phainopepla (Phainopepla nitens)

FAMILY: PARULIDAE (WOOD WARBLERS AND RELATIVES)California Yellow Warbler (*Dendroica petechia brewsteri*)Yellow-rumped Warbler (*Dendroica coronata*)*Townsend's Warbler (*Dendroica townsendi*)*Wilson's Warbler (*Wilsonia pusilla*)*Orange-crowned Warbler (*Vermivora celata*)*Common Yellowthroat (*Geothlypis trichas*)***FAMILY: EMBERIZIDAE (EMBERIZINES)**Spotted towhee (*Pipilo maculatus*)*California towhee (*Pipilo crissalis*)*Rufous-crowned Sparrow (*Aimophila ruficeps*)Chipping Sparrow (*Spizella passerina*)*Black-chinned Sparrow (*Spizella atrogularis*)Savannah Sparrow (*Passerculus sandwichensis*)Song Sparrow (*Melospiza melodia*)*Lincoln's Sparrow (*Melospiza lincolni*)*Golden-crowned Sparrow (*Zonotrichia atricapilla*)*Dark-eyed Junco (*Junco hyemalis*)*Lark Sparrow (*Chondestes grammacus*)*Sage Sparrow (*Amphispiza belli*)*Grasshopper Sparrow (*Ammodramus savannarum*)***FAMILY: CARDINALIDAE (CARDINALS, GROSBEAKS AND ALLIES)**Black-headed Grosbeak (*Pheucticus melanocephalus*)*Lazuli Bunting (*Passerina amoena*)***FAMILY: ICTERIDAE (BLACKBIRDS, ORIOLES AND ALLIES)**Red-winged Blackbird (*Agelaius phoeniceus*)*Western Meadowlark (*Sturnella neglecta*)*Brewer's Blackbird (*Euphagus cyanocephalus*)*Brown-headed Cowbird (*Molothrus ater*)*Bullocks oriole (*Icterus bullockii*)***FAMILY: FRINGILLIDAE (FINCHES)**Purple Finch (*Carpodacus purpureus*)*House Finch (*Carpodacus mexicanus*)*Lesser Goldfinch (*Carduelis psaltria*)*American Goldfinch (*Carduelis tristis*)***FAMILY: PASSERIDAE (OLD WORLD SPARROWS)**House Sparrow (*Passer domesticus*)***CLASS: MAMMALIA****ORDER: DIDELPHIMORPHIA (MARSUPIALS)****FAMILY: DIDELPHIDAE (OPOSSUMS)**

Virginia Opossum (*Didelphis virginiana*)*

ORDER: INSECTIVORA (SHREWS AND MOLES)

FAMILY: SORICIDAE (SHREWS)

Ornate Shrew (*Sorex ornatus*)

Trowbridge's Shrew (*Sorex trowbridgii*)

FAMILY: TALPIDAE (MOLES)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (BATS)

FAMILY: VESPERTILIONIDAE (VESPERTILIONID BATS)

Little Brown Myotis (*Myotis lucifugus*)

California Myotis (*Myotis californicus*)

Western Pipistrelle (*Pipistrellus hesperus*)

Big Brown Bat (*Eptesicus fuscus*)

Townsend's Big-eared Bat (*Plecotus townsendii*)

Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (FREE-TAILED BAT)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

Western Mastiff Bat (*Eumops perotis*)

ORDER: LAGOMORPHA (RABBITS, HARES, AND PIKAS)

FAMILY: LEPORIDAE (RABBITS AND HARES)

Desert Cottontail (*Sylvilagus audubonii*)

Black-tailed Hare (*Lepus californicus*)*

Brush Rabbit (*Sylvilagus bachmani*)*

ORDER: RODENTIA (SQUIRRELS, RATS, MICE, AND RELATIVES)

FAMILY: SCIURIDAE (SQUIRRELS, CHIPMUNKS, AND MARMOTS)

California Ground Squirrel (*Spermophilus beecheyi*)*

Western Gray Squirrel (*Sciurus griseus*)

FAMILY: GEOMYIDAE (POCKET GOPHERS)

Botta's Pocket Gopher (*Thomomys bottae*)*

FAMILY: HETEROMYIDAE (POCKET MICE AND KANGAROO RATS)

California Pocket Mouse (*Perognathus californicus*)*

FAMILY: MURIDAE (MICE, RATS AND VOLES)

Western Harvest Mouse (*Reithrodontomys megalotis*)*

California Mouse (*Peromyscus californicus*)*

Deer Mouse (*Peromyscus maniculatus*)*

California Vole (*Microtus californicus*)*

ORDER: CARNIVORA (CARNIVORES)

FAMILY: CANIDAE (FOXES, WOLVES, AND RELATIVES)

Coyote (*Canis latrans*)*

Red Fox (*Vulpes vulpes*)

Gray Fox (*Urocyon cinereoargenteus*)*

Domestic Dog (*Canis familiaris*)*

FAMILY: PROCYONIDAE (RACCOONS AND RELATIVES)

Raccoon (*Procyon lotor*)*

Ringtail (*Bassariscus astutus*)

FAMILY: MUSTELIDAE (WEASELS, BADGERS, AND RELATIVES)

American Badger (*Taxidea taxus*)*

FAMILY: MEPHITIDAE (SKUNKS)

Striped Skunk (*Mephitis mephitis*)*

FAMILY: FELIDAE (CATS)

Feral Cat (*Felis cattus*)

Cougar (*Puma concolor*)*

Bobcat (*Lynx rufus*)*

ORDER: PERISSODACTYLA (HORSES, TAPIRS, AND RELATIVES)

FAMILY: EQUIDAE (HORSES)

Domestic horse (*Equus caballus*)*

ORDER: ARTIODACTYLA (EVEN-TOED UNGULATES)

FAMILY: SUIDAE (PIGS)

Wild Pig (*Sus Scrofa*)*

FAMILY: CERVIDAE (DEER, ELK, AND RELATIVES)

Black-tailed Deer (*Odocoileus hemionus columbiana*)*

FAMILY: BOVIDAE (SHEEP, GOATS AND RELATIVES)

Domestic Cattle (*Bos Taurus*)

Exhibit 3

Table 2: HCP Land Cover Development Fees and Specialty Fees				Less: 320 Acres Oil and Gas Lease and 1,561 Quarry parcel.	
Land Cover	Acreages	Fee Per Acre	Total Fees	Excluded Land	Net Fees
Fee Zone A: Ranchlands and Natural Lands	5202.4	\$21,801.00	\$113,417,522	\$ 37,388,715	\$ 76,028,807.40
Fee Zone B: Agricultural and Valley Floor Lands	97.5	\$15,043.00	\$1,466,693		\$1,466,693
No Fee Zone Lands: Urban/Suburban and Rural Residential	11.5	\$0	\$0	\$0	\$0
Total Land Cover Fees			\$114,884,215	\$37,388,715	\$77,495,500
Specialty Fees	Acreages	Fee Per Acre	Total Fees	Excluded Land	Net Fees
Serpentine	32.9	\$68,716.00	\$2,260,756	\$0	\$2,260,756
Willow Riparian Forest and Mixed Riparian	263.5	\$171,691.00	\$45,240,579	\$0	\$45,240,579
Seasonal Wetland (includes 0.6 acres of serpentine seep)	22.2	\$452,190.00	\$10,038,618	\$0	\$10,038,618
Coastal and Valley Freshwater Marsh	18.3	\$206,368.00	\$3,776,534	\$0	\$3,776,534
Pond	9.8	\$184,949.00	\$1,812,500	\$0	\$1,812,500
Total Specialty Fees			\$63,128,988	\$0	\$63,128,988
Streams	Linear Feet	Fee per Linear Foot	Total Fees	Excluded Land	Net Fees
Category 1 Streams	27,521	\$623	\$17,145,583	\$0	\$17,145,583
Total Stream Fees			\$17,145,583	\$0	\$17,145,583
Total HCP Fees			\$195,158,785	\$37,388,715	\$157,770,070

Credit for Administrative and Management Costs 35% \$ (55,219,525) (1)

Value of Credit for Contributed Lands \$ 102,550,546

(1) See Sections 8.6.7 Land Dedication In Lieu of Development Fee and Section 9, Land Provided in Lieu of Development Fees of the Habitat Plan for details on eligible land and computation of credit received.