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# Biological Resources Assessment

SPECIALTY GRANULES (IONE) LLC - IONE QUARRY EXPANSION  
PROJECT  
AMADOR COUNTY, CALIFORNIA

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**Prepared For:**

Specialty Granules (Ione) LLC  
13424 Pennsylvania Ave, Suite 303  
Hagerstown, MD 21742

**Prepared By:**

WRA, Inc.  
2169-G East Francisco Boulevard  
San Rafael, California 94901

**Date:**

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## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	1
1.0 INTRODUCTION.....	2
2.0 BACKGROUND AND SETTING.....	2
2.1 Location.....	2
2.2 Existing Conditions and Land Use History .....	3
2.3 Previous Biological Studies.....	4
2.4 Climate and Weather .....	5
2.5 Topography, Geology, and Soils.....	5
2.6 Hydrology .....	7
2.7 Vegetation .....	7
3.0 REGULATORY BACKGROUND .....	7
3.1 Sensitive Biological Communities .....	7
3.2 Special-Status Species.....	10
3.3 Local Policies, Ordinances, and Regulations .....	11
4.0 METHODS .....	12
4.1 Biological Communities .....	12
4.1.1 Non-Sensitive Biological Communities .....	12
4.1.2 Sensitive Biological Communities.....	12
4.2 Special-Status Species.....	13
4.2.1 Literature Review .....	13
4.2.2 Site Assessment .....	13
5.0 EXISTING BIOLOGICAL COMMUNITIES.....	14
5.1 Biological Communities .....	14
5.1.1 Non-Sensitive Biological Communities .....	15
5.1.2 Sensitive Biological Communities.....	17
5.2 Special-Status Species.....	19
5.2.2 Special-Status Wildlife .....	24
6.0 SUMMARY OF PROPOSED PROJECT .....	31
7.0 IMPACTS AND MITIGATION EVALUATION.....	32
7.1 Analytical Methodology and Significance Threshold Criteria .....	33
7.2 Impacts and Mitigation Evaluation for Special-status Species.....	33
7.1.1 Special-status Plant Species.....	34
8.0 REFERENCES .....	45

## LIST OF TABLES

Table 1. Summary of Biological Communities in the Project Area .....	15
Table 2. Project Area Biological Community Conversion.....	41

## LIST OF APPENDICES

- Appendix A – Project Figures
- Appendix B – List of Observed Plant and Wildlife Species
- Appendix C – Potential for Special-Status Species to Occur in the Project Area
- Appendix D – Site Photographs

## LIST OF ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
BRA	Biological Resources Assessment
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	Amador County
CRLF	California Red-Legged Frog
CSRL	California Soil Research Lab
CTS	California Tiger Salamander
CUP	Conditional Use Permit
CWA	Clean Water Act
ESA	Federal Endangered Species Act
FACW	Facultative Wet Wetland plant
HUC	Hydrologic Unit Code
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
MRZ	Mineral Resource Zone
MSL	Mean Sea Level
OBL	Obligate Wetland Plant
OHWM	Ordinary High Water Mark
Project	Ione Quarry Expansion Project
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SGI	Specialty Granules (Ione) LLC
SMARA	Surface Mine and Reclamation Act
SSC	CDFW Species of Special Concern
SR	State Route
TOB	Top of Bank

USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VPA	Vernal Pool Associate
VPFS	Vernal Pool Fairy Shrimp
VPI	Vernal Pool Indicator
VPTS	Vernal Pool Tadpole Shrimp
WBWG	Western Bat Working Group
WPT	Western Pond Turtle
WRA	WRA, Inc.

## **EXECUTIVE SUMMARY**

This report provides an assessment of potential impacts to natural communities and special-status species within the approximately 390-acre proposed Specialty Granules (lone) LLC (SGI; Project) mine expansion Project Area, of which 249.54 acres would be disturbed. The Project Area is located 3 miles west of the city of Lone, in unincorporated Amador County. Between September 2018 and June 2020, WRA, Inc. conducted multiple biological assessments and surveys within the Project Area. Twelve biological communities, including seven sensitive community types covering 46.40 acres, were determined to be present in the Project Area. Surveys determined that no special-status plant species are present, but that 14 special-status wildlife species were determined to have moderate or high potential to occur within the Project Area, and have potential to be adversely affected by the proposed Project. Section 7 of this report details the potential Project Impacts to sensitive communities and wildlife species and appropriate mitigation measures that would be sufficient to reduce Project impacts to less than significant under CEQA.

## **1.0 INTRODUCTION**

Specialty Granules (lone) LLC (SGI) proposes to expand the existing footprint and depth of Lone Quarry to access additional rock reserves. This expansion requires an amended Conditional Use Permit (CUP) and Reclamation Plan that allows for the expanded proposed mining area and additional stockpiling area(s) for the additional cap rock (the proposed Project). The quarry will be expanded to approximately 138 acres and the depth will increase by 605 feet. The stockpile area will expand to approximately 112 acres and increase in height by approximately 44 feet (at its largest increase). No changes in the current rates of production or other operations are proposed. The expanded reserves could provide for an estimated 100 years of operation at current annual production rates.

WRA, Inc. (WRA) prepared this biological resources assessment (BRA) report on behalf of SGI for the Lone Quarry Expansion Project (Project). The SGI Lone Quarry (Mine ID: 91-03-0011) site is located at 1900 CA Highway 104 (Assessor's Parcel Numbers [APNs] 005-080-016-502 and 005-080-020-000), in unincorporated Amador County, California (Project Area; Appendix A – Figure 1).

This document details the background, methods, and results of biological resources assessments conducted by WRA in September 2018 and April, May, and June 2020 within the Project Area. Site visits and biological surveys assessed the Project Area for the (1) potential to support special-status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special-status species were observed during the site visit, they were recorded. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted. This assessment is based on information available at the time of the study and on site conditions that were observed on the dates of the site visits.

## **2.0 BACKGROUND AND SETTING**

### **2.1 Location**

The Project Area is on approximately 390 acres at 1900 State Route (SR) 104, approximately 3 miles west of the city of Lone, in unincorporated Amador County, California (see Figure 1). The Project Area is accessed from the access road off SR 104 just south of where Michigan Bar Road meets SR 104, and is located within Section 17, Township 6 North, Range 9 of the Mt. Diablo Baseline and Meridian U.S. Geological Survey 7.5-minute quadrangle.

The Project Area is located within the western foothills of the Sierra Nevada mountain range. Topography consists of gently to moderately undulating hills and swales, circling the existing quarry area. Undeveloped portions of the Project Area are predominantly non-native annual grasslands with patches of oak woodland, interspersed seasonal wetlands, and ephemeral streams.

The Project Area is surrounded by undeveloped open space, agriculture, industrial, low-density residential development, and commercial uses.

## 2.2 Existing Conditions and Land Use History

The Project Area consists of undisturbed land; an active quarry; materials stockpiles; a plant for processing aggregate (i.e., cap rock) and material for granules production; a scale; equipment, fuel storage, maintenance, and storage building; a solar field, constructed drainage ditches and stormwater containment, and access roads. These uses and entitlements are further described below.

Amador County (County) permitted the mine, processing, and rail load-out operations in 1989. The original CUP's term was through 2038 (extended in 2012 to 2075). In 1991 the County approved the addition of an asphalt batch plant on-site, which is no longer in use. In 1998 the County permitted a plant for producing granules (used in the off-site manufacture of roofing materials). The granules plant was permitted under a separate CUP and Reclamation Plan and is not within the boundaries of this Project Area.

Existing operations include stripping materials, drilling, blasting, transporting materials to the processing facilities for crushing, and stockpiling materials. The current quarry is approximately 1,600 feet long, 1,000 feet wide, and up to 125 feet deep, and is oriented northwest-southeast and consists of three benches. The uppermost bench is approximately 25 feet high, the middle bench is approximately 45 feet high, and the lower bench is approximately 55 feet high. The current cap rock/overburden soils stockpile has angle-of-repose slopes that are approximately 60 to 75 feet high along the southern perimeter of the stockpile.

The quarry is developed as a typical hard-rock quarry bench/highwall configuration. The quarry is created through successively deeper cuts (levels) in the rock until the design depth is reached. Rock reserves are removed through a combination of drilling, blasting, and excavation equipment. A working level was established at the upper quarry limit. After the initial level was extended laterally along the quarry face, a new level was established at the next lower elevation. The quarry depth is increased by successive levels, with each level off-set by a bench and a highwall, until the planned quarry design depth is reached. Successive benches are developed as the quarry progresses downward. Loaders or similar excavating equipment remove the rock for processing after blasting. Blasted rock is loaded onto haul trucks and transported to the appropriate processing plant (for aggregate or granule processing).

During mining operations three material types are encountered that are handled in different ways:

- Overburden soil: New mining areas overlain by overburden soil are stripped before mining. Stripped overburden soils are stockpiled. Selected overburden soils may be used for concurrent reclamation. For example, this material could be used to cover completed slopes on the cap rock stockpiles before revegetation begins. The overburden soils are also stockpiled for future reclamation uses.
- Cap rock: The rock stockpile located west of the quarry is used to dispose of the slightly weathered greenstone located nearest the surface, which is referred to as "cap rock." This cap rock is generally suitable for use in producing high-quality construction aggregates. After it is removed, it is stockpiled next to the quarry and processed (crushed and screened) at the processing plant by a contract mining operator. The processed material is trucked off-site. SGI has a 2011 agreement with the County requiring a minimum of 100,000 tons of this material to be transported off-site per year, on average for the next 20–25 years, resulting in a minimum of 4,000 truck trips a year. Remaining overburden soils and cap rock are added to the stockpile on-site.



- Granules: After the overburden soils and cap rock are removed, the underlying meta-basalt rock is removed via blasting. The material is processed (crushed and screened) through primary and secondary crushing at the south end of the quarry and then hauled via trucks to the separately permitted granules plant for additional processing, to produce raw granule production feedstock.

These raw granules are then either converted into colored roofing granules or “headlap,” uncolored granules used on the unexposed section of shingles. Minimal groundwater intercepts the active quarry faces. Groundwater ponding on the quarry bottom is pumped out as needed. Surface water that does not flow into the quarry either runs off-site or collects in settling ponds at the base of the stockpile and adjacent to the outside of the quarry area.

### **2.3 Previous Biological Studies**

Prior to 2017, biological studies were conducted within the Project Area by TKS Consulting and two separate studies by Vollmar. These survey efforts are summarized below.

#### TKS Consulting (1987)

In May and June of 1987, TKS Consulting surveyed approximately 160 acres of the Project Area as a component of due diligence associated with a change to the pit design. TKS is a forester and as such the information included in the report is limited to general observations of plant and wildlife species, communities, and recommended mitigation measures.

Given that this report is more than 30 years old at the time this BRA was written, TKS did not have access to electronic databases, maps, and other modern tools used today. The appendices list species observed as well as species “expected to utilize the site,” but were not actually observed. With respect to wildlife species, only avian and mammalian taxa are mentioned, no mention of amphibians, reptiles, or invertebrates are made.

By all modern standards, the TKS 1987 report is interesting, but provides little information relevant to navigating the regulatory setting in 2020, and none of the wildlife species noted as observed are considered special-status species today.

#### Vollmar (2011)

Vollmar prepared a Biological Resource Assessment (BRA) in support of the Proposed Newman Ridge Project. The area subject to this report includes a portion of the Project Area, as well as surrounding areas to the east and south. The Vollmar BRA evaluated the following: Biological resources evaluated for this report include:

- Potentially jurisdictional wetlands and other waters
- Stream corridors and riparian habitats
- Oak woodlands
- Special-status plant species
- Listed vernal pool large branchiopods
- California tiger salamander
- Swainson’s hawk nesting sites
- Valley elderberry longhorn beetles

The relevant portions of the Vollmar Studies are cited herein.

### Vollmar (2016)

Vollmar prepared a Biological Resource Assessment (BRA) in support of a previous iteration of the Proposed SGI Quarry Expansion. This BRA relied heavily on data collected from the 2009-2010 surveys in support of the Newman Ridge Project.

## **2.4 Climate and Weather**

The Project Area is set within the western Sierra Nevada foothills, which is characterized by a Mediterranean climate with dry, hot summers, and relatively mild winters. The Project Area is located above the valley fog influence of the Central Valley, and below the montane snowfall of the Sierra Nevada. Average annual precipitation for Lone is 22.04 inches, with the majority falling as rain in the winter months (December through March). The lowest minimum average monthly temperature in degrees Fahrenheit is 37.2 in December, and the highest maximum average monthly temperature is 91.5 degrees in July (WRCC 2019).

## **2.5 Topography, Geology, and Soils**

The Project Area is located within the western foothills of the Sierra Nevada mountain range. Topography in the Project Area typically consists of gently to moderately undulating hillslopes and swales with slopes of 3 to 30 percent, circling the existing quarry pit, which is the high point in the Project Area. Active quarry operations have altered the local topography and soils within the Project Area with areas of excavation temporary stockpiling, and/or permanent fill and reclaimed slopes. Historical aerial imagery (National Environmental Title Research 2019, Google Earth 2019), indicates that mining activities in the Project Area commenced sometime between 1967 and 1993.

Elevations range from approximately 460 feet above mean sea level (amsl) along the rim of the quarry pit, to approximately 300 feet amsl along the northeastern border of the Project Area. SoilWeb (CSRL 2019) indicates that the Project Area contains eight mapping units consisting of seven soil series, as well as water, placer diggings and riverwash. Soil mapping units within the Project Area include: Auburn-Argonaut silt loams, 0 to 16 percent slopes; Auburn-Argonaut very rocky silt loams, 3 to 31 percent slopes; Inks loam and Rock land, 3 to 45 percent slopes; Pardee cobbly loam, 3 to 31 percent slopes; Pentz gravelly sandy loam, 2 to 16 percent slopes; Pentz sandy loam, 16 to 31 percent slopes; Pentz sandy loam, 2 to 16 percent slopes; Red Bluff-Mokelumne complex, 5 to 16 percent slopes, water, placer diggings, and riverwash.(Appendix A – Figure 2). The soil series that makes up the mapping units within the Project Area are described below.

Auburn Series: The Auburn series consists of well-drained, shallow to moderately deep silt loam soils formed in material weathered from amphibolite schist. These soils occur on foothills and have slopes of 2 to 75 percent. In a representative profile, the surface layer (A-horizon) is a slightly acidic (pH 6.4) reddish brown (5YR 4/4) silt loam from 0 to 9 inches. This is underlain by Bw-horizon of slightly acidic (pH 6.5) yellowish red (5YR 4/6) silt loam from 9 to 14 inches. This is underlain by partly weathered amphibolite schist bedrock at 14 to 28 inches. Rock fragments within the soil profile range from 0 to 25 percent and consist of pebbles, cobbles and stones (CSRL 2019). The two soil mapping units containing Auburn Series soils are considered hydric soils (USDA 2019).

Argonaut Series: The Argonaut series consists of well-drained, moderately deep gravelly loam soils formed in materials weathered from meta-andesite. These soils occur on undulating to hilly broad ridges to slightly concave slopes of 2 to 30 percent. In a representative profile, the surface layer (A-horizon) is a slightly acidic (pH 6.1 to 6.3) dark reddish brown (5YR 3/4) to yellowish red (5YR 3/6) gravelly loam with 20 percent pebbles from 0 to 6 inches. This is underlain by Bt-horizon of slightly acidic (pH 6.1 to 6.2) yellowish red (5YR 3/6), and yellowish brown (10YR 5/4) to brown (7.5YR 5/4) gravelly heavy loam to gravelly clay from 6 to 21 inches. Rock fragments within the Bt-horizon range from 8 to 22 percent pebbles, cobbles, and stones. This is underlain by deeply weathered meta-andesite bedrock from 21 to 27 inches (CSRL 2019). The two soil mapping units containing Argonaut Series soils are considered hydric soils (USDA 2019).

Inks Series: The Inks series consists of well-drained, shallow soils that formed in material weathered from consolidated or cemented sediments from volcanic rocks. These soils occur on undulating to hilly tabular volcanic ridges and sideslopes. In a representative profile, the surface layer (A-horizon) is a moderately acid (pH 5.9), dark brown (10YR 3/3), very cobbly sandy clay loam with 20 percent gravel and 15 percent cobbles from 0 to 6 inches depth. This is underlain by a BA/Bt-horizon of moderately acid (pH 5.9), dark brown (10YR 3/3) very gravelly clay loam to very cobbly loam with up to 35 percent gravels and up to 25 percent cobbles from 6 to 13 inches. This is underlain by a 2Cr-Horizon of partly weathered weakly consolidated tuff from basic igneous rock sources 13 to 18 inches (CSRL 2019). Inks Loam and Rock Land is not considered a hydric soil (USDA 2019).

Mokelumne Series: The Mokelumne series consists of moderately deep, well or moderately well drained soils formed in hillslope alluvium underlain by material weathered from sandstone and weakly consolidated clayey marine sediments. These soils occur on dissected terraces, hills, sideslopes of terrace remnants, and in swales with slopes of 2 to 35 percent. In a representative profile, the surface layer (A-horizon) is a slightly to strongly acid (pH 6.5 to 5.5), brown (7.5YR 4/4), gravelly loam with 25 to 30 percent pebbles, and up to 5 percent cobbles from 0 to 10 inches. This is underlain by a 2Bt-horizon of strongly acid to very strongly acid (pH 5.2 to 4.5), red (2.5YR 5/6) to reddish yellow (5YR 6/6) and light gray (2.5Y 7/2) clay from 10 to 31 inches. This is underlain by a 2BCt and 2Cr layer consisting of clay and weakly consolidated clayey sediments from 31 to 46 inches (CSRL 2019). Red Bluff-Mokelumne complex, 5 to 16 percent slopes is considered a hydric soil (USDA 2019).

Pardee Series: The Pardee series consists of shallow, well drained soils formed in mixed alluvium. These soils occur on terrace remnants and eroded fan remnants on hills with slopes of 0 to 30 percent. In a representative profile, the surface layer (A-horizon) is a slightly acid (pH 6.3), dark brown (7.5YR 3/4), gravelly to cobbly loam with 10 to 15 percent gravels, and 5 to 15 percent cobbles from 0 to 9 inches. This is underlain by a Bt-horizon of moderately acid (pH 6.0 to 5.8), reddish brown (5YR 4/4) very cobbly to extremely cobbly loam with 10 to 20 percent rounded indurated gravels, and 45 to 60 percent rounded indurated cobbles from 9 to 17 inches. This is underlain by a 2Bt-layer of strongly acid (pH 5.3) brown (7.5YR 4/2) very cobbly clay with flecks of light gray (10YR 7/2) weathered sand, 5 percent mixed rounded indurated gravel, and 35 percent mixed rounded indurated cobbles from 17 to 18 inches. Finally, this is underlain by a 2R-layer of moderately acid (pH 6.0) very pale brown (10YR 7/3), light brownish gray (10YR 6/2), light brownish gray (10YR 6/2), brownish yellow (10YR 6/6) and gray (5Y 5/1) consolidated andesitic conglomerate from 18 to 41 (CSRL 2019). Pardee cobbly loam, 3 to 31 percent slopes is not considered a hydric soil (USDA 2019).

Pentz Series: The Pentz series consists of shallow, well drained soils formed in colluvium or residuum derived from basic tuff. These soils occur on hills with mound and swale topography

and on backslopes of hills with slopes of 2 to 60 percent. In a representative profile, the surface layer (A-horizon) is a moderately acid (pH 6.0), very dark grayish brown (10YR 3/2), to dark brown (10YR 3/3) fine sandy loam with 5 percent gravel from 0 to 9 inches. This is underlain by Bw- and Bt-horizons of slightly acid (pH 6.5) very dark grayish brown (10YR 3/2) to very dark brown (10YR 2/2), fine sandy loam from 9 to 16 inches depth. Finally, this is underlain by a Cr-Horizon of slightly acid (pH 6.5), variegated olive brown (2.5Y 4/4), very dark grayish brown (2.5Y 3/2) and light olive brown (2.5Y 5/4) consolidated, basic tuff from 16 to 22 inches (CSRL 2019). Of the three soil mapping units containing Pentz series soils, only Pentz gravelly sandy loam, 2 to 16 percent slopes is considered hydric (USDA 2019).

Red Bluff Series: The Red Bluff series consists of very deep, well drained soils formed in old mixed alluvium. These soils occur on terraces with slopes of 0 to 9 percent. In a representative profile, the surface layer (A-horizon) is a very strongly acid (pH 5.0), dark reddish brown (2.5YR 3/4), gravelly loam to loam with 10 to 20 percent pebbles from 0 to 20 inches. This is underlain by a Bt-horizon of strongly acid to very strongly acid (pH 5.2 to 5.0), weak red (10R 4/4) clay loam to gravelly clay loam from 20 to 37 inches. This is underlain by a 2Bt and 2BCt and 2Cr layer consisting of gravelly clay loam from 37 to 72 inches (CSRL 2019). Red Bluff-Mokelumne complex, 5 to 16 percent slopes is considered a hydric soil (USDA 2019).

Placer Diggings and Riverwash: Areas mapped as placer diggings and riverwash consist of cobbly and gravelly substrate that has been sluiced or dredged for gold and the material left in hummocky mounds or cobbly stringers along streams (USDA 1965). Due to their location in and around streams and floodplains these areas also contain natural alluvium deposited by streams. Placer diggings and riverwash is considered a hydric soil (USDA 2019).

## **2.6 Hydrology**

The Project Area is within the Lower Consumnes-Lower Mokelumne watershed (HUC 18040005). Sources of hydrology within the Project Area include direct precipitation falling as rain, with occasional, non-persistent snowfall.

## **2.7 Vegetation**

The majority of the Project Area consists of developed areas, including the quarry pit, a solar array, and existing roads. The surrounding vegetation is dominated by non-native annual grassland interspersed with seasonal wetland, vernal pools, and ephemeral stream features. Patches of tree- or shrub-dominated stands including blue oak woodland, interior live oak woodland, and buckbrush chaparral are present around the Project Area perimeter. Section 5 contains a detailed discussion of each plant community, and descriptions of the special-status plant species observed or having potential to occur in the Project Area.

# **3.0 REGULATORY BACKGROUND**

The following sections provide an overview of the regulatory context of the BRA, including applicable laws and regulations, that were applicable to biological resources that may exist on-site at the time of this assessment.

## **3.1 Sensitive Biological Communities**

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal

regulations (such as the Clean Water Act [CWA]), state regulations (such as the Porter-Cologne Act, the California Fish and Game Code [CFGF], and CEQA), or local ordinances or policies (such as City or County tree ordinances, Special Habitat Management Areas, and General Plan Elements).

#### Waters of the United States, including Wetlands

The United States Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The new final federal regulations clarify that the following are not considered “waters of the United States”:

- (a) Groundwater, including groundwater drained through subsurface drainage systems (this subsection impacted by recent U.S. Supreme Court Case holding that groundwater is jurisdictional in certain circumstances);
- (b) Ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools;
- (c) Diffuse stormwater runoff and directional sheet flow over upland;
- (d) Ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations.
- (e) Prior converted cropland;
- (f) Artificially irrigated areas that would revert to upland if artificial irrigation ceases;
- (g) Artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters;
- (h) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose obtaining fill, sand, or gravel;
- (i) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;
- (j) Groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters;
- (k) Waste treatment systems.

#### Waters of the State, including Wetlands

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The State Water

Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit, but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

#### Sections 1600-1616 of California Fish and Game Code

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

#### Other Sensitive Biological Communities

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFG 2010, CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2018a). CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances or under the Oak Woodlands Protection Act.

## **3.2 Special-Status Species**

### Endangered and Threatened Plants, Fish, and Wildlife

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of "endangered" and "threatened" plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing, and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. Take under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance, and impacts to habitat for listed species. Actions that may result in "take" of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species". Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (California Fish and Game Code 2050 et seq.) prohibits a "take" of any plant and animal species that the California Fish and Game Commission determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to "candidate species" which are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity.

### Fully Protected Species and Designated Rare Plant Species

This category includes specific plant and wildlife species that are designated in California Fish and Game Code (CFGC) as protected even if not listed under CESA or the ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully

Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take”, with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP.

#### Special Protections for Nesting Birds and Bats

The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

#### Species of Special Concern, Movement Corridors, and Other Special Status Species under CEQA

To address additional species protections afforded under CEQA, CDFW has developed a list of special species as “a general term that refers to all of the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status.” This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

### **3.3 Local Policies, Ordinances, and Regulations**

#### Amador County General Plan

The Amador County General Plan and Implementation Plan (Amador County 2016a, 2016b) set forth goals and policies for habitat and biological resource conservation, drainage, erosion, water quality, and mineral, historic, and archeological resources within unincorporated areas of Amador County. The Implementation Plan is meant to guide the County’s elected and appointed officials, staff, and the public when putting the adopted General Plan goals and policies into practice. The Amador County General Plan Open Space Element includes discussion of the County’s sensitive biological resources including oak woodland habitat, wetlands, riparian habitats, and other sensitive communities, and special-status species. Implementation Plan, “Program D-4: Biological Resources” determines that “when considering discretionary development proposals, it is the County’s objective to avoid or substantially reduce impacts to special-status species, riparian habitat, lone chaparral, oak woodlands, and wetlands (including vernal pools and non-jurisdictional wetlands) through project design and modification to the extent feasible.”



## 4.0 METHODS

WRA biologists conducted site visits to the Project Area on September 13 and 14, 2018, April 17, May 14, 15 and 16, July 2, 2019, and June 9 and 10, 2020. The Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) whether existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) whether sensitive habitats are present. Project figures are provided in Appendix A. All plant and wildlife species encountered were recorded and are summarized in Appendix B. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (Jepson eFlora 2019), except where noted. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities. Special-status species with a potential for occurrence, determined based on field visits and habitat availability, are described in Appendix C. Representative photographs of the Project Area taken during field visits are included in Appendix D.

### 4.1 Biological Communities

Prior to the site visits, the *Soil Survey of Amador Area*, California U.S. Department of Agriculture (USDA 1965) and SoilWeb (CSRL 2019) were examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Project Area. Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and/or *A Manual of California Vegetation, Online Edition* (CNPS 2019a). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

#### 4.1.1 Non-Sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

#### 4.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Special methods used to identify sensitive biological communities are discussed below.

#### Wetlands and Non-Wetland Waters

A full focused delineation of wetlands and non-wetland waters potentially subject to jurisdiction by the Corps, and RWQCB was conducted concurrent with the May 15, 2019, and June 9 and 10, 2020 site visits (WRA 2020). The delineation followed the methods described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (Corps 2008, and *A Field Guide to the Identification of the Ordinary High Water*

*Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008 ). The results of the delineation are included in this report.

### Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas or other sensitive plant communities recognized by CDFW. The presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

Prior to the site visit, aerial photographs, local soil maps, and *A Manual of California Vegetation, Online Edition* (CNPS 2019a) were reviewed to assess the potential for sensitive biological communities to occur in the Project Area. All alliances within the Project Area with a ranking of S1 through S3 were considered sensitive biological communities and mapped. These communities are described in Section 4.1.2 below.

## **4.2 Special-Status Species**

### *4.2.1 Literature Review*

Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Goose Creek, Clay, Sloughouse, Carbondale, Irish Hill, Lone, Wallace, Clements, and Lockeford 7.5-minute U.S. Geological Survey (USGS) quadrangle maps. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- CNDDDB records (CDFW 2019)
- USFWS Information for Planning and Conservation Report (IPaC; USFWS 2019a)
- National Wetlands Inventory (USFWS 2019b)
- CNPS Rare and Endangered Plant Inventory (CNPS 2019b)
- CDFG publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- CDFG publication “California Bird Species of Special Concern” (Shuford and Gardali 2008)
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson *et al.* 2016)
- Preliminary Biological Impact and Mitigation Assessment of the Proposed SGI Lone Quarry Expansion Area (Vollmar 2016).

### *4.2.2 Site Assessment*

Multiple site visits were made to the Project Area to search for suitable habitats for special-status species. Habitat conditions observed at the Project Area were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Project Area was then evaluated according to the following criteria:

- **No Potential:** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely:** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential:** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential:** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present:** Species is observed on the site or has been recorded (i.e., CNDDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. The site visit does not constitute a protocol-level survey for all species with potential to occur in the Project Area; however, protocol-level rare plant surveys were conducted concurrent with this assessment. If a special-status species was observed during the site visit, its presence is recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence is recorded and discussed below in Section 5.2. For some species, a site assessment at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 7.0.

## 5.0 EXISTING BIOLOGICAL COMMUNITIES

The following sections present the results of the biological resources assessment within the Project Area. Project figures are provided in Appendix A. A list of plant and wildlife species observed is included as Appendix B. The assessment of the potential for special-status plant and wildlife species to occur in the Project Area is provided as Appendix C. Photographs of the Project Area are provided as Appendix D.

### 5.1 Biological Communities

Table 1 summarizes the area of each biological community type observed in the Project Area. Non-sensitive biological communities include developed (active quarry), detention basin, mining-related drainage ditch, non-native annual grassland, and buckbrush chaparral. Potentially sensitive biological communities include: seasonal wetland, vernal pool, ephemeral stream,

drainage ditch, pond, blue oak woodland, and interior live oak woodland. Descriptions for each biological community are contained in the following sections and depicted in Appendix A - Figure 3.

Table 1. Summary of Biological Communities in the Project Area

Community Type	Area (acres)
<b>Non-sensitive</b>	
Developed	147.99
Quarry drainage ditch	0.46
Quarry detention basin	4.72
Non-native annual grassland	184.76
Buckbrush chaparral	4.88
<b>Subtotal</b>	<b>342.81</b>
<b>Potentially Sensitive</b>	
Seasonal wetland	2.24
Freshwater marsh	1.00
Vernal pool	0.33
Ephemeral stream	0.67
Drainage ditch	<0.01
Pond	0.26
Blue oak woodland	37.44
Interior live oak woodland	4.46
<b>Subtotal</b>	<b>46.40</b>
<b>Total</b>	<b>389.21</b>

#### 5.1.1 Non-Sensitive Biological Communities

**Developed.** The Project Area contains approximately 147.99 acres of previously developed, active quarry operations. Developed portions of the Project Area include an existing open-pit quarry, solar power generation area and haul roads. Areas mapped as developed have been disturbed by quarry activities and are predominantly lacking vegetation, though some locations host low cover of weedy and/or native plant species. Generally, plant cover in these areas is very sparse due to the lack of topsoil. This community offers little habitat for plants or animals.

**Quarry drainage ditch.** The Project Area contains approximately 0.46 acre of quarry drainage ditches. These man-made features, most of which were excavated between 2003 and 2009 (Google Earth 2019) in dry land to intercept stormwater runoff for reuse on site as part of the mining operations. These features are specifically exempted from the definition of Waters of the U.S. and State.

**Quarry detention basins.** The Project Area contains approximately 4.72 acres of quarry detention basins. These man-made features, most of which were built between 2003 and 2009

(Google Earth 2019) were excavated in dry land to retain and treat stormwater runoff and some store water for reuse on site as part of ongoing mining operations. The principal hydrology sources include runoff from mining-related drainage ditches, overland sheet-flows and groundwater seepage. The hydroperiod varies from perennial to seasonal. Detention basins with perennial hydrology typically contained emergent marsh vegetation dominated by cattails (*Typha latifolia*, and *T. angustifolia*), California bulrush (*Schoenoplectus californicus*), with occasional Gooding's willow (*Salix gooddingii*) saplings present. Detention basins with seasonally flooded hydrology were typically dominated by hydrophytic grasses and forbs including annual beard grass (*Polypogon monspeliensis*), spikerush (*Eleocharis macrostachya*), Italian ryegrass (*Festuca perennis*), and coyote thistle (*Eryngium vaseyi*).

These man-made features were excavated in dry land to retain and treat stormwater runoff and some store water for reuse on site as part of the mining operations. These features and are specifically exempted from the definition of Waters of the U.S. and Waters of the State, and are therefore not subject to Corps and RWQCB jurisdiction.

**Non-native annual grassland.** The Project Area contains approximately 184.76 acres of non-native annual upland grasslands. Non-native grasslands are known throughout California on all slopes and aspects. Non-native grassland areas within the Project Area are on slopes and flats, typically interfacing with blue oak woodland and seasonal wetlands. Vegetative cover within these areas is typically dominated by dense non-native invasive grasses and forbs including Medusa head (*Elymus caput-medusae*), slim oat (*Avena barbata*), riggut brome (*Bromus diandrus*), and dogtail grass (*Cynosurus echinatus*), goatgrass (*Aegilops triuncialis*), and Italian ryegrass (*Festuca perennis*). Dominant and associated forbs observed within non-native annual grassland included narrow tarplant (*Holocarpha virgata*), hawkbit (*Leontodon saxatilis*), sky lupine (*Lupinus nanus*), rusty-haired popcornflower (*Plagiobothrys nothofulvus*), blue dicks (*Dichelostemma capitatum*), common buttercup (*Ranunculus californicus*), variegated clover (*Trifolium variegatum*), and Ithuriel's spear (*Triteleia laxa*). Scattered rock outcrops with sparse herbaceous and shrub cover are present within this community. Forb and shrub species associated with outcrops include caterpillar phacelia (*Phacelia cicutaria* var. *cicutaria*), poison oak (*Toxicodendron diversilobum*) and sticky monkeyflower (*Diplacus aurantiacus*). Non-native annual grassland is not considered a sensitive biological community.

**Buckbrush chaparral (*Ceanothus cuneatus* Shrubland Alliance).** Rank: G4 S4. The Project Area contains approximately 4.88 acres of buckbrush (*Ceanothus cuneatus*) chaparral, located in the southwest corner. Buckbrush chaparral is known throughout hilly and mountainous regions of California, from the Northern, Central, and Southern California Coast, Klamath Mountains, Sierra Nevada Foothills, and Sierra Nevada Range. This vegetation community is typically located on ridges and upper slopes. Soils are shallow, rocky, and well drained (CNPS 2019a).

Buckbrush chaparral in the Project Area is mapped according to CNPS (2019a) as having buckbrush greater than 60 percent relative cover in the shrub layer. Buckbrush chaparral within the Project Area is limited to southeastern corner of the Project Area. Buckbrush chaparral is dominated by buckbrush, with patches of co-dominant chamise (*Adenostoma fasciculatum*). The herbaceous layer in the understory predominantly consists of sparse cover of non-native grasses including silvery hairgrass (*Aira caryophyllaea*), and nit grass (*Gastridium phleoides*). The herbaceous layer is denser in openings within this community. Openings are typically dominated by non-native grasses and forbs including silvery hairgrass, rattail sixweeks fescue (*Festuca myuros*), and spotted rockrose (*Tuberaria guttata*). Buckbrush chaparral has a sensitivity ranking of G4, S4 indicating that it is apparently secure both globally and in California, and is thus not considered a sensitive community.

### 5.1.2 Sensitive Biological Communities

**Ephemeral stream.** The Project Area contains approximately 0.67 acre of ephemeral streams, which are mainly concentrated around the perimeter of the Project Area. Three of these features are mapped as unnamed dashed “blue-line” streams on the Lone, Goose Creek, Carbondale, and Irish Hill USGS 7.5-minute quadrangle maps. These streams presumably are tributary to Laguna Creek or Hadselville Creek to the north and east, respectively. Streams to the west, north, and east of the Quarry pit are located in the Cosumnes River watershed, whereas streams to the South of the Quarry pit are located in the Mokelumne River watershed.

Ephemeral streams within the Project Area are similar in dimension and form averaging approximately 2 to 4 feet in width between OHWMs, and approximately 10 to 15 feet between Tops of Bank (TOBs). The beds of the ephemeral stream channels are typically composed of silts and gravels, often vegetated with non-native annual grasses, including Italian ryegrass, soft chess (*Bromus hordeaceus*), and purple false brome (*Brachypodium distachyon*). OHWM indicators included the presence of a bed and bank, scouring, and sediment deposition. Ephemeral stream channels typically lacked flows during the time of the site visits, however, isolated pools of standing water were observed during the April site visits. Areas mapped as ephemeral stream are considered jurisdictional under the State Wetland Policy. Areas mapped as ephemeral stream are also considered CDFW jurisdiction under Section 1600-1616 of the CFGC.

**Vernal pool; Fremont goldfields-downingia vernal pools (*Lasthenia fremontii* - *Downingia [bicornuta]*) Herbaceous Alliance. G2, S2.** The Project Area contains approximately 0.33 acre of vernal pools located in the northern half of the Project Area. Vernal pools within the Project Area are enclosed depressions situated over cobbly loam soils with high clay content. Vernal pools within the Project Area most readily fit within the Fremont goldfields-downingia vernal pools (*Lasthenia fremontii* - *Downingia [bicornuta]*) Herbaceous Alliance, as containing Fremont’s goldfields (*Lasthenia fremontii*), bristled downingia (*Downingia bicornuta*), common hedge hyssop (*Gratiola ebracteata*), and/or vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*) present and abundant collectively or in part with upland species (CNPS 2019a). Vernal pools in the Project Area are typically dominated by a combination of characteristic vernal pool associated species and hydrophytic grasses. Dominant forb species present in vernal pools included Fremont’s goldfields, common hedge hyssop, and coyote thistle. Other vernal pool indicator species observed included Sacramento mesamint (*Pogogyne zizyphoroides*), stipitate popcornflower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus brevissimus* var. *brevissimus*), and dwarf brodiaea (*Brodiaea nana*). Hydrophytic grasses observed in vernal pools included Italian ryegrass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), foxtail grass (*Alopecurus saccatus*), and annual beardgrass (*Polypogon monspeliensis*). Areas mapped as vernal pools within the Project Area meet the membership rules of the Fremont goldfields-downingia vernal pools herbaceous alliance, which has a sensitivity ranking of G2, S2, meaning this community is considered imperiled both globally and in California.

Areas mapped as vernal pools contained indicators of wetland hydrology and hydric soils sufficient to satisfy criteria to meet the wetland definition pursuant to the CWA and the State Wetland Policy definition of a wetland.

**Seasonal wetland.** The Project Area contains approximately 2.24 acres of seasonal wetlands scattered throughout the Project Area. Within the Project Area, seasonal wetlands occur in concave swales, enclosed depressions, and seepage areas. Seasonal wetlands within the Project Area are typically dominated by hydrophytic gramindoids, grasses and forbs, including Iris

leaved rush (*Juncus xiphioides*), spikerush (*Eleocharis macrostachya*), Italian ryegrass, Mediterranean barley, meadow barley (*Hordeum brachyantherum*), and wild hyacinth (*Triteleia hyacinthina*). Areas mapped as seasonal wetlands which are situated in enclosed depressions differ from vernal pools, in that seasonal wetlands characteristically lack characteristic vernal pool indicator species, with the exception of coyote thistle, which is widespread throughout the Project Area in seasonal wetlands, vernal pools, drainage ditches, and occasionally in upland areas.

Areas mapped as seasonal wetland were almost entirely dominated by Italian ryegrass, and contained indicators of wetland hydrology and hydric soils, sufficient to satisfy criteria to meet the wetland definition pursuant to the CWA, and as such are jurisdictional features under Sections 401 and 404 of the CWA and the State Wetland Policy definition of a wetland. Seasonal wetlands that have an above-ground connection to ephemeral streams are also classified as riparian vegetation subject to CDFW jurisdiction under Section 1600-1616 of the CFGC.

**Freshwater marsh.** The Project Area contains approximately 1.00 acre of freshwater marsh. Within the Project Area, areas delineated as freshwater marsh typically occur in concave swales, enclosed depressions, or seepage areas, some of which appear to be partially impounded or receiving hydrology inputs from nearby non-jurisdictional quarry detention basins. Freshwater marshes within the Study Area are typically dominated by obligate (OBL) graminoids, including narrow leaf cattail (*Typha angustifolia*), and spike rush (*Eleocharis macrostachya*).

Areas mapped as freshwater marsh contained indicators of hydrophytic vegetation, wetland hydrology, and hydric soils, sufficient to satisfy criteria to meet the wetland definition pursuant to the CWA, and the State Wetland Policy definition of a wetland. Freshwater marsh features which have an above-ground connection to ephemeral streams or pond are also classified as riparian vegetation subject to CDFW jurisdiction under Section 1600-1616 of the CFGC.

**Drainage ditch.** The Project Area contains one very small (less than 0.01 acre) drainage ditch which may be considered jurisdictional. The drainage ditch is located in the northeastern boundary of the Project Area where an ephemeral stream crosses the quarry road. This drainage ditch appears to have been excavated in dry land. However, the ditch has a direct, above ground connection to a potentially jurisdictional stream. Therefore, this single drainage ditch may be considered jurisdictional under the State Wetland Policy.

**Pond.** The Project Area contains one pond feature occupying approximately 0.87 acre in the northeastern portion of the Project Area. This feature contained an earthen bottom and fringe of emergent marsh vegetation including California bulrush. Historical aerial photographs (Google Earth 2019) indicate that this feature was likely excavated in dry land sometime between 1993 and 1998, possibly related to previous mining activities. Although the pond was likely excavated in dry land, the feature appears to be abandoned, and is currently meeting indicators of OHWM. Therefore, the pond may be considered jurisdictional the CWA, State Wetland Policy, and Sections 1600-1616 of the CFGC.

**Blue oak woodland (*Quercus douglasii* Woodland Alliance). G4, S4.** The Project Area contains approximately 37.45 acres of blue oak woodland. Blue oak woodland is known from the Northern to Southern California Coast and Coast Ranges, Klamath Mountains, Southern Cascades to the Sierra Nevada Foothills and eastern Sierra Nevada, from Del Norte County south to Los Angeles County. This vegetation community is typically located on valley bottoms, foothills, and rocky outcrops. Soils are shallow, low in fertility, moderately to excessively drained with extensive rock fragments (CNPS 2019a).

Blue oak woodland in the Project Area is mapped according to CNPS (2019a) as having blue oak greater than 50 percent relative cover in the tree canopy. Blue oak woodland within the Project Area consists in upland settings on slopes and flats with occasional rock outcrops, and along ephemeral streams. The overstory is dominated by blue oak with occasional, sub-dominant interior live oak (*Q. wislizeni*), and buckeye (*Aesculus californica*). Within the Project Area, this community has a relatively open understory dominated by a mixture of non-native and native grasses and forbs, and occasional native shrubs. Understory shrub species observed include poison oak. The herbaceous layer is dominated by non-native annual grasses and forbs including dogtail grass, Medusa head, ripgut brome, and Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*). Blue oak woodland has a sensitivity ranking of G4, S4 indicating that it is apparently secure both globally and in California, and is thus not considered a sensitive community. However, oak woodlands are considered a sensitive resource under the California Oak Woodlands Conservation Act, and Amador County General Plan, and thus impacts to this community may be afforded consideration under CEQA.

**Interior live oak woodland (*Quercus wislizeni* Forest Alliance, G4, S4).** The Project Area contains approximately 4.46 acres of interior live oak woodland. Interior live oak woodland is known from the Northern to Southern California Coast and Coast Ranges (in drier, hotter sections within coastal areas), Klamath Mountains, Great Valley, Sierra Nevada Foothills and Southern California Mountains and Valleys, from Siskiyou County south to San Diego County. This vegetation community is typically located on upland slopes, valley bottoms, and terraces. Soils are shallow and moderately to excessively drained (CNPS 2019a).

Interior live oak woodland in the Project Area is mapped according to CNPS (2019a) as having conspicuous interior live oak greater than 50 percent relative cover, and greater than 15 percent relative cover in the tree canopy. Interior live oak woodland within the Project Area is limited to one, discrete stand on flat ground in the southwest corner of the Project Area. The overstory is dominated by dense, nearly contiguous canopy of interior live oak (*Q. wislizeni*). Due to the enclosed canopy, the understory is typically sparsely vegetated. Observed understory species within this community include poison oak, dogtail grass, Italian thistle, and purple false brome (*Brachypodium distachyon*). Interior live oak woodland has a sensitivity ranking of G4, S4 indicating that it is apparently secure both globally and in California, and is thus not considered a sensitive community. However, oak woodlands are considered a sensitive resource under the California Oak Woodlands Conservation Act, and Amador County General Plan, and thus impacts to this community may be afforded consideration under CEQA.

## **5.2 Special-Status Species**

### **5.2.1 Special-Status Plants**

Based upon a review of the resources and databases listed in Section 4.2.1 for the Goose Creek, Clay, Sloughouse, Carbondale, Irish Hill, Lone, Wallace, Clements, and Lockeford 7.5-minute USGS quadrangles, it was determined that 19 special-status plant species have been documented near the Project Area and special-status plant species documented from within 5 miles of the site are shown in Appendix A - Figure 4. Of the 19 special-status species known in the region, nine species were determined to have a moderate or high potential to occur within the Project Area (Appendix C). The remaining species documented to occur in the vicinity of the Project Area are unlikely or have no potential to occur due to one or more of the following factors:



- The previously developed and disturbed nature of the site has diminished local habitat availability for special-status plant species, and likely precludes the species from persisting in the Project Area;
- Vegetation communities commonly associated with the special-status species (e.g. chaparral, lower montane coniferous forest) are absent from the Project Area;
- Specific edaphic characteristics, such as lone formation soils, or serpentine-derived soils are absent from the Project Area;
- The Project Area is well below the documented elevation range of the species.

Protocol-level rare plant surveys were conducted in the Project Area on April 17, May 14, 15 and 16, and July 2, 2019. The surveys followed the protocol for rare plant surveys described by CNPS and the CDFW). The plant surveys were floristic in nature with all observed species recorded and included as a species list provided in Appendix A. No special-status plants were observed within the Project Area, and special-status plant species are presumed absent from the Project Area. All special-status plant species that were initially determined to have either a moderate or high potential to occur in the Project Area are described in detail below.

Special-status plant species with a moderate or high potential to occur in the Project Area:

**Henderson’s bentgrass (*Agrostis hendersonii*). CRPR 3. Not Present (initially Assessed: Moderate Potential).** Henderson’s bentgrass is an annual graminoid in the grass family (Poaceae) that blooms from April to June. It typically occurs in mesic areas or depressions in valley and foothill grassland and vernal pool habitat at elevations ranging from 225 to 995 feet (CNPS 2019, CDFW 2019). This species is a facultative wet (FACW) wetland plant (Lichvar 2012), and is restricted to vernal pool habitat (VPI) (Keeler-Wolf et al. 1998). Observed associated species include capitate rush (*Juncus capitatus*), toad rush (*J. bufonius*), Red Bluff rush (*J. leiospermus* var. *leiospermus*), slender Orcutt grass (*Orcuttia tenuis*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), common hedge hyssop, toothed calicoflower (*Downingia cuspidata*), stipitate popcornflower, and watershield (*Brasenia schreberi*) (CDFW 2019).

Henderson’s bentgrass is known from 19 USGS 7.5-minute quadrangles in Butte, Calaveras, Merced, Napa, Shasta, Tehama, and Tuolumne counties (CNPS 2019b). There is one CNDDDB (CDFW 2019) record within the greater vicinity of the Project Area, no California Consortium of Herbaria (CCH; 2019) records from Amador County, and two CCH (2019) records from Calaveras County. Henderson’s bentgrass was initially assessed as having a moderate potential to occur in the Project Area due to the presence of seasonal wetland depression and vernal pool habitat, suitable seasonal hydrology, and several associated species. This species was not observed during the protocol-level rare plant surveys, and is presumed absent.

**Brassy bryum (*Bryum chryseum*), CRPR 4.2. Not Present (initially Assessed: Moderate Potential).** Brassy bryum is a shiny golden yellow to yellow-green moss that occurs on exposed soil or outcrops in openings in chaparral, cismontane woodland, and valley and foothill grassland in Amador, Butte, Fresno, Madera, and Mendocino Counties, and Mexico; Central America, South America (Bolivia, Chile, Colombia, Peru). Elevation ranges from 160 to 1970 feet (50 to 600 meters) (CNPS 2019). Plants are gregarious or in dense mats, and are shiny golden yellow to yellow-green, rarely pale green (FNA 2019).

Brassy bryum was originally assessed as having a moderate potential to occur in the Project Area due to the presence of rocky outcrops in cismontane woodland. However, this species was not observed during the protocol-level rare plant surveys, and is presumed absent.

**Dwarf Downingia (*Downingia pusilla*), CRPR 2B.2. Not Present (initially Assessed: Moderate Potential).** Dwarf Downingia is annual forb in the harebell family (Campanulaceae) that blooms from March to May. It typically occurs on slightly acidic clay to clay loam mesic areas on the edge of pools and lakes in valley and foothill grassland and vernal pool habitat at elevations ranging from 3 to 1450 feet (1 to 440 meters) (CDFW 2019, CNPS 2019b, CSRL 2019). This species is an obligate (OBL) wetland plant (Lichvar et al. 2016), and is regularly known from vernal pool habitat, but may occur in other wetland habitat types (VPA) (Keeler-Wolf et al. 1998). Observed associated species include maroon spot calico flower (*Downingia concolor*), California goldfields (*Lasthenia californica*), California oat grass (*Danthonia californica*), semaphore grass (*Pleuropogon californicus*), annual hairgrass (*Deschampsia danthonioides*), barleys (*Hordeum* spp.), Italian rye grass, rattlesnake grasses (*Briza maxima*, *B. minor*), vetches (*Vicia* spp.), and docks (*Rumex crispus*, *R. pulcher*) (CDFW 2019).

Dwarf downingia is known from 42 USGS 7.5-minute quadrangles in Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties, and is known from the continent of South America (CNPS 2019b). There are two CNDDDB (CDFW 2019) records within the greater vicinity of the Project Area, no CCH (2019) records from Amador County, and five CCH (2019) records from Sacramento County. The nearest documented occurrence is from April 2013 at The Nature Conservancy's Howard Ranch property within the Cosumnes River Preserve, approximately 6 miles southwest of the Project Area (CDFW 2019). Dwarf Downingia was initially assessed as having moderate potential to occur in the Project Area due to the presence of seasonal wetland and vernal pool habitat, suitable seasonal hydrology, and several associated species. This species was not observed during the protocol-level rare plant surveys, and is presumed absent.

**Hoover's calycadenia (*Calycadenia hooveri*), CRPR 1B.3. Not Present (initially Assessed: High Potential).** Hoover's calycadenia is an annual forb in sunflower family (Asteraceae) that blooms from June to September. It typically occurs on rocky exposed places in oak savanna, and valley and foothill grassland habitat at elevations ranging from 210 to 985 feet (Jepson eFlora 2019, CDFW 2019, CNPS 2019). Observed associated species include nodding needlegrass (*Stipa cernua*), common catchfly (*Silene gallica*), bird's eyes (*Gilia tricolor*), Shasta popcornflower (*Plagiobothrys shastensis*), narrow tarplant and various brome grasses (*Bromus* spp.) (CDFW 2019).

Hoover's calycadenia is known from 13 USGS 7.5-minute quadrangles in Calaveras, Madera, Merced, Mariposa, and Stanislaus counties (CNPS 2019). There are no documented occurrences from Amador County; however, the Calaveras County occurrences are from Camanche Reservoir approximately 11 miles south of the Project Area. Hoover's calycadenia was originally assessed as having a high potential to occur in the Project Area due to the presence of rocky outcrops within blue oak woodland and grassland habitat. This species was observed at a documented reference site along Camanche Parkway south, Calaveras County, on July 1, 2019, but was not observed in the Project Area during July 2, 2019 protocol-level rare plant survey, and is presumed absent.

**Tuolumne button-celery (*Eryngium pinnatisectum*), CRPR 1B.2. Not Present (initially Assessed: High Potential).** Tuolumne button celery is an annual forb in the carrot family (Apiaceae) that blooms from May to August. It typically occurs on alluvial clay loams to sandy loam mesic areas on the edge of pools, lakes, and streams in valley and foothill grasslands and vernal pool habitat at elevations ranging from 70 to 915 feet (20 to 280 meters) (CDFW 2019, CNPS 2019b). This species is an obligate (OBL) wetland plant (Lichvar et al. 2016), and is regularly known from vernal pool habitat, but may occur in other wetland habitat types (VPA)

(Keeler-Wolf et al. 1998). Observed associated species include (*Ranunculus muricatus*), Italian rye grass, Great Valley button celery (*Eryngium castrense*), Howell's quillwort (*Isoetes howellii*), bracted popcorn flower (*Plagiobothrys bracteatus*), rabbitsfoot grass (*Polypogon monspeliensis*), Muehlenberg's centaury (*Zeltnera muehlenbergii*), Common microcalis (*Cicendia quadrangularis*), Hyssop loosestrife (*Lythrum hyssopifolia*), hairy checkerbloom (*Sidalcea hirsuta*), and needle leaved navarretia (*Navarretia intertexta*) (CDFW 2019).

Tuolumne button-celery is known from 14 USGS 7.5-minute quadrangles in Amador, Calaveras, Sacramento, Sonoma, and Tuolumne counties (CNPS 2019b). There are six CNDDDB (CDFW 2019) records within the greater vicinity of the Project Area, nine CCH (2019) records from Amador County, nine CCH (2019) records from Calaveras County, and two CCH (2019) records from Sacramento County. The nearest documented occurrence is from May 1996 near the intersection of Dave Brubeck Road, and Jackson Valley Road, approximately 3.5 miles south-southwest of the Project Area (CDFW 2019). Tuolumne button celery was initially assessed as having a high potential to occur in the Project Area due to the presence of seasonal wetland and vernal pool habitat, suitable seasonal hydrology, several associated species, and proximity to two documented occurrences of the species within less than 5 miles. However, this species was not observed during protocol-level rare plant surveys conducted during the documented bloom period and is presumed absent.

**Boggs Lake hedge hyssop (*Gratiola heterosepala*). State Endangered, CRPR 1B.2. Not Present (initially Assessed: Moderate Potential).** Boggs Lake hedge hyssop is an annual forb in the plantain family (Plantaginaceae) that blooms from April to August. It typically occurs on clay soils in pools, depressions, and lake margins within freshwater marsh and swamp, and vernal pool habitat at elevations ranging from 30 to 7720 feet (CDFW 2019, CNPS 2019b). Barbour et al. (2007) report Boggs Lake hedge hyssop from numerous vernal pool vegetation associations. This species is an obligate wetland plant (Lichvar et al. 2016), and is restricted to vernal pool habitat (Keeler-Wolf et al. 1998). Observed associated species include coyote thistle, stipitate popcornflower, horned calicoflower (*Downingia ornatissima*), dwarf Downingia, bristled Downingia (*D. bicornuta*), longstalk water-starwort (*Callitriche longipedunculata*), whitehead navarretia (*Navarretia leucocephala*), Fremont goldfields, and common hedge hyssop (CDFW 2019).

Boggs Lake hedge hyssop is known from 51 USGS 7.5-minute quadrangles in Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama counties (CNPS 2019b). There are eight CNDDDB (CDFW 2019) records within the greater vicinity of the Project Area, no CCH (2019) records from Amador County, and five CCH (2019) records from Sacramento County. The nearest documented occurrence is from May 1990 on a private ranch, approximately 7 miles south-southwest of the Project Area (CDFW 2019). Boggs Lake hedge hyssop was originally assessed as having a moderate potential to occur in the Project Area due to the presence of seasonal wetland and vernal pool habitat, suitable seasonal hydrology, and several associated species. However, this species was not observed during protocol-level rare plant surveys and is presumed absent.

**Legenere (*Legenere limosa*). CRPR 1B.1. Not Present (initially Assessed: Moderate Potential).** Legenere is annual forb in the harebell family (Campanulaceae) that blooms from April to June. It typically occurs in the lower portions of vernal pool habitat at elevations ranging from 0 to 2890 feet (0 to 880 meters) (CDFW 2019, CNPS 2019b). This species is an obligate (OBL) wetland plant (Lichvar et al. 2016) and is restricted to vernal pool habitat (Keeler-Wolf et al. 1998). Observed associated species include needle spikerush (*Eleocharis acicularis*), water

chickweed (*Montia fontana*), goldfields (*Lasthenia* spp.), meadowfoams (*Limnanthes* ssp.), and non-native annual grasses (CDFW 2019).

Legenere is known from 33 USGS 7.5-minute quadrangles in Alameda, Lake, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, and Yuba Counties (CNPS 2013). There are 21 CNDDDB (CDFW 2019) records in the greater vicinity of the Project Area, no CCH (2019) records from Amador County, two CCH (2019) records from Placer County, and five CCH (2019) records from Sacramento County. The nearest documented occurrence is from April 2000 at the TNC's Howard Ranch property within the Cosumnes River Preserve, approximately 4.8 miles southwest of the Project Area (CDFW 2019). Legenere was originally assessed as having a moderate potential to occur in the Project Area due to the presence of seasonal wetland and vernal pool habitat, suitable seasonal hydrology, and several associated species. However, this species was not observed during protocol-level rare plant surveys and is presumed absent.

**Pincushion navarretia (*Navarretia myersii* ssp. *myersii*). CRPR 1B.1. Not Present (Originally Assessed: High Potential).** Pincushion navarretia is an annual forb in the phlox family (Polemoniaceae) that blooms from April to May. It typically occurs on clay, often acidic, substrates in sinks, swales, depressions, and flats within vernal pool and valley and foothill grassland habitat at elevations ranging from 70 to 1080 feet (20 to 330 meters) (CDFW 2019, CNPS 2019b, Jepson eFlora 2019). This species is an obligate (OBL) wetland plant (Lichvar et al. 2016) and is restricted to vernal pool habitat (Keeler-Wolf et al. 1998). Barbour et al. (2007) report pincushion navarretia is commonly located in the Fremont goldfields-downingia vernal pool association (*Lasthenia fremontii* - *Downingia* Herbaceous Alliance). Observed associated species include common hedge hyssop, stipitate popcornflower, filarees (*Erodium botrys*, *E. cicutarium*), tricolor monkeyflower (*Mimulus tricolor*), woolly marbles (*Psilocarphus* spp.), capitate rush, Sacramento mesamint, coyote thistle, spiny-sepal coyote thistle (*E. spinosepalum*), dwarf brodiaea, Italian rye grass, Sacramento Orcutt grass, and annual hair grass (CDFW 2019).

Pincushion navarretia is known from nine USGS 7.5-minute quadrangles in Amador, Calaveras, Merced, Placer, and Sacramento counties (CNPS 2019b). There are seven CNDDDB (CDFW 2019) records within the greater vicinity of the Project Area one CCH (2019) record from Amador County, one CCH (2019) record from Calaveras County, and three CCH (2019) records from Sacramento County. The nearest documented occurrence is from April 2001 from the TNC's Howard Ranch property within the Cosumnes River Preserve, approximately 1 mile south of the Project Area (CDFW 2019). Pincushion navarretia was originally assessed as having a high potential to occur in the Project Area due to the presence of seasonal wetland and vernal pool habitat, suitable seasonal hydrology, several associated species, and proximate to numerous documented occurrences. This species was not observed during protocol-level rare plant surveys despite being observed on May 15, 2019 at a documented reference site along Twin Cities Road, approximately 1.3 miles northwest of the Project Area. This species is presumed absent.

**Sanford's arrowhead (*Sagittaria sanfordii*). CNPS Rank 1B.2. Not Present (initially Assessed: Moderate Potential).** Sanford's arrowhead is an aquatic rhizomatous perennial forb in the water-plantain family (Alismataceae) that blooms from May to October. It typically occurs in standing or slow-moving freshwater ponds, lakes, marshes, and ditches in marsh and swamp habitat at elevations ranging from 0 to 2130 feet (0 to 650 feet) (CDFW 2019, CNPS 2019). This species is an obligate wetland plant (Lichvar et al. 2016) and is known from vernal pools and other wetlands in one region, but not vernal pools in other regions (Keeler-Wolf et al. 1998). Observed associated species include fringed willowherb (*Epilobium ciliatum*), spikerush, floating primrose (*Ludwigia peploides*), barnyard grass (*Echinochloa crus-galli*), broadleaf cattail (*Typha latifolia*),

northern water plantain (*Alisma triviale*), hardstem tule (*Schoenoplectus acutus*), spotted lady's-thumb (*Persicaria maculosa*), dallis grass (*Paspalum dilatatum*), Johnson grass (*Sorghum halepense*), and tall flatsedge (*Cyperus eragrostis*) (CDFW 2019).

Sanford's arrowhead is known from 44 USGS 7.5-minute quadrangles in Butte, Del Norte, El Dorado, Fresno, Mariposa, Merced, Orange, Placer, Sacramento, San Bernardino, Shasta, San Joaquin, Solano, Tehama, and Ventura counties (CNPS 2019). There are seven CNDDDB (CDFW 2019) records within the greater vicinity of the Project Area, no CCH (2019) records from Amador County, and seven CCH (2019) records from Sacramento County. Sanford's arrowhead was originally assessed as having a moderate potential to occur in the Project Area due to the presence of potentially suitable shallow freshwater habitat (detention basins) which could support this species. However, this species was not observed during the site visits conducted during the documented bloom period of the species. This species is presumed absent.

### 5.2.2 Special-Status Wildlife

Based upon a review of the resources and databases listed in Section 4.2.1, it was determined that 33 special-status wildlife species have been documented within the Lone, Goose Creek, Irish Hill, Folsom SE, Latrobe, Fiddletown, Amador City, Sloughouse, Carbondale, Clay, Jackson, Lockeford, Clements, Wallace, and Valley Springs USGS 7.5-minute quadrangles. Appendix C summarizes the potential for each of these species to occur in the Project Area. Special-status wildlife species documented in CNDDDB within a 5-mile radius of the Project Area are depicted in Appendix A - Figure 5.

Of the 33 special-status species known from the region, 14 species were determined to have a moderate or high potential to occur within the Project Area (Appendix C). The remaining species documented to occur in the vicinity of the Project Area are unlikely or have no potential to occur due to one or more of the following factors:

- The Project Area is outside of the documented or historical range of the species;
- The Project Area lacks suitable perennial aquatic habitat (e.g., rivers and streams);
- The Project Area is outside of the distribution range for known occurrences.

While the aforementioned factors contribute to the absence of many special-status wildlife species from the Project Area, the following species were determined to have a moderate or high potential to occur.

#### Special-status Wildlife Species with High Potential or Moderate Potential to Occur in the Project Area:

**White-tailed kite (*Elanus leucurus*), CDFW Fully Protected Species. High Potential.** White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

The Project Area contains trees of suitable size for nesting as well as nearby foraging habitat. Kites are documented to occur in the region, and have been observed routinely foraging and nesting in and around nearby natural and artificial water bodies (CDFW 2019, eBird 2019).

Although this species was not observed during the site assessment, white-tailed kite has a high potential to nest and occasionally forage within the Project Area.

**Golden eagle (*Aquila chrysaetos*), Federal Eagle Protection Act, CDFW Fully Protected Species. Moderate Potential.** Golden eagle is a large raptor that occurs in open and semi-open areas from sea level to high elevation. Typical occupied habitats include grasslands, shrublands, deserts, woodlands, and coniferous forests. Breeding activity occurs broadly from January through August, and in California is usually initiated from January to March. The large stick nests of this species are reused across years and may be maintained throughout the year. Nests are most often placed on the ledges of steep cliffs, but nesting also occurs in trees and on tall manmade structures (e.g., utility towers) (Kochert et al. 2002). Golden eagles forage over wide areas, feeding primarily on medium-sized mammals (e.g., ground squirrels and rabbits), large birds, and carrion.

The Project Area itself provides suitable foraging habitat for golden eagles. Though portions of the site are active quarry, much of it remains as undisturbed grassland that could support prey species. No nests were observed during the WRA site visit. However, there are some trees that may be suitable to support golden eagle nesting in and adjacent to the Project Area. Areas surrounding the Project Area have foraging habitat that is typically favored by this species, specifically open expanses of foothills with contiguous grassland interspersed with woodland and rocky outcrops. There is a record for a golden eagle nest approximately 1.25 miles to the west of the Project Area, though this record is from 1992 (CDFW 2019), and no eagles were observed by WRA biologists during the site assessment. Because some potential nesting habitat exists in the Project Area and suitable foraging habitat is present, golden eagle has a moderate potential to occur and possibly nest on or immediately adjacent to the site.

**Burrowing owl (*Athene cunicularia*). CDFW Species of Special Concern. Moderate Potential.** Burrowing owl occurs as a year-round resident and winter visitor in much of California's lowlands, inhabiting open areas with sparse or non-existent tree or shrub canopies. Typical habitat is annual or perennial grassland, although human-modified areas such as agricultural lands and airports are also used (Poulin et al. 1993). This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California is typically found in close association with California ground squirrels (*Spermophilus beecheyi*). Manmade substrates such as pipes or debris piles may also be occupied in place of burrows. Prey consists of insects and small vertebrates. Breeding typically takes place from March to July.

Ground squirrel activity is relatively limited on the Project Area, and few burrows of suitable size were identified during the 2019 site visits. However, rock outcroppings are prevalent across the site within non-native annual grassland areas that could provide surrogate burrows structures that could be used as refugia by burrowing owl, particularly wintering individuals. Although no burrowing owls were observed during the site assessment, there are documented occurrences in the CNDDDB 2.6 miles away (CDFW 2019). Given the proximity of documented occurrences and presence of potential burrow surrogates that may support individuals of this species, burrowing owl has a moderate potential to use the Project Area as either wintering or breeding habitat.

**Swainson's hawk (*Buteo swainsoni*). State Threatened. High Potential.** Swainson's hawk is a summer resident and migrant in California's Central Valley and scattered portions of the southern California interior. Nests are constructed of sticks and placed in trees located in otherwise largely open areas. Areas typically used for nesting include the edge of narrow bands of riparian vegetation, isolated patches of oak woodland, lone trees, and also planted and natural

trees associated with roads, farmyards and sometimes adjacent residential areas. Foraging occurs in open habitats, including grasslands, open woodlands, and agricultural areas. While breeding, adults feed primarily on rodents (and other vertebrates); for the remainder of the year, large insects (e.g., grasshoppers, dragonflies) comprise most of the diet. In many areas, Swainson's hawks have adapted to foraging primarily in and around agricultural plots (particularly alfalfa, wheat and row crops), as prey is both numerous and conspicuous at harvest and/or during flooding or burning (Bechard et al. 2010).

The Project Area contains many trees of suitable size for nesting as well as extensive swaths of foraging habitat within non-native annual grasslands and woodlands. Although no Swainson's hawks were observed during the site assessment, a nest location is documented less than 1 mile east of the Project Area (Vollmar 2011). Because suitable nesting habitat occurs in the Project Area and the Project Area is located near documented nest occurrences, Swainson's hawk has a high potential to nest within the Project Area.

**Grasshopper sparrow (*Ammodramus savannarum*) CDFW Species of Special Concern. High Potential.** Grasshopper sparrow is a summer resident in California, wintering in Mexico and Central America. This species occurs in open grassland and prairie-like habitats with short-to moderate-height vegetation, and often scattered shrubs (Vickery 1996). Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise most of the diet.

Large portions of the Project Area provide suitable nesting habitat for grasshopper sparrows in open non-native annual grassland areas adjacent to oak woodlands or buckbrush chapparal. Though this species is not likely to be observed near active quarry areas, and grasshopper sparrows were not observed during the site assessment, the presence of suitable foraging and nesting habitat in the Project Area suggests that grasshopper sparrow has a high potential to occur.

**Tricolored blackbird (*Agelaius tricolor*). State Threatened. High Potential.** Tricolored blackbird is a locally common resident in the Central Valley and along coastal California. Most tricolored blackbirds reside in the Central Valley March through August, then moving into the Sacramento-San Joaquin Delta and east to Merced County and coastal locations during winter (Meese et al. 2014). This species breeds adjacent to fresh water, preferring emergent wetlands with tall, dense cattails or tules, thickets of willow or blackberry, and/or tall herbs. Flooded agricultural fields with dense vegetation are also used (Shuford and Gardali 2008). This species is highly colonial; nesting habitat must be large enough to support a minimum of 30 pairs, and colonies are commonly substantially larger (up to thousands of pairs). The tricolored blackbird often intermingles with other blackbird species during the non-breeding season. Individuals typically forage up to 5.6 miles (9 kilometers) from their colonies although in most cases only a small part of the area within this range provides suitable foraging (Hamilton and Meese 2006).

The detention basins within the Project Area support patches of emergent vegetation that could provide nesting habitat for tricolored blackbird. Adequate foraging habitat for the species is present onsite and nearby. Numerous documented occurrences of tricolored blackbird nesting colonies are known from nearby detention basins similar to those that occur within the Project Area (CDFW 2019), including an occurrence approximately 1 mile east of the Project Area. Tricolored blackbird therefore has a high potential to nest and/or forage in the Project Area.

**Loggerhead shrike (*Lanius ludovicianus*), CDFW Species of Special Concern. High Potential.** Loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Nests in trees and large shrubs; nests are usually placed three to ten feet off the ground (Shuford and Gardali 2008).

Suitable habitat for this species is present across the Project Area, chiefly in non-native annual grassland or oak woodland areas where suitable nest trees are present, and the understory is sufficiently open for foraging. Multiple occurrences have been documented of this non-migratory species within 5 miles of the Project Area including one occurrence less than 1 mile to the east in 2018 (eBird 2019). Due to the presence of nest trees amidst open foraging areas and prevalence of nearby occurrences, loggerhead shrike has a high potential to occur in the Project Area.

**Pallid bat (*Antrozous pallidus*), CDFW Species of Special Concern, WBWG High Priority. Moderate Potential.** Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. They are most abundant in the arid Sonoran life zones below 6,000 feet, but have been found up to 10,000 feet in the Sierra Nevada. Pallid bats often roost in colonies of between 20 and several hundred individuals. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias, and within bole cavities in oak trees. They have also been reported roosting in stacks of burlap sacks and stone piles. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2019).

The Project Area is within the known range of this species and contains trees and rock outcrops with sufficient height and structure to provide roost sites suitable for pallid bats. Mature trees and snags within the Project Area are also suitable roost sites. Furthermore anthropogenic structures within and nearby the Project Area are also likely to support roosts. The Project Area also has an ideal climate and supports temperatures conducive to maternity roosts. The detention basins in Project Area provide drinking water and the grassland mosaic is suitable foraging for this species. Pallid bats therefore have a moderate potential to occur within the Project Area.

**Townsend's big-eared bat, (*Corynorhinus townsendii townsendii*), CDFW Species of Special Concern, WBWG High Priority. High Potential.** This species ranges throughout western North America from British Columbia to central Mexico. Its local distribution is strongly associated with the presence of caves, but roosting also occurs within man-made structures including mines and buildings. While many bats species wedge themselves into tight cracks and crevices, big-eared bats hang from walls and ceilings in the open. Males roost singly during the spring and summer months while females aggregate in the spring at maternity roosts to give birth. Females roost with their young until late summer or early fall, until the young become independent, flying and foraging on their own. In central and southern California, hibernation roosts tend to be made up of small aggregations of individuals (Pierson and Rainey 1998). Foraging typically occurs along edge habitats near streams and wooded areas, where moths are the primary prey (WBWG 2019).



The Project Area contains trees and rock structures with cavities of sufficient size to provide roosting structure for this species. Manmade structures, including abandoned shafts and adits in the region, are known to support roosts of this species. Detention basins in Project Area provide an adequate source of drinking water and foraging habitat for bats. Therefore, due to the known occurrences in the area, and presence of suitable habitat, this species has a moderate potential to occur within the Project Area.

**Western pond turtle (*Actinemys marmorata*), CDFW Species of Special Concern. Moderate Potential.** Western pond turtle (WPT) is the only native freshwater turtle in California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. Pacific pond turtle inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. Pond turtle also occupies fabricated habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. Warm, shallow, nutrient-rich waters are ideal as they support WPT prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, WPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, WPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuging and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

The Project Area contains numerous ponds and is immediately adjacent to Loch Lake which could support a population of WPT, and are documented from similar aquatic features in the lone region. Moreover, the upland soils are suitably friable to serve as nesting habitat for WPT. Some of the ponds also support populations of non-native bullfrogs which are known to suppress WPT where they co-occur. Since suitable aquatic and upland habitat for WPT is present in the Project Area and immediate surrounds, and WPT have been documented to occur less than 2 miles from the Project Area (CDFW 2019), this species has a moderate potential to occur.

**Western spadefoot (*Spea hammondi*), CDFW Species of Special Concern. Moderate Potential.** Western spadefoot ranges throughout the Central Valley and adjacent foothills. Suitable habitat consists of open areas with sandy or gravelly soils, and includes grassland, scrubland, woodland, washes, and alluvial fans. This species spends most of the year underground in burrows and similar refugia, and often constructs its own burrows. Breeding occurs in shallow, temporary pools formed by heavy winter rains; at least four weeks of continuous inundation are required for successful larval metamorphosis.

Vernal pool habitats are present on the Project Area that could constitute breeding habitat for this species. Vernal pools are additionally adjacent to grassland habitats with observed pocket gopher (*Thomomys bottae*) burrows that could be used as upland habitat. Temporal drainages across the Project Area with sandy/gravelly soils could provide additional upland habitat or rainy season dispersal habitat. The species is documented in the CNDDDB within 3.5 miles of the Project Area. Given the presence of potentially suitable breeding and upland habitat, western spadefoot has moderate potential to occur on the Project Area.

**Vernal pool fairy shrimp (*Branchinecta lynchi*), Federal Threatened Species. Moderate Potential.** Vernal pool fairy shrimp (VPFS) ranges in size from 10.9 to 25.0 mm (Eng et al. 1990) and has an elongate body, large stalked compound eyes, no carapace, and 11 pairs of swimming

legs. VPFS is found from Jackson County near Medford, Oregon, throughout the Central Valley, and west to the central Coast Ranges. Isolated southern populations occur on the Santa Rosa Plateau and near Rancho California in Riverside County (Eng et al. 1990, Eriksen and Belk 1999). VPFS occurs mostly in vernal pools, however it is also found in a variety of both natural and artificial wetland habitats, such as alkali pools, ephemeral drainages, stock ponds, roadside ditches, vernal swales, and rock outcrop pools (Helm 1997). Occupied wetlands are typically small (ranging from 0.1 to 0.05 acres in size), and pond for a relatively short duration (3-4 weeks) (Eriksen and Belk 1999).

Vernal pool habitats are present on the Project Area, which could potentially provide habitat for vernal pool branchiopods. Vernal pools on the site have no hydrologic connectivity to other vernal pool habitats that would serve as a direct source of colonization by listed crustaceans. However, this does not necessarily preclude the presence of vernal pool branchiopods, as cysts can be translocated by other mobile animals (e.g. birds, large mammals). The nearest documented VPFS occurrence is more than 3 miles northwest of the Project Area (CDFW 2019). In 2010, a survey for listed large branchiopods was conducted within suitable habitat in the vicinity of the Project Area and failed to detect VPFS (Vollmar 2011). However, vernal pools on the current Project Area were not directly surveyed and thus cannot be ruled out for VPFS presence. Due to the presence of vernal pool habitat on the Project Area that has not been directly surveyed for listed vernal pool branchiopod species, VPFS has moderate potential to occur.

**Vernal pool tadpole shrimp (*Lepidurus packardii*), Federal Endangered. Moderate Potential.** Vernal Pool Tadpole Shrimp (VPTS) has compound eyes, a large shield-like carapace (shell) that covers most of the body, a pair of long cercopods (appendages) at the end of the last abdominal segment and approximately 35 pairs of legs (USFWS 2007). The VPTS is a California Central Valley endemic species, with the majority of the populations occurring in the Sacramento Valley. This species has also been reported from the Sacramento River Delta to the east side of San Francisco Bay, and from a few scattered localities in the San Joaquin Valley from San Joaquin County to Madera County. Suitable habitats vary considerably, including vernal pools, clay flats, alkaline pools, ephemeral stock tanks, roadside ditches, and road ruts (Rogers 2001). Vernal pools may range in size from small, clear, and well-vegetated to highly turbid, alkali scald pools to large winter lakes (Rogers 2001). They may be seasonal or ephemeral, and may exhibit a wide range of salinity levels. However, VPTS survival requires that water bodies be deeper than 5 inches, pond for 40 days or more, and not experience wide daily temperature fluctuations (Rogers 2001). VPTS cysts (resting eggs) also must have the opportunity to dry out before they can hatch. VPTS are omnivorous. They typically forage by digging through sediments at the bottom of their habitats, feeding on plants and metazoans.

Vernal pool habitats are present on the Project Area, which could potentially provide habitat for vernal pool branchiopods. In 2010, surveys for listed large branchiopods were conducted in the vicinity of the Project Area, in areas with suitable habitat and failed to detect VPTS (Vollmar 2011). However, vernal pools identified on the current Project Area were not included in those surveys. The nearest VPTS occurrence documented in the CNDDDB is >3.5 miles away from the nearest suitable vernal pool habitat within the Project Area, which is beyond typical dispersal distances for branchiopod species. However, cysts of vernal pool branchiopods may be transported via attachment to larger organisms (e.g. birds or large mammals) and thus provide seed populations for previously unoccupied habitats. Due to the presence of vernal pool habitats on the Project Area, the presence of vernal pool branchiopods cannot be ruled out. VPTS consequently has moderate potential to occur.

**California tiger salamander (*Ambystoma californiense*), Federal Threatened, State Threatened. Moderate Potential.** California Tiger Salamander (CTS) is restricted to grasslands and low-elevation foothill regions in California (generally under 1500 feet) where it uses seasonal aquatic habitats for breeding. The salamanders breed in natural ephemeral pools, or ponds that mimic ephemeral pools (stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. California tiger salamanders spend most of their time in the grasslands surrounding breeding pools. They survive hot, dry summers by living underground in burrows (such as those created by ground squirrels and other mammals and deep cracks or holes in the ground) where the soil atmosphere remains near the water saturation point. During wet periods, the salamanders may emerge from refugia and feed in the surrounding grasslands.

The nearest documented occurrences in the CNDDDB for CTS are 1.6 miles to the north and 1.5 miles to the south (CDFW 2019). Habitat between these occurrences lacks complete barriers that would prevent CTS from traversing between these locations, including the Project Area. No documented breeding occurrences exist within 1.25 miles (considered to be the migratory limit for the species) of the Project Area. Upland habitat within the Project Area contains fossorial mammal burrows (pocket gopher) that are adequate in size and structure to provide refugia to CTS. The detention basins within the Project Area are of low quality in terms of their capacity to support reproduction because of the prevalence of introduced predators, including fish and bullfrogs and therefore are not considered viable aquatic habitat for CTS.

Aquatic surveys were performed on-site by Vollmar (2011) in 2009 and 2010 following USFWS protocols. These surveys were negative for CTS.

The Vollmar surveys included sampling of vernal pools delineated on the northwest portion of the Project Area. However, detention basins that appear to perennially hold water were installed on the southwest side of the active quarry area after these surveys were conducted. Though bullfrogs were observed in these detention basins during the 2019 site visit, the ponds could provide potential habitat for CTS. Given the prevalence of CTS in the area, the age of survey data on and around the Project Area, and the presence of potential breeding habitat on the Project Area that has not yet been surveyed, CTS have a moderate potential to occur within the Project Area.

The following species are unlikely to occur but are discussed here further because they are CESA and/or ESA listed and documented occurrences exist near the Project Area.

**California red-legged frog (*Rana draytonii*), Federal Threatened Species, CDFW Species of Special Concern. Unlikely.** California red-legged frog (CRLF) is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLF estivate (period of inactivity) during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds.

Detention basins located within the Project Area were observed to be populated with bullfrogs during the WRA site visits, and prior surveyors documented centrarchid fish (Vollmar 2011). These same surveys, conducted in 2009 and 2010, were also negative for the presence of CRLF individuals.

CRLF are extremely rare in the foothills and are absent from the central Valley (Thomson et al 2016). No documented occurrences for the species exist in the CNDDDB for Amador County,

except for a 1942 record that is more than 15 miles from the Project Area (CDFW 2019). Though there are aquatic features within the Project Area, the current infestation of non-native predators and lack of source populations in the area suggest that colonization of the Project Area is unlikely.

**Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*), Federal Threatened Species. Unlikely.** This beetle is found throughout the Central Valley in blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs, on which it is completely dependent for larval development, and to a lesser degree, adult feeding. Typical habitat is characterized as large stands of mature elderberry shrubs in riparian or floodplain areas.

Only one (1) blue elderberry shrub was detected during the site visits. The identified shrub was isolated in a tailings pile, and was of insufficient size (< 2 inches diameter at breast height) to support this species. Additionally, no signs of foraging by valley elderberry longhorn beetle were observed on the shrub. Because this species is dependent on this host plant, absence of suitably sized host plants resulted in a determination of unlikely to occur for the valley elderberry longhorn beetle.

**Bald eagle (*Haliaeetus leucocephalus*). State Endangered, CDFW Fully Protected Species. Unlikely.** Bald eagle occurs primarily as a winter visitor but also as a year-round (breeding) resident throughout most of California. Habitat is somewhat variable, but the species is usually strongly associated with larger bodies of water including lakes, reservoirs, major river systems, estuaries, and the ocean. Breeding occurs primarily in forested areas near water bodies; wintering habitat is more general, though water is usually present. The huge nests are typically built in the upper portions of large, live trees that provide dominant views of surrounding areas (Buehler 2000). Bald eagles are highly opportunistic foragers; fishes and waterfowl are usually favored, but a variety of live prey and carrion are consumed.

The Project Area does contain several waterbodies though they are small in size, lack fish of suitable size to provide a functional prey base, and the active nature of the mine is likely to discourage long-term occupation of the area. Moreover, the large conspicuous stick nests that bald eagles construct and use across years, were not observed within the Project Area during WRA's site surveys or surveys performed previously (Vollmar 2011). Bald eagles have been documented to nest within 5 miles of the Project Area in the CNDDDB, including as recently as 2015 (CDFW 2019), and observations close to the Project Area have been recorded as recently as 2018 (eBird 2019), however, this is due to the large, more suitable foraging and nesting habitat regionally, which is absent from the Project Area. Although bald eagles may occasionally fly over and potentially forage within the Project Area, they are unlikely to nest there.

## 6.0 SUMMARY OF PROPOSED PROJECT

SGI proposes to expand the existing footprint and depth of Lone Quarry to access additional rock reserves. This expansion requires an amended CUP and Reclamation Plan that allows for the expanded proposed mining area and additional stockpiling area(s) for the additional cap rock (the proposed project). The quarry will be expanded by approximately 130 acres and the depth will increase by 605 feet. The stockpile area will expand by approximately 87 acres and increase in height by approximately 44 feet (at its largest increase). No changes in the current rates of production or other operations are proposed. The expanded reserves could provide for an estimated 100 years of operation at current annual production rates.

The mine plan consists of expanding the quarry and stockpile areas and extending operations to 2175. This design will include expanding the quarry by approximately 130 acres to the northwest, north, and east, and deepening it an additional 605 feet. The quarry expansion will continue to be developed as described in Section 2.2 above. Before undisturbed surfaces are disturbed, vegetation will be removed in the immediate working areas and managed on-site (e.g., mulched for erosion control, stockpiled for blending with topsoil) or transported offsite (e.g., landfill/green waste facility, sold as product) depending on the type of vegetation removed and available uses. Overburden soil salvaged from the site will be handled and stored depending on current site needs. If areas for concurrent or final reclamation are available, then overburden soil will be placed on final surfaces within the quarry or cap rock stockpile area. Otherwise overburden soil will be stockpiled separately for future distribution within the quarry or cap rock stockpile. Overburden soil used in concurrent and final reclamation may be amended with silts and fines from silts ponds and stormwater facilities if necessary and available.

After the overburden soil is stripped and stockpiled, the cap rock (i.e., weathered rock material) will continue to be removed and stockpiled near the quarry. Cap rock will continue to be stockpiled next to the quarry for processing at the processing plant by a contract mining operator. The stockpile area will expand by approximately 87 acres and increase in height by approximately 44 feet at its largest increase, for a final elevation of up to 560 feet msl and an estimated 10.32 million cubic yards (or an increase in 10.12 million cubic yards). The stockpile will be set back from the quarry by a minimum of 25 feet. The proposed cap rock stockpile will include 2H:1V inter-bench slopes and 30-foot-wide benches every 50 vertical feet.

Mine reclamation is required by the Surface Mine and Reclamation Act (SMARA), which requires mines to be reclaimed to a usable condition that is readily adaptable for a productive alternative land use that creates no danger to public health or safety. A Reclamation Plan has been submitted as part of the application materials in compliance with SMARA regulations. The plan provides for a site that is suitable for grazing and open space. Final stockpile slopes will be graded to final design as the stockpiles are created. Regraded stockpile slopes will be covered subsequently with final cover soil and revegetated. Final cover soil is expected to consist of overburden soil. This phased grading and capping of the stockpile will help reduce erosion and sedimentation transport associated with the stockpile.

Ancillary surface disturbance will be graded and revegetated at the completion of mining activities. The revegetation plan will result in self-sustaining revegetation that supports open space and grazing land uses. The vegetation communities established will mature over time to be similar to surrounding natural areas. Revegetation success will be ensured through performance standards, which will be demonstrated by monitoring and measuring for species richness, density, and cover.

## **7.0 IMPACTS AND MITIGATION EVALUATION**

The purpose of this impact assessment is to evaluate the potential impacts of Project construction and operation on existing conditions for biological resources based on the significance thresholds and methodology discussed below in Section 7.1. This section is structured to specifically address each significance threshold for biological resources from CEQA Appendix G. Each section addresses a specific question posed by Appendix G.

Specific impacts and a discussion of avoidance, minimization and mitigation are discussed below. For each subsection, potential significant impacts are first identified and discussed. Then, the

approach for mitigation to compensate for those impacts is discussed. Finally, a significance conclusion is provided for each potential impact.

### **7.1 Analytical Methodology and Significance Threshold Criteria**

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

- a) Have a substantial adverse effect, either 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 Game or U.S. Fish and Wildlife Service;
- b) 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 Game or U.S. Fish and Wildlife Service;
- c) 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;
- d) 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 sites;
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a “substantial adverse effect” is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may not be considered significant if those impacts would not affect the resiliency of a local population.

### **7.2 Impacts and Mitigation Evaluation for Special-status Species**

This section analyzes the Project’s potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

- a) *Does the project have the potential to have a substantial adverse effect, either 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 Game or U.S. Fish and Wildlife Service?*

Potential impacts and mitigation for potentially significant impacts to special-status species are discussed below.

#### *7.1.1 Special-status Plant Species*

Protocol-level rare plant surveys were conducted in the Project Area on September 13 and 14, 2018, April 17, May 14, 15 and 16, and July 2, 2019. The surveys followed the protocol for rare plant surveys described by CNPS and the CDFW. The plant surveys were floristic in nature with all observed species recorded and included as a species list provided in Appendix A. No special-status plants were observed within the Project Area, and special-status plant species are presumed absent from the Project Area.

No special-status plant species occur within the Project Area, therefore impacts would be less than significant under CEQA.

#### *7.1.2 Special-status Wildlife Species*

A total of 33 special-status wildlife species have been documented from the vicinity of the Project Area. Of the 33 special-status species known from the region, 14 species were determined to have a moderate or high potential to occur within the Project Area. The following sections present recommendations to avoid or reduce impacts to these species.

##### *Western Pond Turtle*

**Potential Impact BIO-1:** Ground disturbance activities may result in injury or mortality of western pond turtle individuals present within the Project Area.

WPT is listed as a species of special concern by CDFW. Future activities within the Project Area may affect individuals of the species during dispersal through upland areas, or if individuals move into the Project Area in the future. Because the species is not listed as threatened or endangered, CDFW will not issue any permits for “take” of this species. However, the Project will result in impacts the aquatic features in the Project Area and their immediate surroundings, which may include suitable upland nesting sites. As such, there would be potential for impacts to WPT.

Potential impacts to WPT would be considered significant under CEQA, and mitigation or avoidance measures (e.g. pre-construction surveys) may be required to reduce impacts to less-than-significant levels.

##### **Mitigation Measure BIO-1:** *Western Pond Turtle*

A qualified biologist will conduct a preconstruction survey to determine if there are any turtles in the aquatic habitats that will be impacted by the Project, and to determine if there are any active nest sites in the proposed work areas. If a western pond turtle is identified in the work area, the turtle will be relocated to habitat that will remain unaffected by the Project. If an active nest found, a 50-foot buffer will be established around the nest to avoid impacts to the eggs or hatchlings. Ground disturbance within the buffer area will be delayed until the young leave the nest, or as otherwise directed by CDFW.

Implementation of this mitigation measure would reduce impacts to WPT to levels considered less than significant.

##### *Golden Eagle*

**Potential Impact BIO-2:** Project activities may result in disturbance of nesting eagles.

Bald and Golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-669c). This act protects eagles from being taken or disturbed. Take as defined under the Eagle Act is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect molest or disturb”. 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.

Project activities have the potential to impact nests if tree removal or ground disturbance is initiated during the breeding bird season (February 1 through August 31). Potential impacts include direct destruction of nests as well as indirect visual and acoustic disturbance to nesting birds from work activities in adjacent areas that has the potential to result in nest abandonment. Direct destruction of nests or indirect disturbance resulting in nest abandonment caused as a result of the Project is a potentially significant impact.

Potential project impacts to eagles would be considered significant under Bald and Golden Eagle Protection and CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-2:** *Golden Eagles*

To avoid take of golden eagles, a qualified biologist should conduct a protocol survey in accordance with the USFWS *Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations* (USFWS 2010). This survey protocol is intended to standardize procedures to inventory and monitor golden eagles within the direct and indirect impact areas of planned or ongoing projects where disturbance or lethal take from otherwise permitted human activities is possible.

If an active eagle nest is identified within the Project Area or within 1000 feet of the active quarry footprint, consultation with USFWS will likely be required. A minimum of a 660 foot buffer shall be established per the *National Bald Eagle Management Guidelines* (USFWS 2007). No disturbance shall occur within the buffer until the monitoring biologist has determined that the young have fledged and are independent of the nest.

Implementation of this mitigation measure would reduce impacts to Bald and Golden Eagles to levels considered less than significant.

*Burrowing Owl*

**Potential Impact BIO-3:** Project activities may result in impacts to western burrowing owl.

Burrowing owl is protected by CFGC and are a SSC. Ground squirrel activity is relatively limited on the Project Area, and few burrows of suitable size were identified during the 2019 site visits. However, rock outcroppings are prevalent across the site within non-native annual grassland areas that could provide burrows structures that could be used as refugia by burrowing owl,



particularly wintering individuals. Additionally, burrow surrogates (i.e. pipes, lumber) are periodically present in areas where construction or quarry equipment is stockpiled. Occupied burrow sites of both wintering and breeding burrowing owl are protected.

Potential project impacts to western burrowing owl would be considered significant under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-3: *Burrowing Owl***

A pre-construction survey will be required to determine whether any owls are present in or adjacent to the Project Area. Burrowing owl surveys should be conducted in accordance with the *CDFW Staff Report on Burrowing Owl Mitigation (2012)* protocols for take avoidance surveys. If burrowing owl is determined to be present, avoidance buffers of up to 500 feet may be instituted around occupied burrows. If avoidance is not feasible, consultation with CDFW may be required to develop an exclusion strategy for occupied and nearby suitable habitat. The restricted activities and setback distances will follow CDFW guidance provided in the 2012 Staff Report. No ground disturbance should occur within the buffer areas of the occupied burrows.

Implementation of this mitigation measure would reduce impacts to western burrowing owl to levels considered less than significant.

*Swainson's Hawk*

**Potential Impact BIO-4:** Project activities may result in impacts to nesting Swainson's hawk.

Swainson's hawk is listed as threatened species under CESA. The Project Area contains many trees of suitable size for nesting as well as extensive swaths of foraging habitat within non-native annual grasslands and woodlands. Potential impacts to this species from the proposed project include disturbance to nesting birds and the loss of foraging habitat.

Potential Project impacts to Swainson's hawk would be considered significant under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-4:**

To avoid impacts to nesting Swainson's hawks, protocol level surveys should be conducted within a 0.25 mile radius around the Project Area following the CDFW guidelines entitled: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000). These surveys will determine if Swainson's hawk is nesting within the Project Area prior to removal of potential nest trees. These surveys are phasic, are required to begin prior to the nesting period. Protocol surveys require up to 9 surveys to complete (CDFG 2000).

If an active nest is identified within 0.25 mile of the Project Area, protective buffers will be established and maintained until such time that the Swainson's hawks have completed their nesting cycle as determined by a qualified biologist. If the proposed Project could impact an active Swainson's hawk nest, an Incidental Take Permit would be required under Section 2081 of CFGC, and administered by the CDFW. The applicant will likely be required to prepare a *Swainson's Hawk Monitoring and Habitat Management Plan*. Removal of nest trees is typically

mitigated by replanting trees at a 3:1 ratio; and trees must be species which provide suitable nest structure such as oak trees.

Implementation of this mitigation measure would reduce impacts to Swainson's hawk to levels considered less than significant.

#### *Tricolored Blackbird*

**Potential Impact BIO-5:** Project activities may result in impacts to nesting tricolored blackbird.

The ponds within the Project Area support patches of emergent vegetation that could provide nesting habitat for tricolored blackbird. Project activities could generate audible, vibratory and/or visual disturbances that might indirectly result in nest abandonment. The disturbance to breeding birds sufficient to result in the abandonment of active nests would be significant impact under CEQA.

Potential Project impacts to tricolored blackbird would be considered significant under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

#### **Mitigation Measure BIO-5:** *Tricolored Blackbird*

Pre-construction surveys for avian species are recommended for Project activities that must occur during the nesting bird season (defined as March 1 through July 31). If active nests (containing eggs, chicks or young) are discovered during pre-construction surveys, a qualified biologist would establish a species-specific no-work buffer around the active nest. Project activities may be postponed until the conclusion of the nesting season, or the biologist may perform follow-up checks to determine whether the nest is still active.

If a nesting colony is observed within the Project Area during preconstruction nesting bird surveys and cannot be avoided by the Project, a 2081 Incidental Take Permit may be warranted, along with mitigation for impacts to loss of nesting habitat.

Implementation of this mitigation measure would reduce impacts to tricolored blackbird to levels considered less than significant.

#### *Special-Status and Other Nesting Bird Species*

**Potential Impact BIO-6:** Project activities may result in impacts to nesting special-status and other common bird species

The Project may impact white-tailed kite, a California fully protected species. In addition, the Project may impact nesting grasshopper sparrow and loggerhead shrike, which are SSCs, and a number of other avian species regulated under CFGC. Impacts to these species and their eggs, chicks and young could occur during the removal of vegetation or other ground-disturbing activities. These activities could result in the direct removal or destruction of active nests, as well as generate audible, vibratory and/or visual disturbances that might indirectly result in nest abandonment. The direct removal/destruction of active nests due to Project activities or disturbance to breeding birds sufficient to result in the abandonment of active nests is a significant impact under CEQA.

Potential Project impacts to nesting special-status and other common bird species would be considered significant under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-6: *Special-Status and Other Nesting Bird Species***

Pre-construction surveys for avian species are recommended for Project activities that must occur during the nesting bird season (defined as March 1 through July 31). If active nests (containing eggs, chicks or young) are discovered during pre-construction surveys, a qualified biologist would establish a species-specific no-work buffer around the active nest. Project activities may be postponed until the conclusion of the nesting season, or the biologist may perform follow-up checks to determine whether the nest is still active. A nesting bird management plan may be prudent to establish a programmatic approach to nest surveys, buffer size, duration, and may include other abatement or attenuation recommendations that might allow for size reductions in the exclusion buffers, or other such measures satisfactory to the lead agency to reduce the impacts to a less than significant level.

Implementation of this mitigation measure would reduce impacts to nesting birds to levels considered less than significant.

*Special-Status Bat Species and other Roosting Bats*

**Potential Impact BIO-7:** Project activities may result in impacts to special-status bat species.

The Project Area contains natural and man-made structures and trees that may provide roosting habitat for: Townsend's big-eared bat and pallid bat which are SSCs and a number of other avian species who's roosts are regulated under CFGC. Impacts to these species and their roost habitats could occur during the removal of trees, structures, or existing shafts or addits within the Project Area. These activities could result in the direct removal of a roost, including maternity roosts. Project activities may also create audible, vibratory and/or visual disturbances that results in roosting bats to abandon their roost site.

Activities that result in the direct removal of active roosts or disturbance to maternity roosting bats sufficient to result in the abandonment of the roost is a potentially significant impact under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-7: *Special-Status Bat Species and other Roosting Bats***

Work should be conducted September 1 through March 31 to the extent feasible, which is considered to be outside of the bat maternity season (and, if feasible, outside of the hibernation season (generally November – February). If Project activities must occur during these roosting windows, a bat roost assessments should be conducted by a qualified biologist prior to the onset of Project Activities. Surveys will determine if suitable roost habitat is present that will directly or indirectly affect an active roost.

If special-status bat species or maternity roosts are detected, additional avoidance or minimization measures should be implemented until the end of the maternity/hibernation roosting season. If this is not feasible, appropriate species- and roost-specific mitigation measures may need to be developed by a qualified bat biologist in consultation with CDFW.

Regardless of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats to escape.

Implementation of this mitigation measure would reduce impacts to special-status bat species to levels considered less than significant.

*California tiger salamander and western spadefoot*

**Potential Impact BIO-8:** Project activities may result in impacts to California tiger salamander and western spadefoot.

The Project Area contains potentially suitable breeding and upland habitat for CTS and western spadefoot. The following section will focus on typical measures associated with CTS, which would also be sufficient to mitigate Project impacts to western spadefoot.

Areas adjacent to the Project Area were surveyed for CTS in 2009 and 2010 (Vollmar 2011). These surveys were negative for all life stages of CTS. However, the surveys conducted by Vollmar did not meet the standard of the full protocol in order to establish absence and as of the writing of this report, those surveys are more than 10 years old. Although it is WRA's opinion that CTS are unlikely to occur, the proximity of documented extant occurrences nearby and in the absence recent protocol-level surveys, it is likely that the resource agencies (CDFW and USFWS) will assume that the species is present and require mitigation for impacts to CTS habitat that would be impacted by the Project.

The pond habitats within the Project Area may be an attractive nuisance for CTS in that the aquatic features may attract CTS without providing a suitable inundation period or conditions for successful breeding. In the absence of protocol-level survey results determining that CTS are absent, the Project would result in the assumed loss of 98.01 acres of upland habitat and 1.18 acres of aquatic habitats. Direct injury or mortality of individuals, creation of an attractive nuisance, and loss of habitat are considered a potentially significant impact under CEQA.

Activities that result in the impacts to CTS and western spadefoot are a potentially significant impact under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-8:** *California tiger salamander and western spadefoot* Protocol-level surveys shall be conducted by a biologist that holds a valid 10(a)(1)(A) recovery permit in accordance with the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS 2003), as approved by USFWS. Aquatic larval surveys will be conducted in the pond and detention basins within the Project Area. A second aquatic survey following spring, or a winter drift fence study will be performed to confirm absence of CTS and western spadefoot within the Project Area. If CTS and spadefoot are determined to be absent by way of protocol-level surveys, no additional mitigation would be required. It is assumed that protocol-level surveys for CTS would also detect western spadefoot, if present. Without surveys to confirm absence, it is likely that resource agencies (CDFW and USFWS) will assume that CTS is present, and incidental take permits would be required from the USFWS and CDFW, respectively, prior to any ground-breaking activities.

If CTS are either confirmed or assumed to be present, a 2081 Incidental Take Permit from CDFW would be required. Additionally, pending the outcome of the jurisdictional determination by the Corps as to WOTUS within the Project Area, a USFWS Biological Opinion under Section 7 of the ESA, a Section 10 Habitat Conservation Plan would be required, or both. Additionally, compensatory mitigation would be required.

Compensatory mitigation for loss of CTS upland habitat will be provided via on-site creation, off-site preservation, the purchase of credits from a mitigation bank, or some combination of the aforementioned options, as approved by USFWS and CDFW. Mitigation in the form of creation of CTS habitat would occur at a minimum of a 1:1 ratio. Mitigation in the form of preservation will occur at a 3:1 ratio.

Implementation of this mitigation measure would reduce impacts to CTS and western spadefoot to levels considered less than significant.

#### *Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp*

**Potential Impact BIO-9:** Project activities may result in impacts to vernal pool branchiopods

Aquatic habitats are present on the Project Area, which could potentially provide habitat for vernal pool branchiopods. In 2010, a survey for listed large branchiopods was conducted within suitable habitat in the vicinity of the Project Area and failed to detect VPFS or VPTS (Vollmar 2011). However, vernal pools on the current Project Area were not surveyed and thus the presence of VPFS and VPTS cannot be ruled out. Project activities including grading or filling of vernal pool features could result in impacts to VPFS and VPTS by causing direct mortality of adults or eggs, or by causing destruction of habitat. The loss of 0.16 acre of vernal pool habitat within the Project Area, and the potential take of cysts of vernal pool branchiopods would be a significant impact under CEQA. Activities that result in the impacts to vernal pool branchiopods are significant impact under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

**Mitigation Measure BIO-9:** *Vernal pool fairy shrimp and vernal pool tadpole shrimp*

To determine if vernal pool branchiopods are present within the Project Area, protocol-level surveys shall be conducted by a biologist that holds a valid 10(a)(1)(A) recovery permit in accordance with the *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015). If vernal pool branchiopods are determined to be absent by way of protocol-level surveys, no additional mitigation would be required.

Without protocol-level to confirm absence, it is likely USFWS will assume that vernal pool branchiopods are present, and an incidental take permit must be obtained from the USFWS prior to any ground-breaking activities and compensatory mitigation would be required.

If vernal pool branchiopods are either confirmed or assumed to be present, and pending the outcome of the jurisdictional determination by the Corps as to WOTUS within the Project Area, a USFWS Biological Opinion under Section 7 of the ESA, a Section 10 Habitat Conservation Plan would be required, or both. Additionally, compensatory mitigation would be required. Compensatory mitigation for loss of vernal pool branchiopod habitat will be provided via on-site creation, off-site preservation, the purchase of credits from a mitigation bank, or some combination of the aforementioned options, as approved by USFWS. Mitigation in the form of

creation of vernal pool habitat would occur at a minimum of a 1:1 ratio. Mitigation in the form of preservation will occur at a 3:1 ratio. Implementation of this mitigation measure would reduce impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp to levels considered less than significant.

## 7.2 Sensitive Natural Communities Impacts and Mitigation Evaluation

This section addresses the question outlined in CEQA Appendix G, Part IV (b):

- b) Does the Project 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 Game or U.S. Fish and Wildlife Service;*

### Impact BIO-10: Project Activities Will Result in Conversion of Biological Communities within Project Area

The Project will result in ground disturbance and other activities that will result in the conversion of existing biological communities within the approximate 390-acre Project Area. Table 2, Project Area Biological Community Conversion, provides a summary of the habitat conversion by land use area within the Project Area. Proposed impacts to biological communities are shown in Appendix A – Figure 6.

Table 2. Project Area Biological Community Conversion

Community Type	Mine Pit Area	Overburden & Stockpile Area	Undisturbed	Total Area (acres)
<b>Non-sensitive</b>				
Developed	49.65	78.71	19.63	147.99
Quarry drainage ditch	0.04	0.28	0.14	0.46
Quarry detention basin	0.34	3.33	1.05	4.72
Non-native annual grassland	85.15	18.69	80.92	184.76
Buckbrush chaparral	--	1.09	3.79	4.88
<b>Potentially Sensitive</b>				
Seasonal wetland	0.33	0.49	1.42	2.24
Vernal pool	0.16	--	0.17	0.33
Ephemeral stream	0.18	0.11	0.38	0.67
Drainage ditch	--	--	0.01	0.01
Pond	--	--	0.87	0.87
Blue oak woodland	2.07	6.20	29.17	37.44
Interior live oak woodland	--	2.38	2.08	4.46
<b>Total</b>				<b>389.21</b>

The proposed Project will result in the loss of 7.47 acres of blue oak woodland, and 1.42 acres of interior live oak woodland which are potentially considered sensitive under CEQA and the California Oak Woodlands Conservation Act. The loss of sensitive habitats would be a significant impact under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

CDFW jurisdiction within the Project Area includes the ephemeral streams, pond, and seasonal wetlands and marsh which are directly adjacent to these non-wetland waters features. Potential CDFW jurisdictional features per Section 1600-1616 of the CFGC are depicted in Appendix A, Figure 7. The direct loss of these aquatic and riparian features is considered a significant impact under CEQA, and mitigation or avoidance measures may be required to reduce impacts to less-than-significant levels.

#### **Mitigation Measure BIO-10: Sensitive Communities.**

Mitigation may be required if impacts to oak woodlands occur through Project implementation and are deemed significant by the lead agency. Per the California Oak Woodland Conservation Act, the significance of an impact to oak woodlands is ultimately determined by the County of Amador. If impacts to oak woodlands from Project activities are considered significant, the following mitigation measures may be required:

- Conservation of oak woodlands, through the use of conservation easements.
- Restoration of former oak woodlands or establishment of new oak woodlands through planting an appropriate number of replacement trees, including maintenance, monitoring, and replacement of failed plantings for a period of seven years. This mitigation requirement cannot account for more than one half of the mitigation pursuant to the California Oak Woodland Conservation Act.
- Contribution of funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the FGC.

The Project Area contains approximately 0.67 acre of ephemeral stream, 0.26 acre of pond, 0.80 acre of freshwater marsh, and 1.92 acre of seasonal wetland which are potentially subject to CDFW jurisdiction under Sections 1600-1616 of the CFGC. Project Activities will result in direct impacts to approximately the 0.29 acre of ephemeral stream, 0.13 acre of freshwater marsh, and 0.60 acre of seasonal wetland through expansion of the proposed mine pit, overburden, and stockpile areas. The Applicant will obtain a Section 1602 Lake and Streambed Alteration Agreement from the CDFW prior to beginning work within potentially jurisdictional habitat, and will comply with any specific conditions of those approvals. Mitigation measures for these features are discussed below in Section 7.3 since they are also under the jurisdiction of the Corps and RWQCB under the CWA and State Wetland Policy.

Implementation of this mitigation measure would reduce impacts to sensitive oak woodlands to levels considered less than significant.

### **7.3 Impacts and Mitigation Evaluation for Wetlands and Other Areas Regulated by Section 404 of the Clean Water Act**

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or RWQCB in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

*c) Does the Project have the potential to 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;*

#### **Impact BIO-11: Project Activities Will Result in Impacts to Wetlands and Other Areas Regulated by Section 404 of the Clean Water Act**

Expansion of the mine and the overburden and stockpile areas would result in direct impacts to approximately 1.6 acres of aquatic features, including 0.82 acres of seasonal wetland, 0.33 acre of freshwater marsh, 0.16 acre of vernal pool, and 0.29 acre of ephemeral streams. All of these aquatic features except ephemeral streams, are within the jurisdiction of the Corps under Section 404 of the CWA and all are within the jurisdiction of the RWQCB under Section 401 of the CWA and the State Wetland Policy.

#### **Mitigation Measure BIO-11: Wetlands and Other Areas Regulated by Section 404 of the Clean Water Act**

Applicant will obtain all required resource agency permit approvals prior to beginning work within potentially jurisdictional waters and wetlands, and will comply with any specific conditions of those approvals. Permit approvals may include a Section 404 Permit from the Corps and Section 401 Water Quality Certification from the RWQCB.

Impacts to jurisdictional wetlands and non-wetland waters features typically require compensatory mitigation at a minimum 1:1 ratio on a functions and values basis ("no net loss"); however, the final wetland mitigation requirements are determined by the regulatory agencies during the permitting process. Required mitigation ratios can be met by creating wetlands on-site or off-site (may require a higher than 1:1 replacement to impacts ratio) or purchasing wetland credits (1:1 ratio) from a wetland mitigation bank. In certain unusual cases preservation only mitigation is allowed based on a watershed analysis.

Implementation of this mitigation measure would reduce impacts to wetlands and other areas regulated by Section 404 of the Clean Water Act to levels considered less than significant.

### **7.4 Impacts and Mitigation Evaluation for Habitat Corridors and Linkages**

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

*d) Does the Project have the potential to 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 sites;*

Currently, the Project Area is surrounded by large tracks of open space and natural habitats. While the proposed Project will result in the conversion of non-native annual grassland and



sensitive habitat communities, the significant wildlife corridors within the Project Area will remain. As such, potential impacts to wildlife movement within the Project Area would be **less-than-significant** compared to existing conditions. Existing wildlife movement corridors within the Project Area and vicinity would be preserved.

## **7.5 Impacts and Mitigation Evaluation for Local Policies and Ordinances**

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

*e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

Compliance with County Code will be required to obtain building permits prior to project implementation. This will include compliance with tree removal requirements as outlined in BIO-10 above. Therefore, the Project is not anticipated to conflict with County tree removal requirements.

## **7.6 Habitat Conservation Plans**

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

*f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The Project Area is not located within the plan area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan and therefore would not have the potential to conflict with any such plans.

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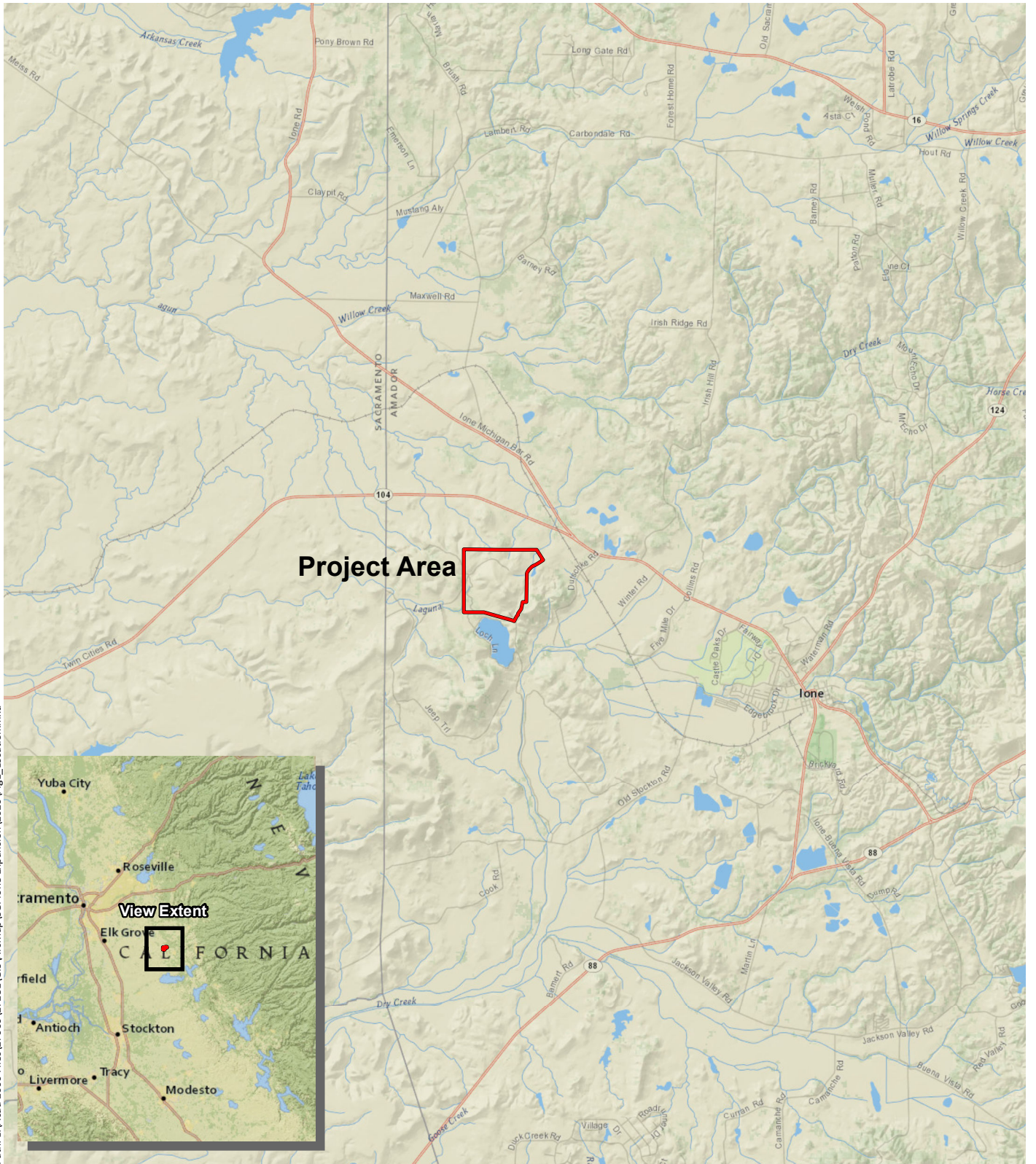
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APPENDIX A  
PROJECT FIGURES

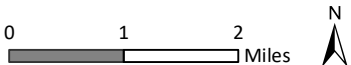


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Sources: National Geographic, WRA | Prepared By: SGillespie, 4/14/2020

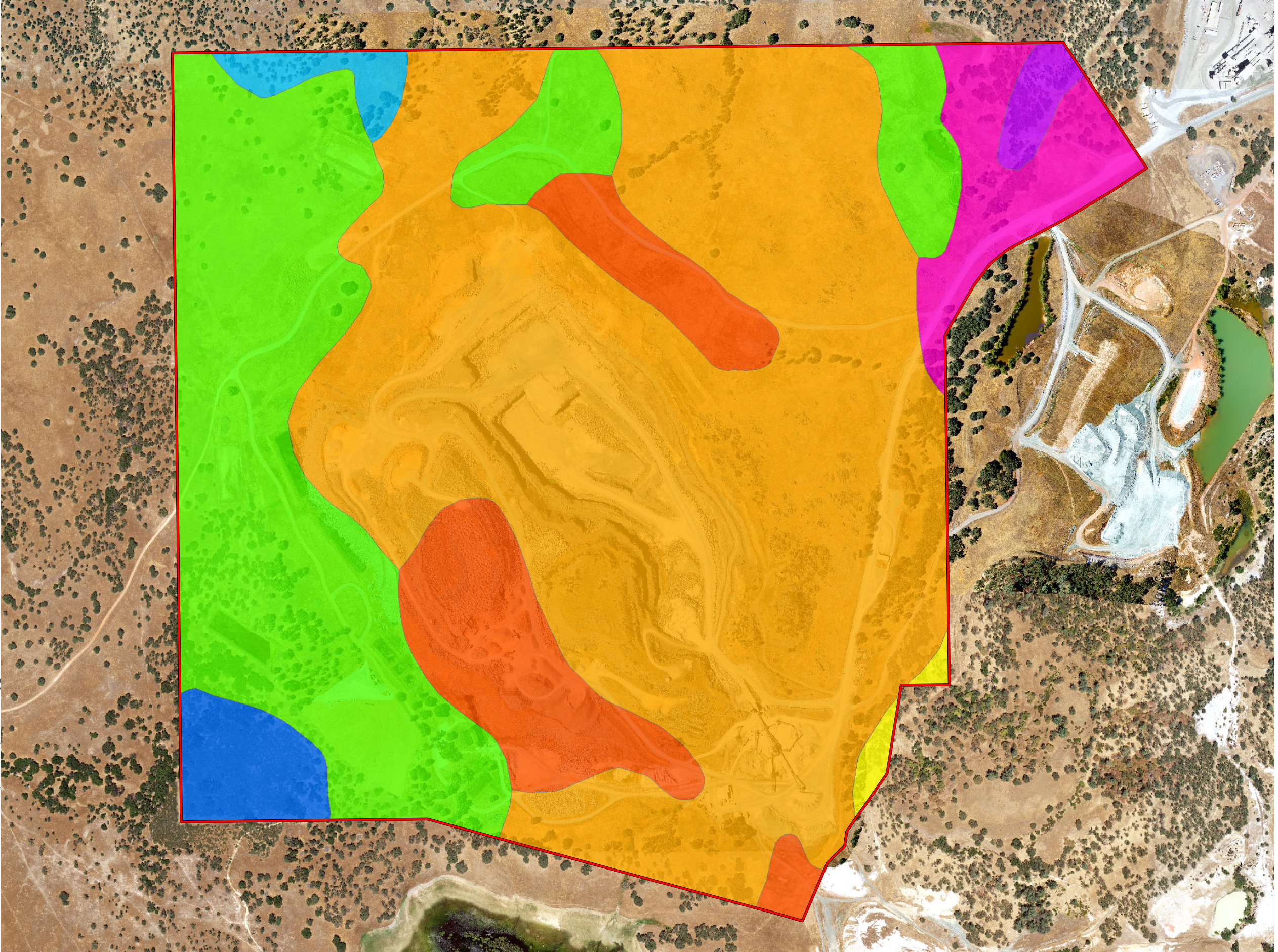
**Figure 1. Project Area Regional Location Map**

SGI Ione Quarry Expansion  
Amador County, California

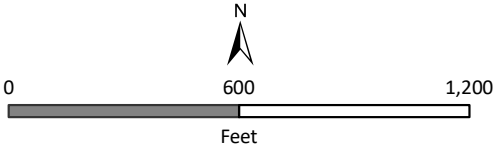


## Figure 2. Soils

SGI Lone Quarry Expansion  
Amador County, California



- Study Area
- Auburn-Argonaut silt loams, 0 to 16 percent slopes
- Auburn-Argonaut very rocky silt loams, 3 to 31 percent slopes
- Inks loam and Rock land, 3 to 45 percent slopes
- Pardee cobbly loam, 3 to 31 percent slopes
- Pentz sandy loam, 16 to 31 percent slopes
- Pentz sandy loam, 2 to 16 percent slopes
- Placer diggings and Riverwash
- Red Bluff-Mokelumne complex, 5 to 16 percent slopes



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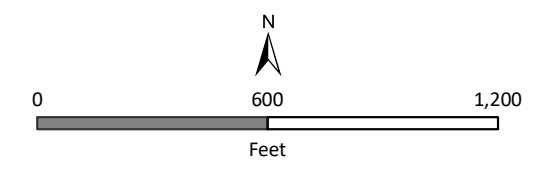


**Figure 3.**  
**Biological Communities**

SGI lone Quarry Expansion  
Amador County, California

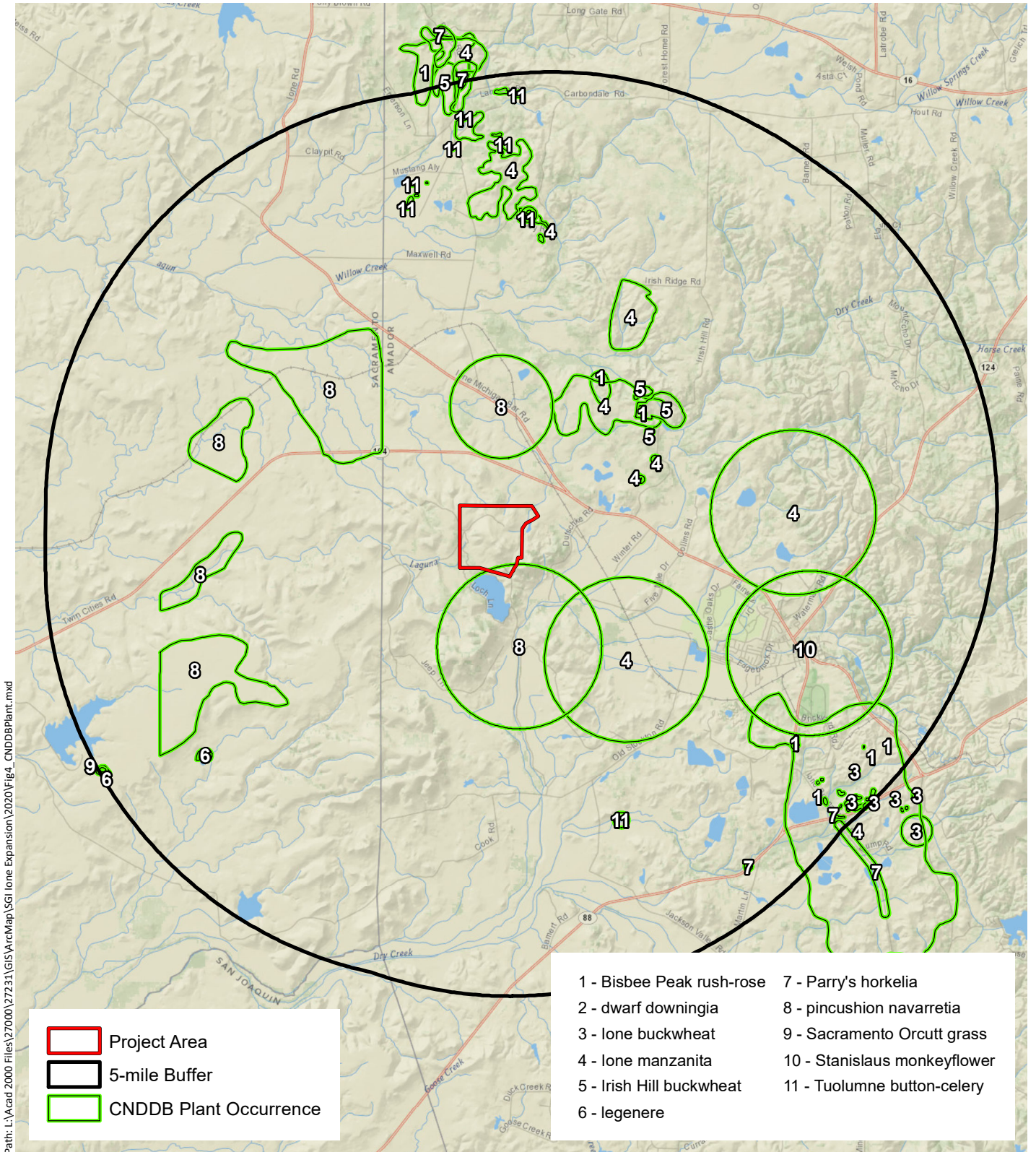


- Study Area: (389.21 ac.)
- Potentially Sensitive Habitat**
- Blue Oak Woodland: (37.44 ac)
- Drainage Ditch: (<0.01 ac)
- Ephemeral Stream: (0.67 ac)
- Freshwater Marsh: (1.00 ac)
- Interior Live Oak Woodland: (4.46 ac)
- Pond: (0.26 ac)
- Seasonal Wetland: (2.24 ac)
- Vernal Pool: (0.33 ac)
- Non-Sensitive Habitat**
- Buckbrush Chaparral: (4.88 ac)
- Quarry Detention Basin: (4.72 ac)
- Developed: (147.99 ac)
- Quarry Drainage Ditch: (0.46 ac)
- Non-native Annual Grassland: (184.76 ac)



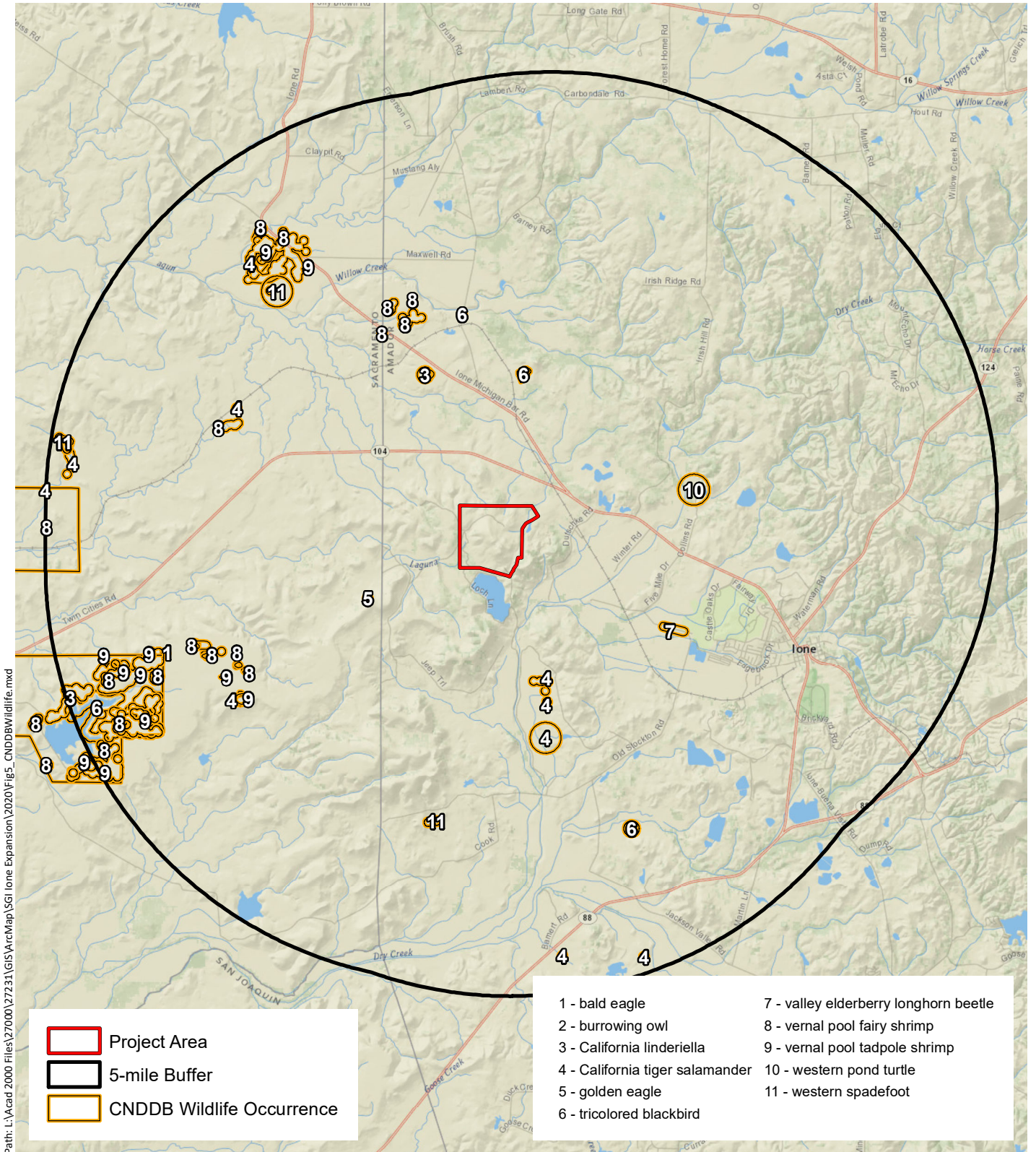
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Sources: UAV 2019, Hexagon 2018, WRA | Prepared By: mweidenbach, 8/13/2020



Sources: National Geographic, WRA | Prepared By: SGillespie, 4/14/2020

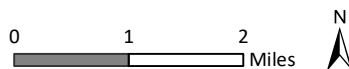
**Figure 4. Special Status Plant Species within 5-mile Radius of Project Area**



Sources: National Geographic, WRA | Prepared By: SGillespie, 4/14/2020

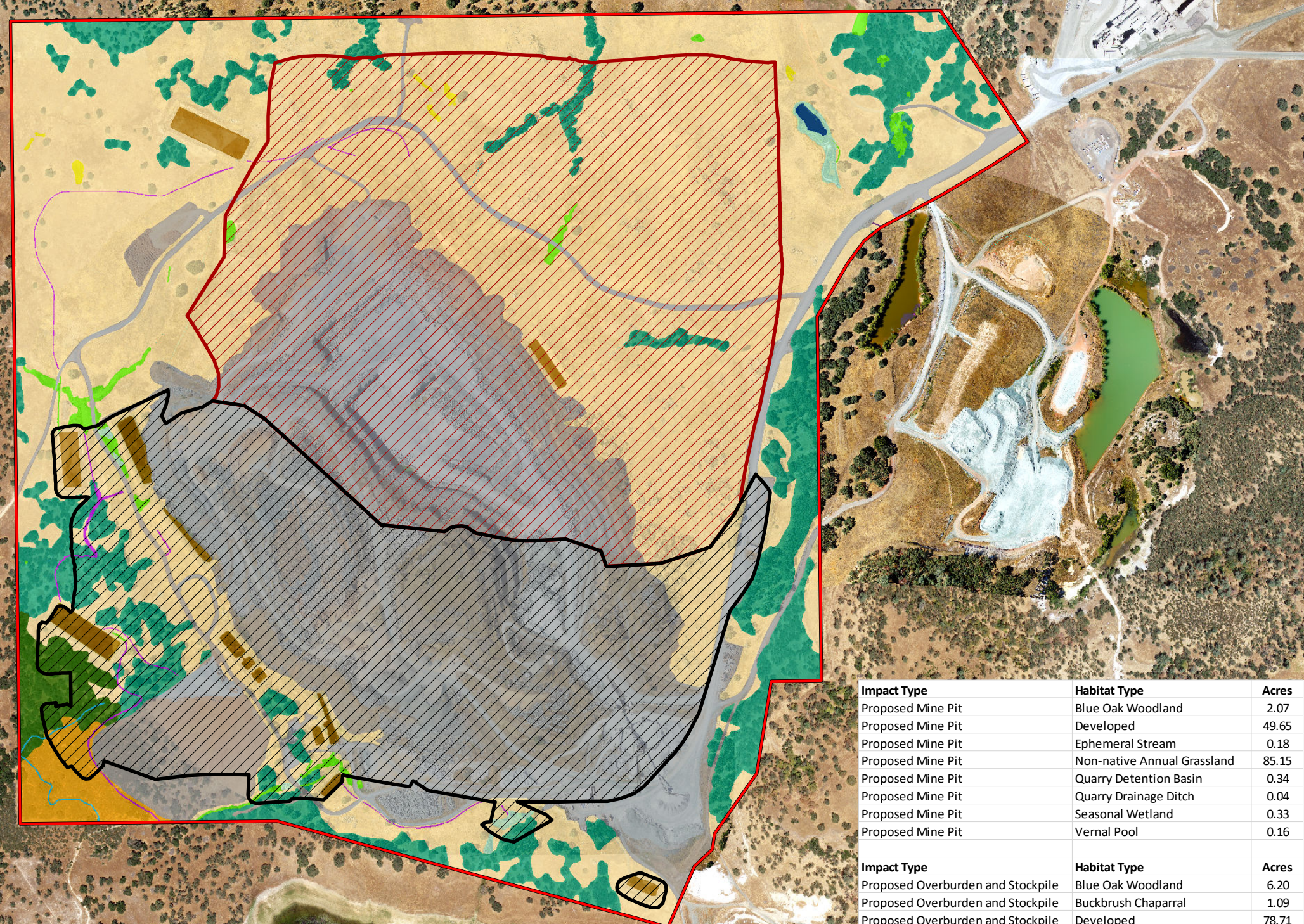
**Figure 5. Special Status Wildlife Species within 5-mile Radius of Project Area**

SGI Ione Quarry Expansion  
Amador County, California



**Figure 6.  
Proposed Impacts**

SGI Lone Quarry Expansion  
Amador County, California

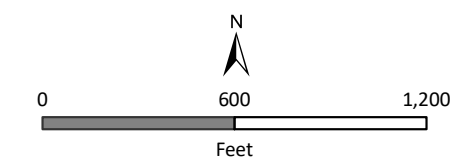


- Study Area: (389.22 ac.)
- Proposed Mine Pit: (137.92 ac)
- Proposed Overburden and Stockpile: (111.62 ac)

- Potentially Sensitive Habitat**
- Blue Oak Woodland: (37.44 ac)
  - Drainage Ditch: (<0.01 ac)
  - Ephemeral Stream: (0.67 ac)
  - Freshwater Marsh: (1.00 ac)
  - Interior Live Oak Woodland: (4.46 ac)
  - Pond: (0.26 ac)
  - Seasonal Wetland: (2.24 ac)
  - Vernal Pool: (0.33 ac)

- Non-Sensitive Habitat**
- Buckbrush Chaparral: (4.88 ac)
  - Quarry Detention Basin: (4.72 ac)
  - Developed: (147.99 ac)
  - Quarry Drainage Ditch: (0.46 ac)
  - Non-native Annual Grassland: (184.76 ac)

Impact Type	Habitat Type	Acres
Proposed Mine Pit	Blue Oak Woodland	2.07
Proposed Mine Pit	Developed	49.65
Proposed Mine Pit	Ephemeral Stream	0.18
Proposed Mine Pit	Non-native Annual Grassland	85.15
Proposed Mine Pit	Quarry Detention Basin	0.34
Proposed Mine Pit	Quarry Drainage Ditch	0.04
Proposed Mine Pit	Seasonal Wetland	0.33
Proposed Mine Pit	Vernal Pool	0.16
Proposed Overburden and Stockpile	Blue Oak Woodland	6.20
Proposed Overburden and Stockpile	Buckbrush Chaparral	1.09
Proposed Overburden and Stockpile	Developed	78.71
Proposed Overburden and Stockpile	Ephemeral Stream	0.11
Proposed Overburden and Stockpile	Freshwater Marsh	0.33
Proposed Overburden and Stockpile	Interior Live Oak Woodland	2.38
Proposed Overburden and Stockpile	Non-native Annual Grassland	18.69
Proposed Overburden and Stockpile	Quarry Detention Basin	3.33
Proposed Overburden and Stockpile	Quarry Drainage Ditch	0.28
Proposed Overburden and Stockpile	Seasonal Wetland	0.49



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**Figure 7.**  
**Potential CFGC Section 1602**  
**Jurisdictional Features**

SGI Ione Quarry Expansion  
 Amador County, California

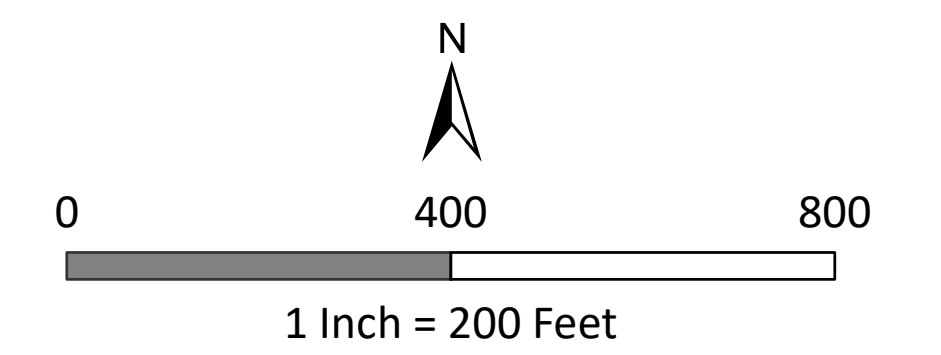


Study Area: (389.21 ac.)

**Potential Section 1602 Jurisdictional Features**

- █ Ephemeral Stream: (0.67 ac.)
- █ Freshwater Marsh: (0.80 ac.)
- █ Pond: (0.26 ac.)
- █ Seasonal Wetland: (1.92 ac.)

WRA Type	WRA ID	Acres	Length (ft.)
Ephemeral Stream	ES-01	0.045297	656
Ephemeral Stream	ES-02	0.006655	291
Ephemeral Stream	ES-03	0.000453	21
Ephemeral Stream	ES-04	0.048185	525
Ephemeral Stream	ES-05	0.009603	210
Ephemeral Stream	ES-06	0.003857	83
Ephemeral Stream	ES-07	0.05981	1302
Ephemeral Stream	ES-08	0.034579	1509
Ephemeral Stream	ES-09	0.023296	517
Ephemeral Stream	ES-10	0.11563	1300
Ephemeral Stream	ES-11	0.021985	492
Ephemeral Stream	ES-12	0.005782	127
Ephemeral Stream	ES-13	0.027845	610
Ephemeral Stream	ES-14	0.018121	393
Ephemeral Stream	ES-15	0.006591	144
Ephemeral Stream	ES-16	0.040411	585
Ephemeral Stream	ES-17	0.006597	146
Ephemeral Stream	ES-18	0.009386	135
Ephemeral Stream	ES-19	0.002972	131
Ephemeral Stream	ES-20	0.00358	158
Ephemeral Stream	ES-21	0.000922	41
Ephemeral Stream	ES-22	0.025851	377
Ephemeral Stream	ES-23	0.00414	91
Ephemeral Stream	ES-24	0.047838	512
Ephemeral Stream	ES-25	0.059263	633
Ephemeral Stream	ES-26	0.026492	574
Ephemeral Stream	ES-27	0.000531	23
Ephemeral Stream	ES-28	0.005472	312
Ephemeral Stream	ES-29	0.006405	710
Freshwater Marsh	FM-01	0.603904	<Null>
Freshwater Marsh	FM-02	0.055428	<Null>
Freshwater Marsh	FM-03	0.029166	<Null>
Freshwater Marsh	FM-04	0.011051	<Null>
Freshwater Marsh	FM-05	0.030882	<Null>
Freshwater Marsh	FM-07	0.069253	<Null>
Pond	P-01	0.262497	<Null>
Seasonal Wetland	SW-01	0.147398	<Null>
Seasonal Wetland	SW-02	0.042577	<Null>
Seasonal Wetland	SW-04	0.254864	<Null>
Seasonal Wetland	SW-05	0.025979	<Null>
Seasonal Wetland	SW-07	0.219982	<Null>
Seasonal Wetland	SW-10	0.00535	<Null>
Seasonal Wetland	SW-11	0.267544	<Null>
Seasonal Wetland	SW-12	0.345787	<Null>
Seasonal Wetland	SW-13	0.034264	<Null>
Seasonal Wetland	SW-14	0.120285	<Null>
Seasonal Wetland	SW-15	0.192159	<Null>
Seasonal Wetland	SW-19	0.009393	<Null>
Seasonal Wetland	SW-20	0.113749	<Null>
Seasonal Wetland	SW-21	0.018311	<Null>
Seasonal Wetland	SW-22	0.11826	<Null>



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APPENDIX B

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

**Appendix B-1.** Plant Species Observed in the Project Area on September 13 and 14, 2018, April 17, May 14, 15, 16, and July 2, 2019.

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Achillea millefolium</i>	Yarrow	native	perennial herb	-	-	FACU
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish lotus	native	annual herb	-	-	UPL
<i>Acmispon wrangelianus</i>	Chilean trefoil	native	annual herb	-	-	-
<i>Adenostoma fasciculatum</i>	Chamise	native	tree, shrub	-	-	-
<i>Aegilops triuncialis</i>	Goatgrass	non-native (invasive)	annual grass	-	High	-
<i>Aesculus californica</i>	Buckeye	native	tree	-	-	-
<i>Aira caryophyllea</i>	Silvery hairgrass	non-native	annual grass	-	-	FACU
<i>Alopecurus saccatus</i>	Foxtail	native	annual grass	-	-	OBL
<i>Amsinckia intermedia</i>	Common fiddleneck	native	annual herb	-	-	-
<i>Anthemis cotula</i>	Dog fennel	non-native	annual herb	-	-	FACU
<i>Anthriscus caucalis</i>	Bur chervil	non-native	annual herb, vine	-	-	-
<i>Avena barbata</i>	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush	native	shrub	-	-	-
<i>Brachypodium distachyon</i>	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
<i>Briza minor</i>	Little rattlesnake grass	non-native	annual grass	-	-	FAC
<i>Brodiaea appendiculata</i>	Hoover's brodiaea	native	perennial herb	-	-	-
<i>Brodiaea nana</i>	Dwarf brodiaea	native	perennial herb	-	-	-
<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
<i>Bromus madritensis</i>	Foxtail chess, foxtail brome	non-native	annual grass	-	-	UPL
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
<i>Ceanothus cuneatus</i>	Buck brush	native	shrub	-	-	-
<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	-	High	-



Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Centromadia fitchii</i>	Spikeweed	native	annual herb	-	-	FACU
<i>Cerastium glomeratum</i>	Large mouse ears	non-native	annual herb	-	-	UPL
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Common soaproot	native	perennial herb	-	-	-
<i>Cirsium vulgare</i>	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Purple clarkia	native	annual herb	-	-	-
<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Miner's lettuce	native	annual herb	-	-	FACU
<i>Claytonia perfoliata</i>	Miner's lettuce	native	annual herb	-	-	FAC
<i>Cotula coronopifolia</i>	Brass buttons	non-native (invasive)	perennial herb	-	Limited	OBL
<i>Crassula connata</i>	Sand pygmy weed	native	annual herb	-	-	FAC
<i>Cynodon dactylon</i>	Bermuda grass	non-native (invasive)	perennial grass	-	Moderate	FACU
<i>Cynosurus echinatus</i>	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-	-	FACW

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Dactylis glomerata</i>	Orchardgrass	non-native (invasive)	perennial grass	-	Limited	FACU
<i>Daucus pusillus</i>	Wild carrot	native	annual herb	-	-	-
<i>Delphinium variegatum</i> ssp. <i>variegatum</i>	Royal larkspur	native	perennial herb	-	-	-
<i>Deschampsia danthonioides</i>	Annual hairgrass	native	annual grass	-	-	FACW
<i>Dichelostemma capitatum</i>	Blue dicks	native	perennial herb	-	-	FACU
<i>Diplacus aurantiacus</i>	Sticky monkeyflower	native	shrub	-	-	FACU
<i>Dittrichia graveolens</i>	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
<i>Downingia bicornuta</i>	Bristled downingia	native	annual herb	-	-	OBL
<i>Echinodorus berteroi</i>	Burhead	native	perennial herb (aquatic)	-	-	OBL
<i>Eleocharis macrostachya</i>	Spike rush	native	perennial grasslike herb	-	-	OBL
<i>Elymus caput-medusae</i>	Medusa head	non-native (invasive)	annual grass	-	High	-
<i>Elymus glaucus</i>	Blue wildrye	native	perennial grass	-	-	FACU

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Epilobium torreyi</i>	Narrow boisduvalia	native	annual herb	-	-	FACW
<i>Eriodictyon californicum</i>	Yerba santa	native	shrub	-	-	-
<i>Erodium botrys</i>	Big heron bill	non-native	annual herb	-	-	FACU
<i>Erodium brachycarpum</i>	White stemmed filaree	non-native	annual herb	-	-	-
<i>Eryngium vaseyi</i>	Coyote thistle	native	perennial herb	-	-	FACW
<i>Erythranthe guttata</i>	Seep monkeyflower	native	perennial herb (rhizomatous)	-	-	OBL
<i>Eschscholzia californica</i>	California poppy	native	annual, perennial herb	-	-	-
<i>Euphorbia</i> sp.	-	-	-	-	-	-
<i>Festuca bromoides</i>	Brome fescue	non-native	annual grass	-	-	FACU
<i>Festuca perennis</i>	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
<i>Geranium dissectum</i>	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
<i>Glyceria declinata</i>	Waxy mannagrass	non-native (invasive)	perennial grass	-	Moderate	FACW

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Gnaphalium palustre</i>	Lowland cudweed	native	annual herb	-	-	FACW
<i>Gratiola ebracteata</i>	Common hedge hyssop	native	annual herb	-	-	OBL
<i>Heterotheca grandiflora</i>	Telegraph weed	native	annual, perennial herb	-	-	-
<i>Hirschfeldia incana</i>	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
<i>Holocarpha virgata</i>	Narrow tarplant	native	annual herb	-	-	-
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
<i>Hordeum murinum</i>	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
<i>Hypochaeris glabra</i>	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-
<i>Juncus bufonius</i>	Common toad rush	native	annual grasslike herb	-	-	FACW
<i>Juncus capitatus</i>	Leafy bracted dwarf rush	non-native	annual grasslike herb	-	-	FACU

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Juncus effusus</i>	Common bog rush	native	perennial grasslike herb	-	-	FACW
<i>Juncus mexicanus</i>	Mexican rush	native	perennial grasslike herb	-	-	FACW
<i>Juncus xiphioides</i>	Iris leaved rush	native	perennial grasslike herb	-	-	OBL
<i>Kickxia elatine</i>	Sharp point fluellin	non-native	perennial herb	-	-	UPL
<i>Lactuca serriola</i>	Prickly lettuce	non-native	annual herb	-	-	FACU
<i>Lasthenia fremontii</i>	Fremont's goldfields	native	annual, perennial herb	-	-	OBL
<i>Lasthenia glaberrima</i>	Smooth goldfields	native	annual herb	-	-	OBL
<i>Leontodon saxatilis</i>	Hawkbit	non-native	annual herb	-	-	FACU
<i>Lepidium nitidum</i>	Shining pepper grass	native	annual herb	-	-	FAC
<i>Logfia gallica</i>	Narrowleaf cottonrose	non-native	annual herb	-	-	-
<i>Lonicera hispidula</i>	Pink honeysuckle	native	vine, shrub	-	-	FACU

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Lotus corniculatus</i>	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
<i>Lupinus microcarpus</i>	Chick lupine	native	annual herb	-	-	-
<i>Lupinus nanus</i>	Valley sky lupine	native	annual herb	-	-	-
<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-	-	FAC
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
<i>Madia gracilis</i>	Gumweed	native	annual herb	-	-	-
<i>Matricaria discoidea</i>	Pineapple weed	native	annual herb	-	-	FACU
<i>Melica</i> sp.	-	-	-	-	-	-
<i>Melilotus indicus</i>	Annual sweetclover yellow	non-native	annual herb	-	-	FACU
<i>Micropus californicus</i>	Q tips	native	annual herb	-	-	FACU
<i>Montia fontana</i>	Water montia	native	annual herb	-	-	OBL
<i>Nasturtium officinale</i>	Watercress	native	perennial herb (aquatic)	-	-	OBL
<i>Navarretia intertexta</i>	Interwoven navarretia	native	annual herb	-	-	FACW

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Navarretia pubescens</i>	Purple navarretia	native	annual herb	-	-	-
<i>Navarretia tagetina</i>	Marigold navarretia	native	annual herb	-	-	FACW
<i>Parentucellia viscosa</i>	Yellow parentucellia	non-native (invasive)	annual herb	-	Limited	FAC
<i>Pentagramma triangularis</i>	Gold back fern	native	fern	-	-	-
<i>Perideridia</i> sp.	-	-	-	-	-	-
<i>Phacelia cicutaria</i> var. <i>cicutaria</i>	Caterpillar phacelia	native	annual herb	-	-	-
<i>Phalaris aquatica</i>	Harding grass	non-native (invasive)	perennial grass	-	Moderate	FACU
<i>Phoradendron leucarpum</i> ssp. <i>tomentosum</i>	Mistletoe	native	shrub (parasitic)	-	-	-
<i>Pinus sabiniana</i>	Bull pine	native	tree	-	-	-
<i>Plagiobothrys nothofulvus</i>	Rusty haired popcorn flower	native	annual herb	-	-	FAC
<i>Plagiobothrys stipitatus</i>	Vernal pool allocarya	native	annual herb	-	-	FACW
<i>Plantago coronopus</i>	Cut leaf plantain	non-native	annual herb	-	-	FAC
<i>Plantago erecta</i>	California plantain	native	annual herb	-	-	-

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Pleuropogon californicus</i>	Semaphore grass	native	perennial grass (rhizomatous)	-	-	OBL
<i>Pogogyne zizyphoroides</i>	Sacramento mint	native	annual herb	-	-	OBL
<i>Polypogon interruptus</i>	Ditch beard grass	non-native	perennial grass	-	-	FACW
<i>Polypogon monspeliensis</i>	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Cottonwood	native	tree	-	-	FAC
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	non-native	annual herb	-	-	FAC
<i>Psilocarphus brevissimus</i> var. <i>brevissimus</i>	Woolly heads	native	annual herb	-	-	FACW
<i>Quercus douglasii</i>	Blue oak	native	tree	-	-	-
<i>Quercus wislizeni</i>	Interior live oak	native	tree, shrub	-	-	-
<i>Ranunculus aquatilis</i>	Whitewater crowfoot	native	perennial herb (aquatic)	-	-	OBL
<i>Ranunculus bonariensis</i> var. <i>trisepalus</i>	Vernal pool buttercup	native	annual herb	-	-	OBL
<i>Ranunculus californicus</i>	Common buttercup	native	perennial herb	-	-	FACU



Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Ranunculus muricatus</i>	Buttercup	non-native	annual, perennial herb	-	-	FACW
<i>Rumex conglomeratus</i>	Green dock	non-native	perennial herb	-	-	FACW
<i>Salix gooddingii</i>	Gooding's willow	native	tree	-	-	FACW
<i>Sanicula bipinnata</i>	Poison sanicle	native	perennial herb	-	-	-
<i>Sanicula crassicaulis</i>	Pacific sanicle	native	perennial herb	-	-	-
<i>Schoenoplectus californicus</i>	California bulrush	native	perennial grasslike herb	-	-	OBL
<i>Scrophularia californica</i>	California bee plant	native	perennial herb	-	-	FAC
<i>Senecio vulgaris</i>	Common groundsel	non-native	annual herb	-	-	FACU
<i>Sherardia arvensis</i>	Field madder	non-native	annual herb	-	-	-
<i>Sidalcea hartwegii</i>	Hartweg's checkerbloom	native	annual herb	-	-	-
<i>Silene gallica</i>	Common catchfly	non-native	annual herb	-	-	-

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Silybum marianum</i>	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
<i>Sisymbrium officinale</i>	Hedge mustard	non-native	annual herb	-	-	-
<i>Sisyrinchium bellum</i>	Blue eyed grass	native	perennial herb	-	-	FACW
<i>Sonchus asper</i> ssp. <i>asper</i>	Prickly sow thistle	non-native	annual herb	-	-	FAC
<i>Sonchus oleraceus</i>	Common sow thistle	non-native	annual herb	-	-	UPL
<i>Spergularia rubra</i>	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC
<i>Torilis arvensis</i>	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
<i>Toxicodendron diversilobum</i>	Poison oak	native	vine, shrub	-	-	FACU
<i>Trifolium depauperatum</i>	Dwarf sack clover	native	annual herb	-	-	FAC
<i>Trifolium hirtum</i>	Rose clover	non-native (invasive)	annual herb	-	Limited	-
<i>Trifolium tomentosum</i>	Woolly clover	non-native	annual herb	-	-	-
<i>Trifolium variegatum</i>	Variegated clover	native	annual herb	-	-	FAC
<i>Trifolium willdenovii</i>	Tomcat clover	native	annual herb	-	-	FACW

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Triglochin scilloides</i>	Flowering-quillwort	native	annual herb (aquatic)	-	-	OBL
<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	Butter 'n' eggs	native	annual herb	-	-	-
<i>Triteleia hyacinthina</i>	Wild hyacinth	native	perennial herb	-	-	FAC
<i>Triteleia laxa</i>	Ithuriel's spear	native	perennial herb	-	-	-
<i>Tuberaria guttata</i>	Tuberaria	non-native	annual, perennial herb	-	-	-
<i>Typha angustifolia</i>	Narrow leaf cattail	non-native	perennial herb (aquatic)	-	-	OBL
<i>Typha latifolia</i>	Broadleaf cattail	native	perennial herb (aquatic)	-	-	OBL
<i>Vicia hirsuta</i>	Hairy vetch	non-native	annual herb, vine	-	-	-
<i>Vicia sativa</i>	Spring vetch	non-native	annual herb, vine	-	-	FACU
<i>Vicia villosa</i>	Hairy vetch	non-native	annual herb, vine	-	-	-
<i>Zeltnera muehlenbergii</i>	Muehlenberg's centaury	native	annual herb	-	-	FAC

Scientific name	Common name	Life form	Origin	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
<i>Zeltnera venusta</i>	Charming centaury	native	annual herb	-	-	-

All species identified using the *Jepson Manual, 2<sup>nd</sup> Edition* (Baldwin et al. 2012) and *The Jepson Flora Project* (Jepson eFlora 2019); nomenclature follows *The Jepson Flora Project* (Jepson eFlora 2019) unless otherwise noted

Sp.: “species”, intended to indicate that the observer was confident in the identity of the genus but uncertain which species

Cf.: intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

<sup>1</sup>Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2017)

FE: Federal Endangered

FT: Federal Threatened

SE: State Endangered

ST: State Threatened

SR: State Rare

Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere

Rank 1B: Plants rare, threatened, or endangered in California and elsewhere

Rank 2A: Plants presumed extirpated in California, but more common elsewhere

Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – a review list

Rank 4: Plants of limited distribution – a watch list

<sup>2</sup>Invasive Status: California Invasive Plant Inventory (Cal-IPC 2006)

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.

Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited- moderate distribution ecologically

Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically

Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

<sup>3</sup>Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)

OBL: Almost always a hydrophyte, rarely in uplands

FACW: Usually a hydrophyte, but occasionally found in uplands

FAC: Commonly either a hydrophyte or non-hydrophyte

FACU: Occasionally a hydrophyte, but usually found in uplands

UPL: Rarely a hydrophyte, almost always in uplands

NL: Rarely a hydrophyte, almost always in uplands

NI: No information; not factored during wetland delineation

**Appendix B-2. Wildlife Species Observed within the Project Area on May 14 and May 15, 2019**

Scientific Name	Common Name	Conservation Status <sup>1</sup>
<b>Mammals</b>		
<i>Canis latrans</i>	Coyote	-
<i>Lepus californicus</i>	Black-tailed jackrabbit	-
<i>Odocoileus hemionus californicus</i>	California mule deer	-
<i>Otospermophilus beecheyi</i>	California ground squirrel	-
<b>Birds</b>		
<i>Agelaius phoeniceus</i>	Red-winged blackbird	-
<i>Anas platyrhynchos</i>	Mallard	-
<i>Aphelocoma californica</i>	California scrub-jay	-
<i>Apodidae spp.</i>	Swift sp.	-
<i>Ardea alba</i>	Great egret	Roost sites protected by CDFW
<i>Baeolophus inornatus</i>	Oak titmouse	BCC
<i>Branta canadensis</i>	Canada goose	-
<i>Bubo virginianus</i>	Great horned owl	-
<i>Buteo jamaicensis</i>	Red-tailed hawk	-
<i>Buteo swainsoni</i>	Swainson's hawk	ST
<i>Callipepla californica</i>	California quail	-
<i>Calypte anna</i>	Anna's hummingbird	-
<i>Cathartes aura</i>	Turkey vulture	-
<i>Charadrius vociferus</i>	Killdeer	-
<i>Columba livia</i>	Rock pigeon	-
<i>Corvus brachyrhynchos</i>	American crow	-
<i>Gallinula galeata</i>	Common gallinule	-

Scientific Name	Common Name	Conservation Status <sup>1</sup>
<i>Haemorhous mexicanus</i>	House finch	-
<i>Hirundo rustica</i>	Barn swallow	-
<i>Melanerpes formicivorus</i>	Acorn woodpecker	-
<i>Meleagris gallopavo</i>	Wild turkey	-
<i>Melospiza crissalis</i>	California towhee	-
<i>Myiarchus cinerascens</i>	Ash-throated flycatcher	-
<i>Pandion haliaetus</i>	Osprey	-
<i>Sayornis nigricans</i>	Black phoebe	-
<i>Sialia mexicana</i>	Western bluebird	-
<i>Spinus psaltria</i>	Lesser goldfinch	-
<i>Sturnella neglecta</i>	Western meadowlark	-
<i>Tachycineta bicolor</i>	Tree swallow	-
<i>Troglodytes aedon</i>	House wren	-
<i>Tyrannus verticalis</i>	Western kingbird	-
<i>Zenaidura macroura</i>	Mourning dove	-
<b>Reptiles and Amphibians</b>		
<i>Lithobates catesbeianus</i>	American bullfrog	-
<i>Sceloporus occidentalis</i>	Western fence lizard	-

<sup>1</sup>Key to Conservation Status:

ST State Threatened  
 BCC USFWS Birds of Conservation Concern

APPENDIX C

POTENTIAL FOR SPECIAL-STATUS PLANT AND WILDLIFE SPECIES  
TO OCCUR IN THE PROJECT AREA

**Appendix C. Potential Special-Status Plant and Wildlife Species Table.** Special-status plant and wildlife species table with the potential to occur within the vicinity of the Study Area (Goose Creek, Clay, Sloughouse, Carbondale, Irish Hill, Lone, Wallace, Clements, and Lockeford USGS 7.5' topographic quadrangles). Results include database searches of California Native Plant Society (CNPS) Rare and Endangered Plant Inventory, California Natural Diversity Database (CNDDB, CDFW), Information Planning and Conservation (IPaC) as well as U.S. Fish and Wildlife Service Threatened and Endangered Species Lists.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Henderson's bent grass <i>Agrostis hendersonii</i>	Rank 3.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 225 to 1000 feet (70 to 305 meters). Blooms Apr-Jun.	<b>Moderate Potential.</b> The Study Area contains potentially suitable seasonal wetlands and vernal pools which could support this species.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in April and May, a period sufficient to identify this species. No further recommendations for this species.
lone manzanita <i>Arctostaphylos myrtifolia</i>	FT, Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 195 to 1905 feet (60 to 580 meters). Blooms Nov-Mar.	<b>No Potential.</b> This species is restricted to a unique soil type known as the lone Formation (USFWS 2010), which is not present within the Study Area.	<b>Not Present.</b> This species was observed at a documented reference site along CA Highway 88 on multiple dates in 2018 and 2019 but was not observed in the Study Area during the subsequent site visits, and is presumed absent. No further actions recommended for this species.
brassy bryum <i>Bryum chryseum</i>	Rank 4.3	Chaparral (openings), cismontane woodland, valley and foothill grassland. Elevation ranges from 160 to 1970 feet (50 to 600 meters).	<b>Moderate Potential.</b> The Study Area contains potentially suitable openings in woodland and grassland communities.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys. No further recommendations for this species.



SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Hoover's calycadenia <i>Calycadenia hooveri</i>	Rank 1B.3	Cismontane woodland, valley and foothill grassland, on exposed, rocky, barren soil. Elevation ranges from 210 to 985 feet (65 to 300 meters). Blooms Jul-Sep.	<b>High Potential.</b> The Study Area contains potentially suitable rocky outcrops within cismontane woodland and grassland habitat which could support this species.	<b>Not Present.</b> This species was observed at a documented reference site along Camanche Parkway south, Calaveras County, on July 1, 2019, but was not observed in the Study Area during July 2, 2019 protocol-level rare plant survey. No further recommendations for this species.
succulent owl's-clover <i>Castilleja campestris var. succulenta</i>	FT, SE, Rank 1B.2	Vernal pools (often acidic). Elevation ranges from 160 to 2460 feet (50 to 750 meters). Blooms (Mar)Apr-May.	<b>Unlikely.</b> Despite potentially suitable seasonal wetland depression habitat, the Study Area is northeast of the historic and currently known distribution of the species. This species is not known from Amador County. The closest documented occurrence is from Sacramento County, approximately 15 miles southwest of the Study Area.	<b>Not Present.</b> No further actions recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Bisbee Peak rush-rose <i>Crocانthemum suffrutescens</i>	Rank 3.2	Chaparral. Elevation ranges from 245 to 2200 feet (75 to 670 meters). Blooms Apr-Aug.	<b>Unlikely.</b> Although the Study Area contains potentially suitable chaparral habitat known to support this species, this species is known from serpentine, gabbroic, and lone formation soils not present in the Study Area.	<b>Not Present.</b> No further actions recommended for this species.
dwarf downingia <i>Downingia pusilla</i>	Rank 2B.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 0 to 1460 feet (1 to 445 meters). Blooms Mar-May.	<b>Moderate Potential.</b> The Study Area contains potentially suitable seasonal wetland depressions and vernal pools, which could support this species.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in April and May, a period sufficient to identify this species. No further recommendations for this species.
lone buckwheat <i>Eriogonum apricum var. apricum</i>	FE, SE, Rank 1B.1	Chaparral (openings, lone formation soil). Elevation ranges from 195 to 475 feet (60 to 145 meters). Blooms Jul-Oct.	<b>No Potential.</b> The Study Area lacks chaparral habitat known to support this species. This species is restricted to a unique soil type known as the lone Formation (USFWS 2010), which is not present within the Study Area.	<b>Not Present.</b> This species was observed at a documented reference site along CA Highway 88 on multiple dates in 2018 and 2019, but was not observed in the Study Area during the subsequent site visits, and is presumed absent. No further actions recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Irish Hill buckwheat <i>Eriogonum apricum var. prostratum</i>	FE, SE, Rank 1B.1	Chaparral (openings, lone soil). Elevation ranges from 295 to 395 feet (90 to 120 meters). Blooms Jun-Jul.	<b>No Potential.</b> The Study Area lacks chaparral habitat known to support this species. This species is restricted to a unique soil type known as the lone Formation (USFWS 2010), which is not present within the Study Area.	<b>Not Present.</b> No further actions recommended for this species.
Jepson's coyote thistle <i>Eryngium jepsonii</i>	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	<b>Unlikely.</b> Despite potentially suitable seasonal wetland depression habitat which could support this species, this species is not known from the Sierra Nevada foothills. There are no CNDDDB occurrences in the Study Area vicinity (CDFW 2019).	<b>Not Present.</b> No further actions recommended for this species.
Tuolumne button-celery <i>Eryngium pinnatisectum</i>	Rank 1B.2	Cismontane woodland, lower montane coniferous forest, vernal pools. Elevation ranges from 225 to 3000 feet (70 to 915 meters). Blooms May-Aug.	<b>High Potential.</b> The Study Area contains potentially suitable seasonal wetlands and vernal pools which could support this species, and there is a documented occurrence of this species approximately 3.5 miles south of the Study Area.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in May and July, a period sufficient to identify this species. No further recommendations for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Stanislaus monkeyflower <i>Erythranthe marmorata</i>	Rank 1B.1	Cismontane woodland, lower montane coniferous forest. Elevation ranges from 325 to 2955 feet (100 to 900 meters). Blooms Mar-May.	<b>Unlikely.</b> The Study Area contains only marginally suitable woodland habitat. This species, once considered extinct, is only known from two extant populations in Fresno and Calaveras counties and is considered extirpated from Amador County (CNPS 2019b).	<b>Not Present.</b> No further actions recommended for this species.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	SE, Rank 1B.2	Marshes and swamps (lake margins), vernal pools. Elevation ranges from 30 to 7790 feet (10 to 2375 meters). Blooms Apr-Aug.	<b>Moderate Potential.</b> The Study Area contains potentially suitable seasonal wetland depressions and vernal pools which could support this species.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in April, May and July, a period sufficient to identify this species. No further recommendations for this species.
Parry's horkelia <i>Horkelia parryi</i>	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 260 to 3510 feet (80 to 1070 meters). Blooms Apr-Sep.	<b>Unlikely.</b> Despite potentially suitable chaparral and woodland habitat, this species is primarily known from chaparral and woodland habitat underlain by lone formation soils, not present in the Study Area.	<b>Not Present.</b> No further actions recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
legenere <i>Legenere limosa</i>	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2885 feet (1 to 880 meters). Blooms Apr-Jun.	<b>Moderate Potential.</b> The Study Area contains potentially suitable vernal pools and seasonal wetland depressions which could support this species.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in April, and May, a period sufficient to identify this species. No further recommendations for this species.
pincushion navarretia <i>Navarretia myersii ssp. myersii</i>	Rank 1B.1	Vernal pools. Elevation ranges from 65 to 1085 feet (20 to 330 meters). Blooms Apr-May.	<b>High Potential.</b> The Study Area contains potentially suitable seasonal wetland depressions and vernal pools which could support this species, and there are several documented occurrences within 5 miles of the Study Area.	<b>Not Present.</b> However, this species was not observed in the Study Area despite being observed in full bloom on May 15, 2019 at a documented reference site less than 5 miles from the Study Area. This species was not observed during site-wide protocol-level surveys in April, and May, a period sufficient to identify this species. No further recommendations for this species.
Patterson's navarretia <i>Navarretia paradoxiclara</i>	Rank 1B.3	Meadows and seeps. Open, seasonally wet areas, meadows, serpentine soils. Elevation ranges from 490 to 1410 feet (150 to 430 meters). Blooms May-Jun(Jul).	<b>Unlikely.</b> The Study Area lacks serpentine soils and seeps known to support this species.	<b>Not Present.</b> No further actions recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
<b>Plants</b>				
Sacramento Orcutt grass <i>Orcuttia viscida</i>	FE, SE, Rank 1B.1	Vernal pools. Elevation ranges from 95 to 330 feet (30 to 100 meters). Blooms Apr-Jul(Sep).	<b>No Potential.</b> The Study Area lacks large, intact, high quality vernal pools with sufficient depth to support this species. This species is only known from Sacramento County (CDFW 2019).	<b>Not Present.</b> No further actions recommended for this species.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	<b>Moderate Potential.</b> The Study Area contains potentially suitable shallow freshwater habitat (quarry ponds) which could support this species.	<b>Not Present.</b> This species was not observed during site-wide protocol-level surveys in May, and July, a period sufficient to identify this species. No further recommendations for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>MAMMALS</b>				
pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and also hollow trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Moderate Potential.</b> The Study Area has areas that are likely to be suitable for pallid bats including rock crevices and potentially some tree cavities. Suitable foraging habitat and adequate water are available within the Study Area.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, WBWG High	Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g. along streams.	<b>Moderate Potential.</b> The Study Area has areas that are likely to be suitable for big-eared bats including rock crevices. Suitable foraging habitat and adequate water are available within the Study Area.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western mastiff bat	SSC, WBWG High	In California this species roosts at elevations up to 4,600 feet where significant rock features are present (WBWG 2018). Mastiff bat roosts are primarily located high on cliffs under exfoliating rock slabs, but have also been found in similar crevices in large boulders and buildings. This species forages in groups high above the ground in broad, open areas and is most often found in desert washes, flood plains, chaparral, oak woodland, open pine forest, grasslands, and agricultural areas (WBWG 2018).	<b>Unlikely.</b> The Project Area lacks the large rock cliffs, outcroppings or other features that are suitable roosting habitat for mastiff bats. This species has the potential to be detected foraging or flying over the area, but is unlikely to be impacted by the proposed Project.	No further actions are recommended for this species.



SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
ringtail (ring-tailed cat) <i>Bassariscus astutus</i>	CFP	Widely distributed throughout most of California; absent from some portions of the Central Valley and northeastern California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. elevation. Typically uses cliffs or large trees for shelter.	<b>Unlikely.</b> The Project Area is within the documented range of ringtail, but no evidence of ringtail was observed during the WRA site assessment or any previous Study. No occurrences of ringtail are documented within 10-miles of the Project Area.	No further actions are recommended for this species.
riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	FE, SE, RP	Riparian areas on the San Joaquin River in northern Stanislaus County. Dense thickets of wild rose, willows, and blackberries.	<b>No Potential.</b> The Study Area is outside the known range of this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<p>American badger <i>Taxidea taxus</i></p>	<p>SSC</p>	<p>Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.</p>	<p><b>Unlikely.</b> The Project Area is within the range of Badger, and the habitat and soils are suitable, however no evidence of badger was documented during the WRA site assessment or any previous study. No occurrences of badger are documented within 10-miles of the Project Area.</p>	<p>No further actions are recommended for this species.</p>

<b>BIRDS</b>				
golden eagle <i>Aquila chrysaetos</i>	CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	<b>Moderate Potential.</b> Some adequate nesting habitat is present in the Study Area. No evidence of a substantial prey base to support golden eagles was observed during the site visits. No evidence of eagle nests were observed during the site visit.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.
Swainson's hawk <i>Buteo swainsoni</i>	ST	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	<b>High Potential.</b> Study Area contains open areas as well as trees suitable for nesting. Nearby foraging habitat is suitable.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.

<p>white-tailed kite <i>Elanus leucurus</i></p>	<p>CFP</p>	<p>Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.</p>	<p><b>High Potential.</b> Suitable foraging and nesting habitat are present in and near the Study Area.</p>	<p>See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.</p>
<p>bald eagle <i>Haliaeetus leucocephalus</i></p>	<p>FD, SE</p>	<p>Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.</p>	<p><b>Unlikely.</b> The Project Area lacks a suitable prey base to support a resident bird or breeding pair, and no large stick nests have been observed during the WRA site survey, or previous surveys. This species may be seen flying over or occasionally foraging.</p>	<p>No further actions are recommended for this species.</p>
<p>western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i></p>	<p>FT, SE</p>	<p>Summer resident, breeding in dense riparian forests and jungles, typically with early successional vegetation present. Utilizes densely foliated deciduous trees and shrubs. Eats mostly caterpillars. Current breeding distribution within California very restricted.</p>	<p><b>No Potential.</b> Species breeds only in specific riparian areas along the Sacramento River; these areas are not contained within the Study Area.</p>	<p>No further actions are recommended for this species.</p>

<p>burrowing owl <i>Athene cunicularia</i></p>	<p>SSC</p>	<p>Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.</p>	<p><b>Moderate Potential.</b> Ground squirrel activity on the Study Area was minimal, with the exception of areas in direct proximity to rock outcroppings. Though habitat is not widespread, active burrow areas could provide refugia for wintering or breeding burrowing owl.</p>	<p>See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.</p>
<p>black swift <i>Cypseloides niger</i></p>	<p>SSC</p>	<p>Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas.</p>	<p><b>No Potential.</b> This species does not occur in the valley or low foothills and no nesting has been documented near the Study Area.</p>	<p>No further actions are recommended for this species.</p>

<p>loggerhead shrike <i>Lanius ludovicianus</i></p>	<p>SSC</p>	<p>Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.</p>	<p><b>High Potential.</b> The habitat in the Study Area is sufficiently open to support both foraging and nesting of this species. Several lone trees additionally possess very dense canopies to conceal nest structures.</p>	<p>See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.</p>
<p>bank swallow <i>Riparia riparia</i></p>	<p>ST</p>	<p>Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.</p>	<p><b>No Potential.</b> The Study Area is outside the documented breeding range for this species.</p>	<p>No further actions are recommended for this species.</p>

<p>(Brester's) yellow warbler <i>Setophaga (= Dendroica) petechia brewsteri</i></p>	<p>SSC</p>	<p>Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.</p>	<p><b>Unlikely.</b> The Study Area lacks the willow riparian habitat to support nesting. This species may occur as a migrant or foraging associated with the ponds on-site.</p>	<p>No further actions are recommended for this species.</p>
<p>San Francisco common yellowthroat <i>Geothlypis trichas sinuosa</i></p>	<p>SSC</p>	<p>Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.</p>	<p><b>No Potential.</b> The Study Area is outside the species' documented breeding range.</p>	<p>No further actions are recommended for this species.</p>
<p>yellow-breasted chat <i>Icteria virens</i></p>	<p>SSC</p>	<p>Summer resident, occurring in riparian areas along stream courses with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape.</p>	<p><b>Unlikely.</b> This species is associated with riparian areas along stream courses. The Study Area does not contain this habitat.</p>	<p>No further actions are recommended for this species.</p>

grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	<b>Moderate Potential.</b> This species may occur and breed in the Study Area, though most of the grassland habitat is close to forest or frequently disturbed by passing vehicles.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.
song sparrow – “Modesto Population” <i>Melospiza melodia mailliardi</i>	SSC	Restricted to the Sacramento and extreme northern San Joaquin Valleys from Colusa County south to Stanislaus County. Associated with woody riparian habitat and freshwater marshes.	<b>Unlikely.</b> The Study Area is outside of the documented range of occurrence for this species	No further actions are recommended for this species.
tricolored blackbird <i>Agelaius tricolor</i>	ST, RP	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	<b>High Potential.</b> Numerous breeding occurrences are documented within 5-miles of the Project Area in similar habitats as those that occur on-site.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.



AMPHIBIANS			
western spadefoot <i>Spea (=Scaphiopus) hammondi</i>	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying.	<p><b>Moderate Potential.</b> Ephemeral wetland features are present on the Study Area that could provide breeding habitat for this species. Adjacent grasslands as well as temporal drainages on the Study Area may also provide suitable upland habitat.</p> <p>See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.</p>

<p>California tiger salamander <i>Ambystoma californiense</i></p>	<p>FE/FT, ST, RP</p>	<p>Threatened in most of its range. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs primarily in vernal pools and other seasonal water features.</p>	<p><b>Moderate Potential.</b> Some suitable upland refugia exists in the Study Area and nearby occurrences have been documented within 2 miles (CDFW 2018). Studies of aquatic habitats in the Study Area failed to detect occupied aquatic habitat within 1.24 miles of the Study Area, but have not been recently updated (Vollmar 2011). Some quarry ponds on the Study Area were additionally not surveyed and provide perennial standing water that could constitute breeding habitat for this species.</p>	<p>See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.</p>
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<p>California red-legged frog <i>Rana draytonii</i></p>	<p>FT, SSC, RP</p>	<p>Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.</p>	<p><b>Unlikely.</b> The only documented occurrence in the CNDDDB for Amador County is more than 15 miles from the Study Area, from 1942 (CDFW 2018). The nearest likely extant population is more than 15 miles away, in Calaveras County. Habitat in the Study Area is infested with bullfrogs and may contain predatory fish.</p>	<p>No further actions are recommended for this species.</p>
<p>foothill yellow-legged frog <i>Rana boylei</i></p>	<p>SC, SSC</p>	<p>Found in or adjacent to rocky streams in a variety of habitats. Prefers partly shaded, shallow streams with a rocky substrate.</p>	<p><b>No Potential.</b> The Study Area does not contain streams with rocky substrates. Streams within the Study Area only contain water immediately after rain and mostly lack bed and bank features.</p>	<p>No further actions are recommended for this species.</p>

REPTILES				
Western pond turtle <i>Actinemys marmorata</i>	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	<b>Moderate Potential.</b> Suitable habitat for pond turtles exists in the aquatic features present in the Study Area. The presence of bullfrogs is likely to severely curtail recruitment, but they do not preclude the species from being present entirely.	See section 8.1.2 for a discussion of mitigation measures to reduce level of impact to less than significant.
giant garter snake <i>Thamnophis gigas</i>	FT, ST, RP	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	<b>No Potential.</b> Perennial water features in the Study Area are deep and man-made. They have no connectivity to source populations that this species could have dispersed from to access the Study Area.	No further actions are recommended for this species.
FISHES				

<p>steelhead - central valley DPS <i>Oncorhynchus mykiss irideus</i></p>	<p>FT, NMFS</p>	<p>Includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Preferred spawning habitat is in cool to cold perennial streams with high dissolved oxygen levels and fast flowing water. Abundant riffle areas for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.</p>	<p><b>No Potential.</b> The Study Area does not contain riverine habitat necessary to support this species.</p>	<p>No further actions are recommended for this species.</p>
<p>Delta smelt <i>Hypomesus transpacificus</i></p>	<p>FT, SE, RP</p>	<p>Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities &gt; 10 ppt; most often at salinities &lt; 2 ppt.</p>	<p><b>No Potential.</b> The Study Area does not contain estuarine habitat necessary to support this species.</p>	<p>No further actions are recommended for this species.</p>

INVERTEBRATES				
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT, RP	Occurs only in the central valley of California, in association with blue elderberry ( <i>Sambucus</i> sp.). Prefers to lay eggs in elderberry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	<b>Unlikely.</b> Only one <i>Sambucus</i> sp was observed on the Study Area, and it was too small (<2" DBH) to support this species. No evidence of species present was observed on this shrub.	No further actions are recommended for this species.
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, RP	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	<b>Moderate Potential.</b> Though the surrounding area was surveyed for VPB in 2010, vernal pools delineated during the 2019 site visit were not specifically assessed (Vollmar 2011). As such, though no documented occurrences exist on the Study Area, this species may be present in suitable vernal pool areas.	See section 5.2 for a discussion of listed branchiopods on the site.
vernal pool tadpole shrimp <i>Lepidurus packardi</i>	FE, RP	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	<b>Moderate Potential.</b> Though the surrounding area was surveyed for VPB in 2010, vernal pools delineated during the 2019 site visit were not specifically assessed (Vollmar 2011). As such, though no documented occurrences exist on the Study Area, this species may be present in suitable vernal pool areas.	See section 5.2 for a discussion of listed branchiopods on the site.

conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE, RP	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	<b>Unlikely.</b> The suitable habitat in the Study Area was surveyed for vernal pool crustaceans in 2010 and this species was not detected (Vollmar 2011). Furthermore, no critical habitat is present nearby, and no occurrences of this species are documented nearby in the CNDDDB (CDFW 2019).	No further actions are recommended for this species.
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**\* Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
ST	State Threatened
SSC	Species of Special Concern
California Rare Plant Rank (CRPR)	
Rank 1A	CRPR 1A: Plants presumed extinct in California
Rank 1B	CRPR 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CRPR 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CRPR 3: Plants about which CNPS needs more information (a review list)
Rank 4	CRPR 4: Plants of limited distribution (a watch list)
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

**\*\*Potential to Occur:**

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

APPENDIX D  
SITE PHOTOGRAPHS





Photograph 1. Vernal pool dominated by Fremont's goldfields (*Lasthenia fremontii*) in the north-central portion of the Study Area. The vernal pool is surrounded by non-native annual grassland, seen in the middleground. The northern edge of the Quarry pit is shown in the background. Photograph taken April 17, 2019. Photo direction is south.



Photograph 2. Seasonal wetland dominated by Italian ryegrass (*Festuca perennis*) in the north-central portion of the Study Area. Upland non-native annual grasslands and blue oak woodland are seen in the background. Photograph taken May 15, 2019. Photo direction is northeast.



Photograph 3. Photograph depicting an ephemeral stream in the northeastern portion of the Study Area. The ephemeral stream, which was dry during the site visits, flows through blue oak woodland dominated by blue oak (*Quercus douglasii*) and is shown as a 'blue line' stream on the lone and Irish Hill USGS 7.5-minute Quadrangle maps. Photograph taken May 14, 2019.



Photograph 4. Potentially jurisdictional pond in the north-central portion of the Study Area. This feature appeared to be originally man-made, but is not in active use, and may be considered jurisdictional. Photograph taken September 13, 2018.



Photograph 5. Non-jurisdictional man-made detention basin (quarry pond) located in the northwest corner of the Study Area. Photograph taken September 13, 2018.



Photograph 6. Non-jurisdictional mining-related drainage ditch located in the southwest portion of the Study Area. This feature terminates in a non-jurisdictional detention basin. Photograph taken May 16, 2019.



Photograph 7. Photograph depicting the existing quarry pit, included in the developed biological community. Photograph taken May 15, 2019.