# APPENDIX C
# Biological Resources

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# Attachment B
# Biological Resource Report

# Biological Resources Assessment

## HANSON PERMANENTE QUARRY
## SANTA CLARA COUNTY, CALIFORNIA

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**Date:**
December 2006

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## APPENDICES

## 1.0 INTRODUCTION

On September 28, 2006, WRA, Inc. performed an assessment of biological resources on approximately 917 acres of Hanson Permanente Quarry property, in Santa Clara County, California (Figure 1). The purpose of the assessment was to gather information necessary to complete a review of biological resources in the Project Area where a quarry reclamation plan modification is proposed.

This report describes the results of the site visit, which assessed the Project Area for the (1) presence of special status species; (2) potential to support special status species; and (3) presence of other sensitive biological resources protected by local, state, and federal laws and regulations.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological resources assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol 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 date of the site visit.

### 1.1 General Project Area Description

The Project Area is located north of Monte Bello Ridge, approximately ½ mile west of Rancho San Antonio County Park, at the west end of Permanente Road, approximately 4 miles west of downtown Cupertino in Santa Clara County. The Project Area elevation ranges from 600 to over 1900 feet above sea level.

The Project Area is characterized as an actively operating quarry consisting of mining facilities and structures, including an open quarry pit in the center of the area, material storage fill areas to the east and west of the active pit and an operational rock plant in the southeast corner. Additionally, approximately 172 acres of Buffer Area lands surrounding the active quarry are included in the Project Area. Most of the Buffer Area lands within the Project Area are not currently intended to be part of the quarry operations, but are included to act as a buffer between active areas and areas outside of the reclamation plan modification. Some Buffer Areas were also included due to “squaring off” of the reclamation plan boundaries at parcel boundaries for staking and monitoring purposes.

## 2.0 METHODS

On September 28, 2006, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats are present. For those areas that were inaccessible, inspection was conducted using aerial photographs and referencing to areas observed on foot.

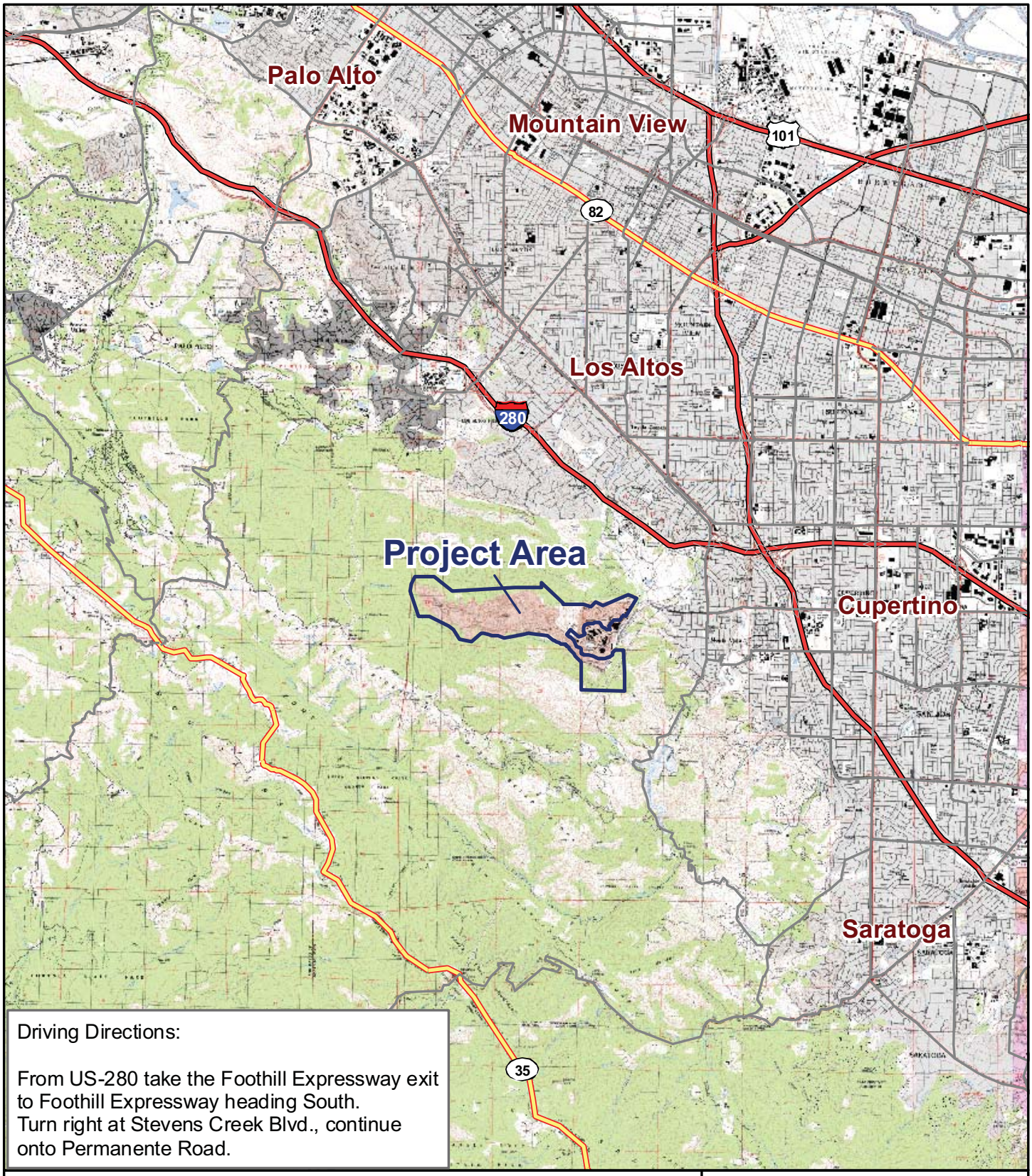


Figure 1. Location Map

Santa Clara County, CA

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Miles

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Date: December 2006
Basemap: USGS Topo Quad
Map By: Michael Rochelle
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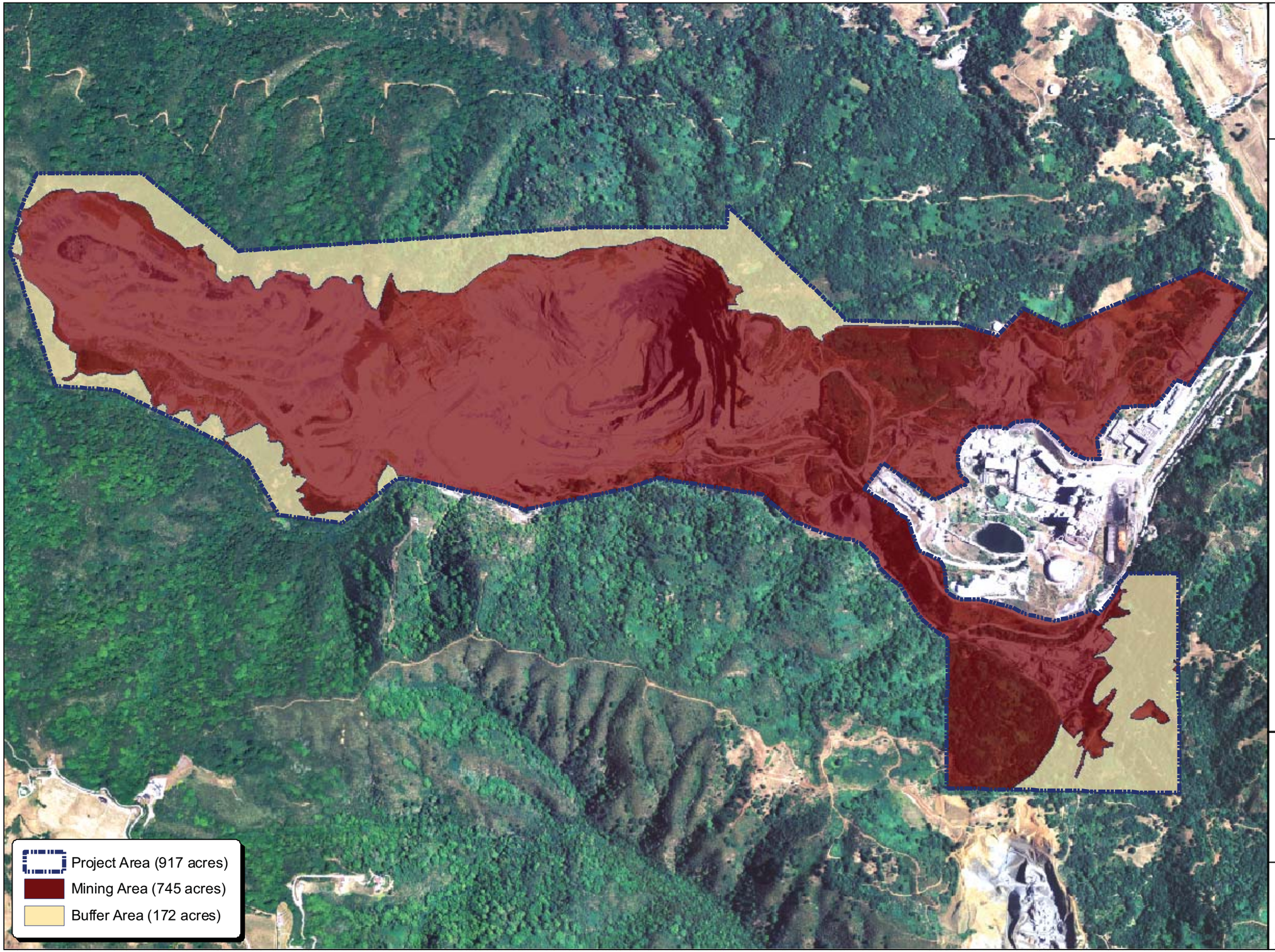


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Santa Clara County, California

Figure 2.

Biological Assessment Areas

0 500 1,000 2,000
Feet

Date: December 2006
Map By: Michael Rochelle

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## 2.1 Biological Communities

Prior to the site visit, the Soil Survey of the Santa Clara Area, California [U.S. Department of Agriculture (USDA) 1941], the US Fish and Wildlife Service (USFWS) National Wetland Inventory, and USDA aerial photos were examined to determine if any unique soil types, vegetative features, and/or aquatic features that could support sensitive plant communities 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). 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. Figure 3 shows the general location and extent of the biological communities observed in the Project Area. See Appendix B for representative site photographs of the observed plant communities.

## 2.2 Sensitive Plant Communities and Aquatic Features

Biological communities identified within the Project Area were evaluated to determine if they are considered sensitive or non-sensitive as defined by the California Environmental Quality Act (CEQA) and other applicable laws and regulations.

### *2.2.1 Wetlands and Waters*

Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Fish and Wildlife Service List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual and Field Indicators of Hydric Soils in the United States (NRCS, 2002).

### *2.2.2 Riparian Habitat*

An inspection was conducted to determine if the banks of drainages, streams and other aquatic features within the Project Area supported hydrophytic or stream-dependent woody plant species (riparian species). Streams supporting riparian vegetation were noted and the area of the riparian habitat was estimated and mapped using ArcGIS software.

### *2.2.3 Other Sensitive Biological Communities*

The Project Area was evaluated for the presence of other sensitive biological communities recognized by the California Department of Fish and Game (CDFG) or other local or regional ordinances. If present in the Project Area, these sensitive biological communities were mapped and are described in Section 3.1.2 below.

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

## 2.3 Special Status Species

### *2.3.1 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 Cupertino and Mindego Hill 7.5 minute USGS quadrangles and the eight surrounding USGS quadrangles. 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:

- California Natural Diversity Database records (CNDDB) (CDFG September 2006)
- USFWS quadrangle species lists (USFWS September 2006)
- CNPS Electronic Inventory records (CNPS September 2006)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings 1994)
- A Field Guide to Western Reptiles and Amphibians (Stebbins, R.C. 2003)
- CDFG CalFish ArcIMS Fish Distribution Mapping Tool and Fish Passage Assessment Database (CDFG September 2006)
- National Oceanic and Atmospheric Administration NMFS Distribution Maps for California Salmonid Species (1999)

### *2.3.2 Site Assessment*

A site visit was made to the Project Area to search for suitable habitats for species identified in the literature review as occurring in the vicinity. The potential for each special status species to occur in the Project Area was then evaluated according to the following criteria:

1) 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).

2) 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.

3) 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.

4) 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.

5) Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

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Santa Clara County, California

Figure 3.

Biological Communities

Project Area (917 acres)
Permanente Creek
Ephemeral Drainage
Settling Ponds and Operational Water Ponds (1.7 acres)
Chaparral/ Oak Woodlands (249.5 acres)
Riparian Corridor (4.0 acres)
Revegetated Areas (64.1 acres)
Ruderal Hillside (138.0 acres)
Fully Disturbed Areas (459.5 acres)

N

0 500 1,000 2,000
Feet

Date: December 2006
Map By: Michael Rochelle

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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 and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the site visit, its presence will be recorded and discussed. Appendix A presents the evaluation of potential for occurrence of each special status plant and wildlife species known to occur in the vicinity of the Project Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above.

## 3.0 RESULTS

The following sections present the results of the biological resources assessment for special status species, sensitive plant communities and aquatic features within the Project Area. The Project Area has been divided into two distinct sections for the purposes of this assessment, an approximately 745-acre Mining Area, and a smaller, approximately 172-acre area, referred to as the Buffer Area (Figure 2).

Most of the Project Area consisting of an active quarry has been significantly altered from its native state. An unpaved road separates the southern boundary of the Project Area from Permanente Creek, except for an approximately 4.0-acre area where Permanente Creek enters the Project Area in the southeast section of the Project Area.

The Mining Area is primarily situated upon four soil series: Soper series gravelly loam, Los Gatos clay loam, Los Gatos-Maymen complex, and Permanente stony soils, however the native soils have been disturbed by quarry activities for decades. An unmined area located on a hilltop directly east of the quarry office in the central portion of the Project Area contains evidence of historic human disturbance including degrading pavement, a small grove of plum trees, and numerous piles of rubbish materials of unknown origin.

The Buffer Area is comprised of various perimeter areas around the edges of the active quarry that have not been significantly disturbed from their native state by quarry activities. These areas are comprised primarily of steep, densely vegetated oak woodland and chaparral slopes (~1000' to 1900' elevation), occasionally interspersed with ruderal vegetation. Soils in these regions are mapped exclusively as Permanente series, stony soils, 50+ percent slopes. No future mining activities are proposed in the Buffer Area.

### 3.1 Biological Communities

Seven distinct biological communities are located in the Project Area: 1) ruderal hillslopes, 2) Northern Mixed Chaparral / Coast Live Oak Woodland, 3) riparian corridor, 4) revegetated areas, 5) fully disturbed areas, 6) settling ponds and operational water ponds, and 7) ephemeral drainages. Their general locations and extent are shown on the Biological Communities Map (Figure 3).

#### *3.1.1 Non-Sensitive Biological Communities*

**Ruderal Hillslopes** - Areas of the Project Area that were disturbed historically, but have been idle for a period long enough to encourage establishment of plant cover or have been hydroseeded in the past for erosion control and support a sparse cover of grass and shrub

vegetation are considered ruderal hillslopes. Generally these areas are steeper slopes along roadsides, and the southeastern border of the Project Area that have become vegetated with weedy plant species including yellow star thistle (*Centaurea solstitialis*), black mustard (*Brassica nigra*), scarlet bugler (*Penstemon centranthifolius*), wild oats (*Avena* spp.), brome grass (*Bromus* spp.),rose clover (*Trifolium hirtum*), and some volunteer native shrub species including coyote brush (*Baccharis pilularis*), chamise (*Adenostoma fasciculatum*), and California sagebrush (*Artemisia californica*).

**Revegetated Areas** - Revegetated areas are historically disturbed slopes that have been graded to a final contour, hydroseeded with native grass species, and often planted at a low to moderate density with native shrubs and trees including coyote brush, chamise, and oaks from locally collected cuttings and acorns. Irrigation has been applied to some revegetated areas to encourage the establishment of planted trees and shrubs, and protective cages have been installed around most plantings to reduce damage from deer browsing. Generally, these areas are dominated by grass species including wild oats, brome grasses, small fescue (*Vulpia microstachys*), and Italian rye-grass (*Lolium multiflorum*) with some establishment of yellow star thistle throughout the open areas.

**Fully Disturbed Areas** - Areas identified in Figure 3 as fully disturbed have been recently disturbed by quarry activities and host a very small number of weedy and/or native plant species including yellow star thistle, coyote brush, chamise, wild oats, sweet fennel (*Foeniculum vulgare*), and black mustard. Generally, plant cover in these areas is very sparse due to the lack of topsoil. The majority of the fully disturbed area was used for quarry materials storage and is a mosaic of piles of waste rock from various sources on the quarry. This community offers little habitat for plants or animals.

*3.1.2 Sensitive Plant Communities and Aquatic Features*

**Riparian Corridor** - A stretch of Permanente Creek runs through the Project Area southeast of the main cement plant near the southeastern rock washing plant. Along the riparian corridor associated with this portion of the creek, a dense overstory of mature riparian trees covers approximately 4.0 acres. Species dominant in the overstory include white alder (*Alnus rhombifolia*), willow (*Salix* spp.), bigleaf maple (*Acer macrophyllum*), madrone (*Arbutus menziesii*), and cottonwood (*Populus balsamifera* ssp. *trichocarpa*). The understory is dominated by poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*).

**Northern Mixed Chaparral / Coast Live Oak Woodland** - The Northern Mixed Chaparral / Coast Live Oak Woodland community is presumably the natural community that once dominated the Project Area. Most of the Buffer Area lands within the Project Area are described as this community type. This biological community is a mosaic of south-facing dry rocky hillslopes with sparse soil dominated by chaparral species and north-facing hillslopes and shaded ravines dominated by a mature oak-dominated canopy.

Shrub species typical of this community include mainly native species: coyote brush, scrub oak (*Quercus berberidifolia*), buckbrush (*Ceanothus cuneatus*), California sagebrush, chamise, toyon (*Heteromeles arbutifolia*), and poison oak. On north-facing slopes, typical overstory species include coast live oak, California bay (*Umbellularia californica*), and California buckeye (*Aesculus californica*), with scattered valley oak (*Q. lobata*), and blue oak (*Q. douglasii*). The brush species in the understory on north-facing slopes are typically coyote brush and poison oak.

**Ephemeral Drainages** - Ephemeral drainages were mapped based on topography. Within the Buffer Area, many small ephemeral drainages are expected to run down the steep slopes to Permanente Creek in the eastern areas, to Ohlone Creek in the southwestern areas, or to an unnamed tributary of Permanente Creek in the northwestern areas. Typically these drainages do not support an assemblage of plant species particularly adapted to wetland conditions, and probably contain flow only during the wettest winter weeks. Within the Northern Mixed Chaparral / Coast Live Oak Woodland community type, these drainages are primarily covered by a dense overstory of California bay and oak species.

**Settling Ponds and Operational Water Ponds** - Settling ponds for quarry runoff and operational water ponds were identified in the Project Area as shown in Figure 3.

## 3.2 Special Status Species

### *3.2.1 Plants*

Based upon a review of the resources and databases given in Section 2.3.1, fifty six plant species which have been given special protection status under state and federal species legislation are known to occur in the vicinity of the Project Area. These species and their likelihood of occurrence are presented in Appendix A. California Natural Diversity Database records (Figure 4) indicate that one special status plant species has been recorded onsite: caper-fruited tropidocarpum (*Tropidocarpum capparideum*), but the record presented is an approximately five-mile radius around a reported collection from 1907, which may have been misidentified. It is our belief that this species is not present in the Project Area.

Based on the reconnaissance level site visit and review of the literature, twenty-three of the fifty six listed species were determined to have the potential to occur in the Project Area due to their habitat requirements, known distribution, and the habitats provided in the Project Area. Three of these species have a moderate likelihood of being present and focused surveys during the blooming period for each are recommended to determine their presence: western leatherwood (*Dirca occidentalis*), Loma Prieta hoita (*Hoita strobilina*), and Mt. Diablo cottonweed (*Micropus amphibolus*). Due to the extent of historical disturbance in the Project Area vicinity, it is unlikely that any of these special status plants are present in the Mining Area, although some Buffer Area lands may provide suitable habitat.

Special status plant species that are most likely (high or moderate potential) to occur in the Project Area are discussed below.

**Western leatherwood (*Dirca occidentalis*). CNPS List 1B.** Western leatherwood is a deciduous shrub in the Mezereum family (Thylemaceae) that blooms from January through March and is endemic to California, specifically the San Francisco bay area. It primarily occurs on moist slopes in all types of forest or shrub- dominated communities at elevations of 50 to 395 meters. Chaparral and woodland habitats in the Buffer Area may provide suitable habitat for this species and there are several known occurrences within the vicinity of the Project Area.

**Loma Prieta hoita (*Hoita strobilina*). CNPS List 1B.** Loma Prieta hoita is a perennial herb in the pea family (Fabaceae) that blooms from May through July and is endemic to the San

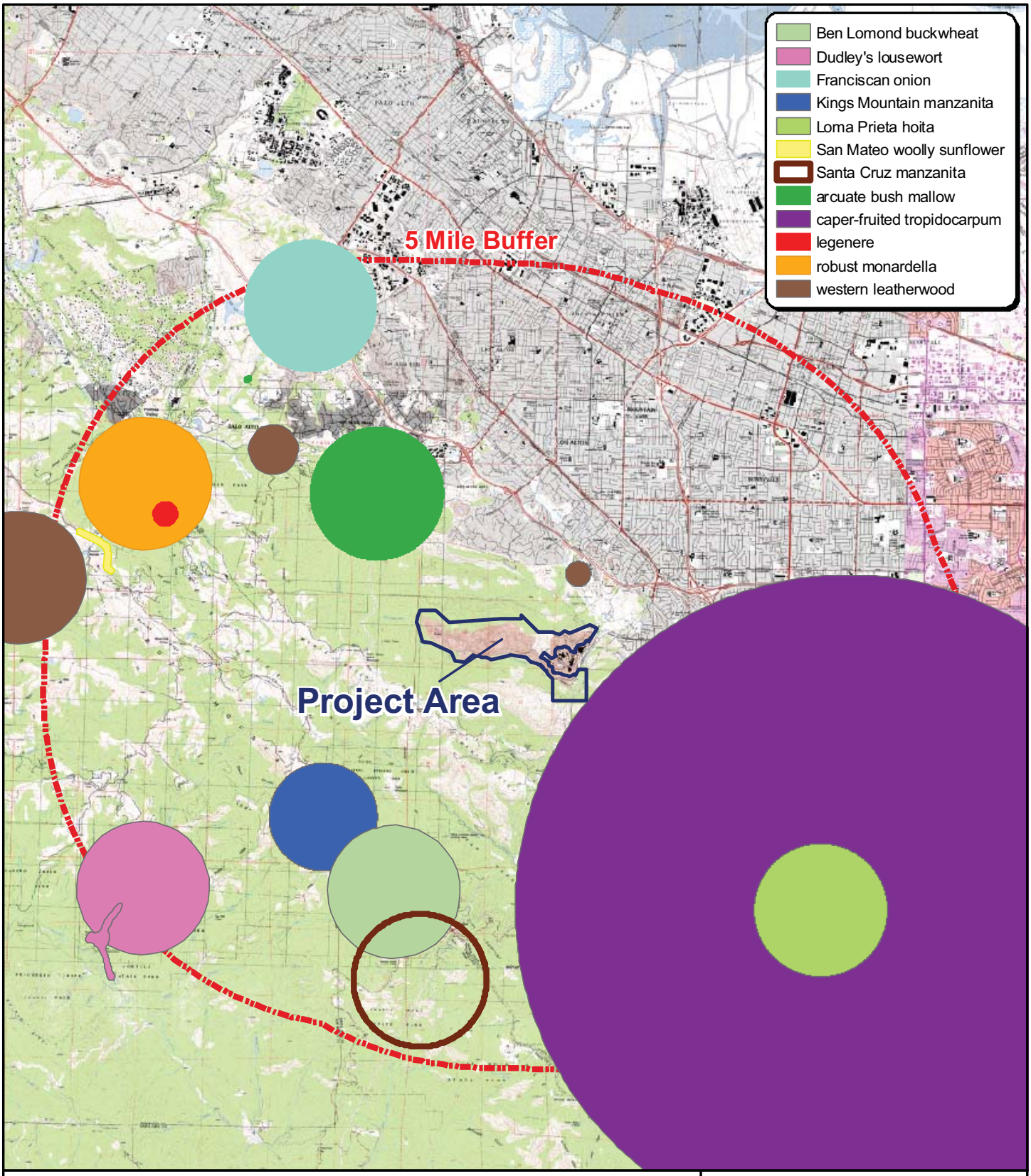


Figure 4. CNDDB Special Status Plant Occurrences Within Five Miles of Project Area

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Miles

Santa Clara County, CA

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Date: November 2006
Basemap: USGS Topo Quad
Map By: Michael Rochelle
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Francisco bay area. It primarily occurs in moist chaparral and wooded habitats at elevations ranging from 30 to 860 meters. Chaparral and wooded habitats in the Buffer Area may provide suitable habitat for this species and there are several documented occurrences in the vicinity of the Project Area.

**Mount Diablo cottonweed (*Micropus amphibolus*). CNPS List 3.** Mt. Diablo cottonweed is an annual herb in the sunflower family (Asteraceae) that blooms from March through May and is endemic to California. It occurs in grassland, chaparral, and woodlands at elevations ranging from 45 to 825 meters. Chaparral and wooded habitats in the Buffer Area may provide suitable habitat for this species and there are several documented occurrences in the vicinity of the Project Area.

*3.2.2 Wildlife*

Thirty-nine special status species of wildlife have been recorded in the vicinity of the Project Area. These species and their likelihood of occurrence are presented in Appendix A. Figure 5 shows CNDDB documented special status wildlife occurrences within five miles of the Project Area. Of these species, one is present, California red-legged frog, and no others have a high potential to occur in the Project Area. Two special status species have a moderate potential for occurrence in woodlands and/or chaparral within or immediately adjacent to the Project Area: Cooper's Hawk (*Accipiter cooperi*), and Long-eared Owl (*Asio otus*). Special status wildlife species that are present or have a moderate potential to occur in the Project Area are discussed below.

**Cooper's Hawk (*Accipiter cooperi*), CDFG Species of Special Concern; Species of Local Concern.** This hawk is associated with woodland and forest habitats throughout California. Although nest sites are usually found in isolated areas, this species frequently occurs in urban habitats in winter and during migration and has adapted to urban conditions in some portions of its range. Dense stands of live oak, riparian deciduous, or other forest habitat near water is used most frequently by this hawk. Cooper's Hawks prefer nesting in stands of deciduous trees or conifers near water.

There is a moderate potential for this raptor to occur in portions of the Project Area due to the presence of moderately-suitable foraging and breeding habitat along wooded edges in the Buffer Area, and typical nesting habitat present in mature riparian vegetation along on-site portions of Permanente Creek. This species is known to utilize habitats disturbed by human activities and may become adapted to areas affected by quarry activities where suitable vegetation is present. As the Project Area has been disturbed in its present condition for several decades, to the extent that any Cooper's Hawks nesting in or adjacent to the Project Area exist, they have likely adapted to coexist with the ongoing operations.

**Long-eared Owl (*Asio otus*), CDFG Species of Special Concern.** Nesting Long-eared Owls range from coastal lowlands to interior deserts and seem to prefer riparian groves, planted woodlots, and belts of live oaks paralleling streams (Shuford, 1993). This owl generally frequents dense, riparian and live oak thickets paralleling stream courses, and nearby woodland and forest habitats (Zeiner, et al., 1990). Long-eared Owls nest almost exclusively in old stick nests of crows, magpies, ravens, hawks, or herons.

There is a moderate potential for this owl to occur in portions of the Project Area due to the presence of moderately-suitable foraging and breeding habitat in wooded edges in the Buffer

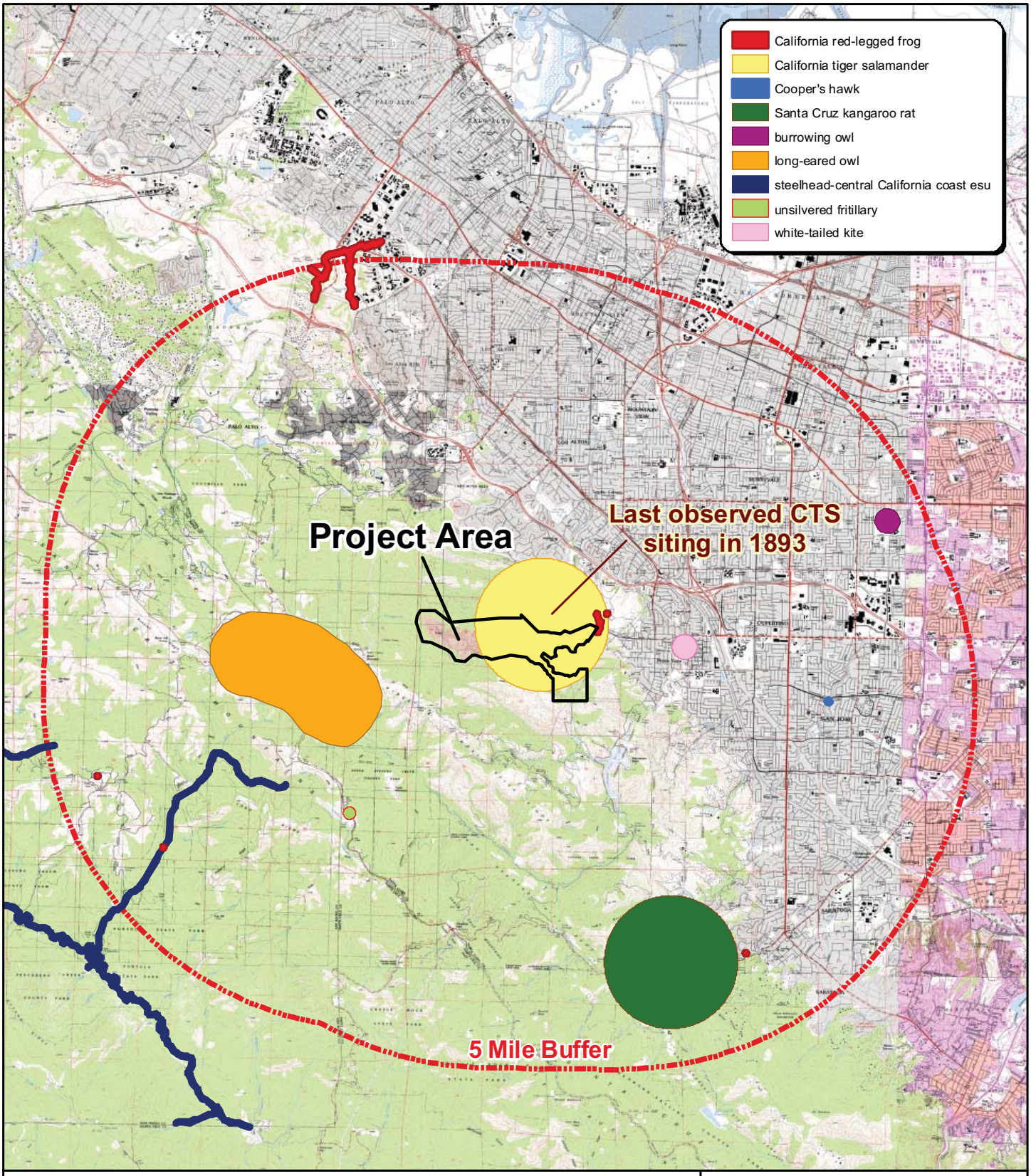


Figure 5. CNDDB Special Status Wildlife Occurences Within Five Miles of Project Area

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Miles

Santa Clara County, CA

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Date:January 2006
Basemap: USGS Topo Quad
Map By: Michael Rochelle
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Area, and typical nesting habitat present in mature riparian vegetation along on-site portions of Permanente Creek. Due to unsuitable habitat conditions, it is unlikely that this species occurs in the Mining Area. A breeding pair of Long-eared Owls was recently documented to occur on surrounding lands less than one mile west of the Project Area boundary (CNDDB 2006). Because the Project Area has been disturbed in its present condition for several decades, Long-eared Owls nesting in or adjacent to the Project Area (if any) have likely adapted to coexist with the ongoing operations.

**California red-legged frog (*Rana aurora draytonii*), Federally Threatened; CDFG Species of Special Concern.** The red-legged frog (CRLF) is a medium-sized frog with reddish-colored legs. The species is generally restricted to riparian and lacustrine habitats in California and northern Baja California. In response to a significant decrease in the historic range of the California red-legged frog, the USFWS listed the subspecies as Threatened in 1996. Red-legged frogs prefer deep, quiet pools in creeks, rivers, or lakes below 1500 meters in elevation. Habitat requirements include fresh emergent or dense riparian vegetation, especially willows adjacent to shorelines. Red-legged frogs can survive in seasonal bodies of water that are dry for short periods if a permanent water body or dense vegetation stands are nearby; rodent burrows and grasslands provide upland estivation habitat.

In 2006, in accordance with USFWS, California red-legged frog surveys were conducted by Dr. Mark Jennings at the Hanson Permanente Quarry facility. CRLF were found to inhabit Permanente Creek and four off-stream sediment settling ponds. One of these ponds, Pond 13, occurs within the Mining Area at the southern boundary of the Project Area, on the north side of Permanente Creek adjacent to a concrete weir (Jennings, 2006; See Appendix C). To our knowledge, this is the only on-site occurrence of CRLF in the Project Area. However, it is possible that other vegetated settling ponds in the vicinity of Permanente Creek may provide low quality habitat for CRLF. Additionally, moderate-quality breeding habitat may be present in the short section of Permanente Creek that runs through the southeast corner of the Project Area. This portion of the Creek is surrounded by riparian vegetation and is not proposed for any disturbance. Upland estivation habitat for CRLF within the Project Area is limited to ruderal hillside slopes and revegetated areas in the immediate vicinity of Permanente Creek (see Figure 3). CRLF are unlikely to occur in active quarry areas or in heavily disturbed habitats.

Previous habitat assessments have determined that not all portions of Permanente Creek provide suitable CRLF habitat. To prevent unintended take of an occasional CRLF that may disperse from areas of suitable aquatic habitat associated with Permanente Creek, it is recommended that exclusionary fencing be installed where practicable and if surveys or assessments indicate a significant risk of dispersal. With implementation of this measure, the likelihood of unintended take or impacts to existing habitat are minimal.

All of the wildlife observed in the Project Area during the site visit on September 28, 2006 are commonly found species, and many are adapted to occupying disturbed or urban areas. No special status wildlife species were observed.

## 4.0 CONCLUSIONS

Three sensitive communities or categories of aquatic features were identified within the Project Area (riparian habitat, Northern Mixed Chaparral / Coast Live Oak Woodland, settling ponds / operational water ponds and ephemeral drainages). Three special status plant species (western leatherwood, Loma Prieta hoita, and Mt. Diablo cottonweed) and two special status

wildlife species (Cooper's Hawk, and Long-eared Owl) have a moderate potential to occur within or immediately adjacent to the Project Area. California red-legged frog is known to utilize one settling pond located along the southern boundary of the Project Area.

## 4.1 Biological Communities

Most of the Mining Area is heavily disturbed with little vegetation present. Revegetation efforts have successfully covered a number of acres protecting the surface from erosion and promoting establishment of native vegetation. Revegetation is scheduled to continue as described in the Reclamation Plan Amendment. In addition to these non-sensitive communities, riparian habitat, Northern Mixed Chaparral / Coast Live Oak Woodland, and several man-made aquatic features are present.

## 4.2 Sensitive Plant Communities and Aquatic Features

Sensitive plant communities present within the Project Area include settling ponds and operational water ponds, riparian habitat with associated creek channel, and Northern Mixed Chaparral / Coast Live Oak Woodland habitat with ephemeral drainages.

### *4.2.1 Settling Ponds and Other Aquatic Features*

A stretch of Permanente Creek, and ephemeral drainages in the Buffer Area may provide habitat for sensitive local plants and animals and may be considered sensitive communities by state and local authorities. One settling pond located along the southeastern boundary of the Project Area adjacent to Permanente Creek has been documented to support California red-legged frog.

### *4.2.2 Riparian Habitat*

4.0 acres of the Project Area meets the definition of "riparian habitat" as described in the Fish and Game Code and the California Code of Regulations.

### *4.2.3 Oak Woodland*

Northern Mixed Chaparral / Coast Live Oak Woodland plant communities are present within the Project Area primarily in the Buffer Area. This community may provide suitable habitat for three special status plant species: Loma Prieta hoita, western leatherwood, and Mt. Diablo cottonweed however no special status species were observed on site during this biological resources assessment.

## 4.3 Wildlife

Suitable habitat is present for several special status and non-status species in the Buffer Area and in the small portion of Permanente Creek running through the southeast corner of the Project Area. Two special status wildlife species have a moderate potential to occur in Project Area detention ponds, or in portions of Permanente Creek within the Project Area or immediately adjacent to it, and one species has been documented to occur (California red-legged frog).

### *4.3.1 Avian Species*

Special status bird species with a moderate potential to occur within the Project Area include: Cooper's Hawk and Long-eared Owl. Mature trees are an important habitat requirement for birds. Breeding birds may occur within Buffer Area lands and in wooded habitats within the Project Area, including Northern Mixed Chaparral / Coast Live Oak Woodland habitats adjacent to or within the Mining Area. The Project Area has been disturbed in its present condition for several decades, to the extent that any hawks or owls occurring in or adjacent to the Project Area have adapted to coexist with the ongoing operations.

### *4.3.2 Amphibians*

Limited suitable habitat is present within the Project Area for California red-legged frog (*Rana aurora draytonii*). Potential habitat is limited to vegetated banks of Permanente Creek outside of active quarry operations areas and one settling pond, approximately 10 meters in diameter, located along the southern boundary of the Project Area on the north side of Permanente Creek adjacent to a concrete weir (Jennings, 2006). To our knowledge, this is the only on-site occurrence of CRLF within the Project Area. Future quarry expansion in the southeast section of the Project Area in the vicinity of the Rock Plant is unlikely to affect any CRLF potentially occurring in Pond 13, as identified in the Jennings report (2006, Appendix C).

During winter rains, CRLF tend to disperse into uplands adjacent to aquatic habitats to forage. To prevent unintended take of an occasional CRLF that may disperse into the Project Area from Permanente Creek, it is recommended that exclusionary fencing be installed where practicable and if surveys or assessments indicate a significant risk of dispersal. With implementation of this measure, the likelihood of unintended take or impacts to existing habitat are minimal.

## 5.0 REFERENCES


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## APPENDIX A. Potential for Special Species to Occur in the Project Area

Appendix A. Potential for Special Status Plant and Wildlife Species to Occur in the Project Area. List compiled from the California Department of Fish and Game (CDFG) Natural Diversity Database (September 2006), U.S. Fish and Wildlife Service (USFWS) Species Lists, and California Native Plant Society (CNPS) Electronic Inventory search of the Cupertino, Castle Rock Ridge, Big Basin, Milpitas, San Jose West, Los Gatos, Mountain View, Palo Alto, and Mindego Hill USGS 7.5' quadrangles, and a review of other CDFG lists and publications (Jennings and Hayes 1994, Zeiner et al. 1990).

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| **Mammals** | | | |
| salt-marsh wandering shrew<br>*Sorex vagrans halicoetes* | CSC | Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among *Salicornia*. | **Not Present.** No suitable habitat is available in the Project Area or vicinity. |
| pallid bat<br>*Antrozous pallidus* | CSC, WBWG | Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Sensitive to disturbance of roosting sites. | **Unlikely.** Suitable roost habitat is limited to Buffer areas. Disturbance associated with the quarry may preclude the presence of this species. |
| Townsend's big-eared bat<br>*Corynorhinus townsendii* | CSC, WBWG | Live in a wide variety of habitats but most common in mesic sites. Day roosts highly associated with caves and mines. Need appropriate roosting, maternity, and hibernacula sites free from human disturbance. | **Unlikely.** Suitable roost habitat is limited to Buffer areas. Disturbance associated with the quarry may preclude the presence of this species. |
| salt-marsh harvest mouse<br>*Reithrodontomys raviventris* | FE, SE, CFP | Found only in the saline emergent wetlands of San Francisco bay and its tributaries. Primary habitat is pickleweed-dominated, saline emergent marshes. Requires adjacent, upland areas for escape from high tides. Does not burrow. | **Not Present.** No suitable habitat is available in the Project Area or vicinity. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| San Joaquin kit fox<br>*Vulpes macrotis mutica* | FE, ST, RP | Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base. | **Not Present.** Suitable habitat is not available within the Project Area. Project Area is outside of the typical range and lowland habitat associated with the this species. |
| American badger<br>*Taxidea taxus* | CSC | 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. | **Unlikely.** Suitable borrowing and foraging habitat is available in the Buffer areas. Prey species and other small mammals are present on site. Suitable habitat is not available within the quarry. |
| **Birds** | | | |
| Cooper's Hawk<br>*Accipiter cooperii* | CSC | Associated with open or interrupted woodland and riparian habitats in the Coast ranges and foothills surrounding the Central Valley. Nests mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also nests in live oaks and eucalyptus. | **Moderate Potential**. Suitable riparian forest nesting habitat is limited to the fragmented portion of Permanente Creek that runs through the Project Area and oak woodland habitat adjacent to the quarry in the Buffer areas. Recent documented occurrence within 4 miles of the Project Area (CNDDB 2006). |
| Ferruginous Hawk<br>*Buteo regalis* | CSC, BCC | Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Prefers flat, open areas largely devoid of trees. Preys on lagomorphs, ground squirrels and mice. Population trends may follow lagomorph population cycles. | **Unlikely**. May rarely forage over the Project Area, however typical, open habitat is not present in the Project Area. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| Northern Harrier<br>*Circus cyaneus* | CSC | Nests and forages in open meadows, savannah and grassland habitats, often in association with wetlands. Nests on ground in shrubby vegetation; nest built of a large mound of sticks in wet areas. May also occur in upland desert steeps; they generally avoid forested and mountainous areas. | **Unlikely.** Typical wetland foraging habitat is not present in Buffer areas; no available nesting habitat is present in the Project Area. |
| White-tailed Kite<br>*Elanus leucurus* | CFP | Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians. | **Unlikely**. May rarely forage over the Project Area, however typical, open habitat is not present in the Project Area. Recent documented occurrence within 2 miles of the Project Area (CNDDB 2006). |
| Bald Eagle<br>*Haliaeetus leucocephalus* | FPD ,FT, SE, CFP | Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork. Shows a preference for ponderosa pine. Roosts communally in winter. | **Unlikely**. Large nesting trees and suitable, large bodies of water for foraging are not present within the Project Area. May rarely perch in large oak trees in the Buffer areas. |
| Osprey<br>*Pandion haliaetus* | CSC | (Nesting) Frequents ocean shores, bays, fresh-water lakes, and larger streams. Prefers large trees, snags and dead-topped trees near large water bodies for cover and nesting. May travel 5-6 miles from nest to fishing areas. | **Unlikely**. Large nesting trees and suitable, large bodies of water for foraging are not present within the Project Area. May rarely perch in large oak trees in the Buffer areas. |
| American Peregrine Falcon<br>*Falco peregrinus anatum* | FD, SE, BCC, CFP, | (Nesting) Prefers dry, open terrain, either level or hilly. Forages far afield, even to marshlands and ocean shores. Nests near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site. | **Unlikely**. May rarely forage over the Project Area, however typical, nesting habitat is not present in the Project Area. Disturbance associated with the quarry may preclude the presence of this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| Black Rail<br>*Laterallus jamaicensis coturniculus* | ST, CFP | Rarely seen resident of saline, brackish, and fresh water emergent wetlands of the San Francisco Bay area. Nests in dense stands of pickleweed. | **Not Present.** No suitable habitat is available in the Project Area or vicinity. |
| California Clapper Rail<br>*Rallus longirostris obsoletus* | FE, SE | Found in tidal salt marshes of the San Francisco Bay area. Requires mud flats for foraging and dense vegetation on higher ground for nesting. | **Not Present.** No suitable habitat is available in the Project Area or vicinity. |
| Western Snowy Plover<br>*Charadrius alexandrinus nivosus* | FT, CSC, BCC, RP | (Nesting) Federal listing applies only to the Pacific coastal population. Found on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting. | **Not Present.** No suitable habitat is available in the Project Area or vicinity. |
| California Least Tern<br>*Sterna (Sternula) antillarum browni* | FE, SE, CFP | (Nesting) Nests along the coast from San Francisco Bay south to northern Baja California. Breeding colonies in San Francisco Bay found in abandoned salt ponds and along estuarine shores. Colonial breeder on barren or sparsely vegetated, flat substrates near water. | **Not Present.** No suitable nesting habitat is available in the Project Area or vicinity. |
| Marbled Murrelet<br>*Brachyramphus marmoratus* | FT, SE | (Nesting) Feeds near shore; nests inland along the Pacific coast from Eureka to the Oregon border, and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland. Nests often built in Douglas-fir or redwood stands containing platform-like branches. | **Not Present.** No suitable nesting habitat is available in the Project Area or vicinity. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| Long-eared Owl<br>*Asio otus* | CSC | Nests in mature riparian bottomlands with willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding. | **Moderate Potential.** Suitable oak woodland habitat is present in the Buffer areas and in fragmented riparian corridors of Permanente Creek occurring within and adjacent to the Project Area. Recent documented occurrence within 2 miles of the Project Area (CNDDB 2006). |
| Burrowing Owl<br>*Athene cunicularia* | CSC, BCC | Frequents open, dry annual or perennial grasslands and scrub habitats with low-growing vegetation, perches and abundant burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Subterranean nester; nests and roosts in old burrows of small mammals. | **Unlikely**. Project Area is steeply sloped and dominated by rocky soil and erosion associated with active quarrying activities. Buffer areas are steeply sloped and densely vegetated and do not provide suitable habitat for this species. One documented occurrence within 5 miles of the Project Area (CNDDB 2006). |
| Loggerhead Shrike<br>*Lanius ludovicianus* | CSC, BCC | Occurs in woodland, grassland, savannah, pinyon-juniper forest, desert, and scrub habitats. Prefers open areas with sparse shrubs, trees, posts, and other suitable perches which to forage for large insects. Nests are well-concealed above ground in densely-foliaged shrub or tree. | **Unlikely.** Limited, low-quality foraging habitat is present in grassland portions of the Buffer areas; Trees and shrubs are present on site for nesting. Disturbance associated with the quarry may preclude the presence of this species. |
| Saltmarsh Common Yellowthroat<br>*Geothlypis trichas sinuosa* | CSC, BCC | Resident of the San Francisco Bay region, in fresh and salt water marshes. Frequents low, dense vegetation near water. Requires thick, continuous cover down to water surface for foraging, and tall grasses, tule patches, or willows for nesting. | **Unlikely.** No suitable marsh habitat is available in the Project Area. May rarely disperse through Project Area via Permanente Creek. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| Alameda Song Sparrow<br>*Melospiza melodia pusillula* | CSC, BCC | Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*. | **Not Present.** No salt marsh habitat is present in Project Area. |
| Tricolored Blackbird<br>*Agelaius tricolor* | CSC, BCC, RP | A highly colonial species, most numerous in the Central Valley and vicinity. Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs. Requires breeding habitat sufficient to support 30 nesting pairs. | **Unlikely.** Cattails, blackberries and willow thickets on site do not provide sufficient coverage for a breeding colony. |
| **Reptiles and Amphibians** | | | |
| western pond turtle<br>*Emys (Clemmys) marmorata* | CSC | Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter. | **Unlikely.** No typical aquatic habitat was observed in the Project Area, however dispersing individuals may occasionally occur in Permanente Creek and large detention ponds containing sufficient emergent vegetation within the Project Area. |
| Alameda whipsnake<br>*Masticophis lateralis euryxanthus* | FT, ST | Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge. | **Unlikely.** The Project Area does not contain typical habitat for this species within the current limits of disturbance. This species may rarely occur in upland portions of the Buffer areas. There are no CNDDB documented occurrences within 5 miles (2006). |
| Giant Garter Snake<br>*Thamnophis gigas* | FT, ST, RP | Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches in the Central Valley. This is the most aquatic of the garter snakes in California. | **Not Present.** Suitable habitat is not present within the Study Area. Study Area is outside of the Central Valley floor range and habitat associated with the this species. There are no CNDDB documented occurrences within 5 miles of the Study Area (2006). |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| California tiger salamander<br>*Ambystoma californiense* | FT, CSC | Inhabits annual grassland habitats with mammal burrows. Seasonal ponds and vernal pools are crucial to breeding. | **Unlikely.** Poor quality habitat is present in isolated sections of Permanente Creek adjacent to the Project Area. Poor water quality and annual disturbance in quarry detention ponds are likely to preclude breeding within the Project Area. Last known occurrence in Permanente Creek drainage system was in 1893 (CNDDB 2006). This species is unlikely to occur in upland areas where suitable habitat is present within 300 feet of potential Permanente Creek breeding habitat. |
| California red-legged frog<br>*Rana aurora draytonii* | FT, CSC | Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains. | **High Potential.** CRLF are currently documented to occur in one detention pond located along the southern boundary of the Project Area on the north side of Permanente Creek adjacent to a concrete weir (Jennings, 2006). In 1994 and 1997 CRLF were documented in Permanente Creek, just north of the Permanente Road bridge, located in two sequential impounds in a historical watercourse, and in riparian habitat directly downstream (CNDDB 2006). Potential breeding habitat is present in vegetated ponded areas and fragmented riparian corridors of Permanente Creek occurring adjacent to the southern boundary of the Project Area. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| **Fishes** | | | |
| coho salmon - central CA coast ESU<br>*Oncorhynchus kisutch* | FE, NMFS | Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. | **Not Present.** Study Area is outside of the present distribution range of central California coast coho salmon (NOAA 2006). |
| steelhead - central CA coast ESU<br>*Oncorhynchus mykiss* | FT, NMFS | Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean. | **Unlikely.** Documented to occur in Peters Creek on the west side of Highway 35 within 3 miles of Project Area (CNDDB 2006). Barriers in Permanente Creek would likely preclude the presence of this species in the Project Area. |
| steelhead - Central Valley ESU<br>*Oncorhynchus mykiss* | FT, NMFS | Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean. | **Not Present.** Study Area is outside of present distribution range for Central Valley steelhead ESU (NOAA 2006). |
| chinook salmon - Central Valley<br>*Oncorhynchus tshawytscha spring-run* | FT, ST, RP, NMFS | Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean. Water temperature greater than 27 degrees C is lethal to adults. | **Not Present.** Study Area is outside of the present distribution range of Central Valley chinook salmon (NOAA 2006). |
| delta smelt<br>*Hypomesus transpacificus* | FT, ST, RP | Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. | **Not present.** No typical habitat is present in the Study Area. The portion of Permanente Creek running though the Project Area is unsuitable for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| **Invertebrates** | | | |
| Bay checkerspot butterfly *Euphydryas editha bayensis* | FT, SSI, RP | Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay and San Jose. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants. | **Not Present.** Suitable serpentine soil habitat is not present in the Project Area to support the larval host plant. |
| unsilvered fritillary butterfly *Speyeria adiaste adiaste* | SSI | Restricted range: Santa Clara north to San Mateo County; east to north Los Angeles County and Kern County. Larval host plant is *Viola quercetorum*. Adults utilize openings in redwood and coniferous forests, oak woodlands, and chaparral habitats. | **Unlikely.** Suitable habitat is limited to the Buffer areas. The host plant blooming period is March to May, at which time larvae may be feeding. |
| San Bruno elfin butterfly *Incisalia (=Callophrys) mossii bayensis* | FE, SSI, RP | Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tried to the distribution of the larval host plant, *Sedum spathulifolium*. | **Unlikely.** Suitable habitat is limited to the Buffer areas. The host plant blooming period is June to July, at which time larvae may be feeding. |
| Conservancy fairy shrimp *Branchinecta conservatio* | FE, SSI, 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. | **Not Present.** Suitable vernal pool or seasonal swale habitat is not present in Project Area. |
| vernal pool tadpole shrimp *Lepidurus packardi* | FE, SSI, RP | Inhabits vernal pools and swales in the Sacramento Valley and San Francisco Bay Area containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid. | **Not Present.** Suitable vernal pool or seasonal swale habitat is not present in Project Area. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| **Plants** | | | |
| *Acanthomintha duttonii*<br>San Mateo Thorn-mint | FE, SE<br>List 1B | Chaparral, valley and foothill grassland often on serpentine soils. 50-300 meters (m). Blooms April-June. | **Unlikely.** Chaparral and grassland habitats in the Project Area may provide suitable habitat for this species, however serpentine soils potentially present would be heavily disturbed. The only presumed extant occurrences are out of the county. |
| *Allium peninsulare* var. *franciscanum*<br>Franciscan onion | List 1B | Cismontane woodland, valley and foothill grassland with clay soils, often on serpentine parent material. 100-300 meters(m). Blooms May-June. | **Unlikely.** Woodland and grassland habitats in the Project Area may provide suitable habitat for this species, however heavy disturbance of clay and serpentine soils potentially present may preclude presence of this species. |
| *Anomobryum julaceum*<br>slender silver moss | List 2 | Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, usually on damp rock and soil on outcrops near roadcuts. 100-1000 meters (m). | **No Potential.** Oak woodland habitats in the Project Area may provide habitat for this moss, however damp rocks and outcrops are not present. This species is known in the vicinity of the Project Area from one recorded occurrence in Big Basin Redwoods State Park. |
| *Arctostaphylos andersonii*<br>Santa Cruz manzanita | List 1B | Broadleafed upland forest, chaparral, North Coast coniferous forest, usually found near forest openings or edges in redwood forests. 60-730 meters (m). Blooms November-April. | **Unlikely.** Chaparral and woodland habitats in the Project Area may provide suitable habitat for this species, however no redwood forests were observed on site. |
| *Arctostaphylos glutinosa*<br>Schreiber's manzanita | List 1B | Closed-cone coniferous forest, chaparral, usually associated with diatomaceous shale and *Pinus attenuata*. 170-685 meters (m). Blooms November-April. | **Unlikely.** Chaparral and woodland habitats in the Project Area may provide suitable habitat for this species, however no *Pinus attenuata* or diatomaceous shale were observed. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Arctostaphylos pajaroensis*<br>Pajaro manzanita | List 1B | Chaparral and sandy soils. 30-760 meters (m). Blooms December-March. | **Unlikely.** Chaparral habitat in the Project Area may provide suitable habitat for this species, however, soils are not sandy and are generally heavily disturbed. |
| *Arctostaphylos regismontana*<br>King's Mountain manzanita | List 1B | Broadleafed upland forest, chaparral, North Coast coniferous forest, usually associated with granitic or sandstone outcrops. 305-730 meters (m). Blooms January-April. | **Unlikely.** Chaparral and woodland habitats in the Project Area may provide suitable habitat for this species, however no rock outcrops were observed. |
| *Arctostaphylos silvicola*<br>Bonny Doon manzanita | List 1B | Closed-cone coniferous forest, chaparral, lower montane coniferous forest, only found on inland marine sands in Santa Cruz County. 120-600 meters (m). Blooms February-March. | **No Potential.** Chaparral and woodland habitats in the Project Area may provide suitable habitat for this species, however no inland marine sands are present. |
| *Astragalus tener* var. *tener*<br>alkali milk-vetch | List 1B | Playas, valley and foothill grassland on adobe clay, and vernal pools usually associated with alkaline conditions. 1-60 meter (m). Blooms March-June. | **No Potential.** Suitable clay soils and alkaline pool habitats are not present on the steep slopes of the Project Area. |
| *Atriplex depressa*<br>brittlescale | List 1B | Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools, usually on alkaline and clay soils. 1-320 meters (m). Blooms May-October. | **No Potential.** Suitable alkaline conditions are not present in the Project Area. Additionally, the only recorded occurrence in the vicinity of the Project Area is in the tidal ponds of the Don Edwards National Wildlife Refuge. |
| *Atriplex joaquiniana*<br>San Joaquin spearscale | List 1B | Chenopod scrub, meadows and seeps, playas, and alkaline grasslands. 1-835 meters (m). Blooms April-October. | **No Potential.** Suitable alkaline conditions are not present in the Project Area. |
| *Calyptridium parryi* var. *hesseae*<br>Santa Cruz mountains pussypaws | List 3 | Chaparral, cismontane woodland. 305-1115 meters (m). Blooms May-July. | **Unlikely.** Chaparral habitat in the Project Area may provide suitable habitat for this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Centromadia parryi* ssp. *congdonii*<br>Congdon's tarplant | List 1B | Alkaline valley and foothill grassland. 1-230 meters (m). Blooms May-October. | **No Potential.** Most known occurrences of this species in the vicinity of the Project Area are associated with alkaline conditions which are not present in the Project Area. |
| *Chorizanthe pungens* var. *hartwegiana*<br>Ben Lomond spineflower | FE, List 1B | Lower montane coniferous forest, usually associated with maritime ponderosa pine sandhills. 90-610 meters (m). Blooms April-June. | **No Potential.** Suitable ponderosa pine sandhill habitat is not present in the Project Area. |
| *Chorizanthe robusta* var. *robusta*<br>robust spineflower | FE, List 1B | Cismontane woodland, coastal dunes, coastal scrub, usually on sandy terraces or bluffs in loose sand. 3-300 meters (m). Blooms April-September. | **No Potential.** The only known occurrences of this species in the vicinity of the Project Area are considered possibly extirpated. The Project Area lacks suitable coastal and sandy habitat. |
| *Cirsium fontinale* var. *campylon*<br>Mt. Hamilton thistle | List 1B | Cismontane woodland, chaparral, valley and foothill grassland, usually associated with serpentine soils. 100-890 meters (m). Blooms April-October. | **Unlikely.** The only known occurrences of this species in the vicinity of the Project Area are in the southern portion of the county. Additionally, the Project Area's potentially present serpentine soils are heavily disturbed. |
| *Cirsium fontinale* var. *fontinale*<br>fountain thistle | FE, SE, List 1B | Chaparral, valley and foothill grassland, usually associated with serpentine soils. 90-175 meters (m). Blooms June-October. | **Unlikely.** The Project Area's potentially present serpentine soils are heavily disturbed which probably precludes presence of this species. |
| *Cirsium praeteriens*<br>lost thistle | List 1A | This species is known from one recorded occurrence in the Palo Alto area in 1901, and has not been seen since. | **No Potential.** This species is presumed extinct in California. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Collinsia multicolor*<br>San Francisco collinsia | List 1B | Closed-cone coniferous forest, coastal scrub, usually on decomposed shale (mudstone). 30-250 meters (m). Blooms March-May. | **No Potential.** Suitable forest and coastal scrub habitat not present in the Project Area. |
| *Cordylanthus maritimus* ssp. *palustris*<br>Point Reyes bird's beak | List 1B | Coastal salt marsh. 0-10 meters (m). Blooms June-October. | **No Potential.** All recorded occurrences of this species are associated with tidal marsh. Suitable marsh habitat is not present in the Project Area. |
| *Cupressus abramsiana*<br>Sant Cruz cypress | FE, SE, List 1B | Closed-cone coniferous forest, chaparral, lower-montane coniferous forest, restricted to the Santa Cruz mountains, usually found with *Pinus attenuata*. 280-800 meters (m). | **No Potential.** Few conifers were observed in the Project Area, none of which were *C. abramsiana.* |
| *Didymodon norrisii*<br>Norris's beard-moss | List 2 | Cismontane woodland, lower montane coniferous forest, usually on intermittently mesic rocks. 600-1700 meters (m). | **No Potential.** Suitable intermittently mesic rocks not present in the Project Area. |
| *Dirca occidentalis*<br>western leatherwood | List 1B | Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland, usually on brushy slopes and mesic sites. 50-395 meters (m). Blooms January-March. | **Moderate Potential.** Chaparral and woodland habitats in the Project Area may provide suitable habitat for this species. Several known occurrences are recorded in the vicinity of the Project Area. |
| *Dudleya setchellii*<br>Santa Clara valley dudleya | FE, List 1B | Rocky and serpentine valley and foothill grassland. 60-455 meters (m). Blooms April-June. | **Unlikely.** Suitable serpentine soils potentially present in the Project Area have been heavily disturbed. The only recorded occurrence of this species in the vicinity of the Project Area is in the southern portion of the county. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Eriogonum nudum* var.*decurrens*<br>Ben Lomond buckwheat | List 1B | Chaparral, cismontane woodland, lower montane coniferous forest, usually found on maritime ponderosa pine sandhills. 50-800 meters (m). Blooms June-October. | **No Potential.** The only recorded occurrence for this species in the vicinity of the Project Area was collected in 1953. Additionally, the Project Area lacks suitable maritime ponderosa pine sandhill habitat. |
| *Eriophyllum latilobum*<br>San Mateo woolly sunflower | FE, SE, List 1B | Cismontane woodland, often on serpentine in roadcuts. 45-150 meters (m) Blooms May-June. | **Unlikely.** Suitable serpentine soils potentially present in the Project Area are heavily disturbed. Additionally, the only presumed extant population in the vicinity of the Project Area is known from a 1962 collection. |
| *Eryngium aristulatum* var. *hooveri*<br>Hoover's button-celery | List 1B | Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 5-45 meters (m). Blooms July. | **No Potential.** Most known occurrences within the vicinity of the Project Area are associated with alkaline influences from the San Francisco bay. The Project Area does not receive these alkaline influences. |
| *Fritillaria liliacea*<br>fragrant fritillary | List 1B | Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, usually associated with serpentine. 3-410 meters (m). Blooms February-April. | **No Potential.** Suitable coastal habitats are not present in the Project Area. |
| *Hespervax sparsiflora* var. *brevifolia*<br>short-leaved evax | List 2 | Coastal bluff scrub, coastal dunes. 0-215 meters. Blooms March-June. | **No Potential.** Suitable coastal habitats are not present in the Project Area. |
| *Hesperolinon congestum*<br>Marin western flax | FT, ST, List 1B | Serpentine valley and foothill grasslands and chaparral. 30-365 meters (m). Blooms April-July. | **Unlikely.** Suitable serpentine soils potentially present in the Project Area are heavily disturbed which probably precludes presence of this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Hoita strobilina*<br>Loma Prieta hoita | List 1B | Chaparral, cismontane woodland, riparian woodland, usually on serpentine soils and mesic sites. 30-860 meters (m). Blooms May-July. | **Moderate Potential.** Chaparral habitats on the Project Area may provide suitable habitat for this species. |
| *Lasthenia conjugens*<br>Contra Costa Goldfields | FE, List 1B | Cismontane woodland, playas, valley and foothill grassland, and alkaline vernal pools. 0-470 meters (m). Blooms March-June. | **Unlikely.** The only recorded occurrence of this species in the vicinity of the Project Area is in Alameda county. Additionally, the Project Area lacks suitable vernal pool habitat. |
| *Legenere limosa*<br>legenere | List 1B | Vernal pools. 1-880 meters (m). Blooms April-June. | **No Potential.** Suitable vernal pool habitat is not present in the Project Area. |
| *Lessingia micradenia* var. *glabrata*<br>smooth lessingia | List 1B | Chaparral, cismontane woodland, usually on serpentine soils near roadsides. 120-420 meters (m). Blooms July-November. | **Unlikely.** Disturbance of the project area's potential serpentine soils probably precludes presence of this species. |
| *Malacothamnus arcuatus*<br>arcuate bushmallow | List 1B | Chaparral, cismontane woodland, usually in gravelly alluvium. 15-355 meters (m). Blooms April-September. | **Unlikely.** Chaparral habitat in the Project Area may provide suitable habitat for this species, however, slopes are too steep to hold suitable gravelly alluvium. |
| *Malacothamnus davidsonii*<br>Davidson's bushmallow | List 1B | Chaparral, cismontane woodland, coastal scrub, riparian woodland, usually in sandy washes. 185-855 meters (m). Blooms June-January. | **Unlikely.** The only recorded occurrence of this species within the vicinity of the Project Area was recorded in 1936. |
| *Malacothamnus hallii*<br>Hall's bushmallow | List 1B | Chaparral, coastal scrub, some populations on serpentine. 10-760 meters (m). Blooms May-September. | **Unlikely.** The only known occurrences of this species in the vicinity of the Project Area date from 1936 and 1993. The site visit occurred during the blooming period of this species and it was not observed. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Micropus amphibolus*<br>Mt. Diablo cottonweed | List 3 | Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. 45-825 meters (m). Blooms March-May. | **Moderate Potential.** Grassy slopes in the Project Area may provide suitable habitat for this species. |
| *Monardella villosa* ssp.*globosa*<br>robust monardella | List 1B | Openings in chaparral, broadleafed upland forest, cismontane woodland, and valley and foothill grassland. 30-915 meters (m). Blooms June-July. | **Unlikely.** Most recorded occurrences of this species in the vicinity of the Project Area are associated with tree species not found in the Project Area. |
| *Navarretia prostrata*<br>prostrate navarretia | List 1B | Coastal scrub, meadows and seeps, valley and foothill grassland, alkaline vernal pools. 15-700 meters (m). Blooms April-July. | **No Potential.** The only known occurrences of this species in the vicinity of the Project Area are associated with vernal pools near the San Francisco Bay. The Project Area lacks suitable alkaline vernal pool habitat. |
| *Pedicularis dudleyi*<br>Dudley's lousewort | SR, List 1B | Chaparral, lower montane coniferous forest, North Coast coniferous forest. 60-900 meters (m). Blooms April-June. | **Unlikely.** The occurrences from which this species is known in the vicinity of the Project Area are associated with coastal redwood forest and maritime chaparral. Suitable maritime and coastal redwood forest habitats not present in the Project Area. |
| *Penstemon rattanii* var. *kleei*<br>Santa Cruz mountains beardtongue | List 1B | Chaparral, lower montane coniferous fores, North Coast coniferous forest, usually on sandy shale slopes and sometimes in the transition zone between forest and chaparral. 400-1100 meters (m). Blooms May-June. | **Unlikely.** The only occurrences of this species in the vicinity of the Project Area are known from collections from the western side of the Santa Cruz mountains in 1954 and 1955. Additionally, the Project Area lacks suitable sandy shale slopes and coniferous forest habitat. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Pentachaeta bellidiflora*<br>white-rayed pentacheata | FE, SE, List 1B | Valley and foothill grassland, often associated with serpentine soils. 35-620 meters (m). Blooms March-May. | **Unlikely.** The only recent recorded occurrence of this species in the vicinity of the Project Area is in a serpentine wildflower field. Suitable serpentine grassland habitat is not present in the Project Area. |
| *Plagiobothrys glaber*<br>hairless popcorn-flower | List 1A | Alkaline meadows and seeps, coastal salt marshes and swamps. 15-180 meters (m). Blooms March-May. | **No Potential.** This species is presumed extinct in California. The project Area lacks suitable salt marsh and alkaline meadow habitats. |
| *Potamogeton filiformis*<br>slender-leaved pondweed | List 2 | Assorted shallow freshwater marshes and swamps. 300-2150 meters (m). Blooms May-July. | **No Potential.** This species is known in the vicinity of the Project Area from one collection in 1899. Additionally, the Project Area lacks suitable swamp habitat. |
| *Stebbinsoseris decipiens*<br>Santa Cruz microseris | List 1B | Openings in broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland, sometimes on serpentine soils. 10-500 meters (m). Blooms April-May. | **Unlikely.** Chaparral and grassland habitat in the Project Area may provide suitable habitat for this species, however most recorded occurrences are outside the county and associated with coastal communities which are not present in the Project Area. |
| *Strepanthus albidus* ssp. *albidus*<br>Metcalf Canyon jewel-flower | FE, List 1B | Relatively open areas in dry grassy meadows on serpentine soils and serpentine balds. 45-800 meters (m). Blooms April-July. | **Unlikely.** The only recorded occurrence of this species in the vicinity of the Project Area was collected in 1895. Disturbance of the soil surface probably precludes presence of this species. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|
| *Streptanthus albudus* ssp. *peramoenus*<br>most beautiful jewel-flower | List 1B | Chaparral, cismontane woodland, valley and foothill grassland, often on serpentine soils. 110-1000 meters (m). Blooms April-June. | **Unlikely.** The only known occurrences of this species in the vicinity of the Project Area are associated with serpentine soils. Serpentine soils potentially present in the Project Area have been heavily disturbed. This disturbance probably precludes presence of this species. |
| *Sueda californica*<br>California seablite | FE, List 1B | Coastal salt marshes and swamps. 0-15 meters (m). Blooms July-October. | **No Potential.** Suitable coastal salt marsh habitat not present in the Project Area. |
| *Tropidocarpum capparideum*<br>caper-fruited tropidocarpum | List 1B | Valley and foothill grassland on alkaline clay soils. 0-455 meters (m). Blooms March-April. | **Unlikely.** The Project Area lacks suitable alkaline clay soils. Additionally, the recorded occurrences in the vicinity of the Project Area date from 1902 and 1907 and may be incorrectly identified. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE |
|---|---|---|---|

*** Key to status codes:**

| | |
|---|---|
| FE | Federal Endangered |
| FT | Federal Threatened |
| FC | Federal Candidate |
| FD | Federal De-listed |
| FPD | Federal Proposed for De-listing |
| NMFS | Species under the Jurisdiction of the National Marine Fisheries Service |
| BCC | USFWS Birds of Conservation Concern |
| RP | Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan |
| SE | State Endangered |
| ST | State Threatened |
| SR | State Rare |
| CSC | CDFG Species of Special Concern |
| Draft CSC | 4 April 2000 Draft CDFG Species of Special Concern |
| CFP | CDFG Fully Protected Animal |
| SSI | CDFG Special Status Invertebrates |
| WBWG | Western Bat Working Group High Priority species |
| List 1A | CNPS List 1A: Plants presumed extinct in California |
| List 1B | CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere |
| List 2 | CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere |
| List 3 | CNPS List 3: Plants about which CNPS needs more information (a review list) |

## APPENDIX B. Representative Site Photographs

**Top:** Ruderal hillslope east of the quarry office
**Bottom:** Revegetated slope

Photos taken Sept. 28, 2006

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**Top:** Chaparral/ Oak Woodland in the Buffer area northwest of the quarry pit
**Bottom:** Example of active areas in the Project Area

Photos taken Sept. 28, 2006

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**Top:** Example of vegetated settling pond prior to maintenance dredging

**Bottom:** Wetland vegetation resultant from temporary settling pond diversion flows.

Photos taken Sept. 28, 2006

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**Top:** Revegetation area on the southwest side of the Project Area
**Bottom:** Example of current revegetation efforts showing irrigation and deer cages

Photos taken Sept. 28, 2006

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**APPENDIX C. 2006 Hanson Permanente Quarry California Red-legged Frog Survey**

# 2006 CALIFORNIA RED-LEGGED FROG (*Rana draytonii*) SURVEYS AT THE HANSON PERMANENTE CEMENT FACILITY, CUPERTINO, CALIFORNIA

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December 30, 2006

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## EXECUTIVE SUMMARY

Protocol surveys were conducted for California red-legged frogs (CRLFs; *Rana draytonii*) on 21 February; 25 March; 02, 11, and 29 April; 06 May; 31 July; and 08 August 2006, at the Hanson Permanente Cement Facility in the vicinity of Cupertino, California, to determine the use of in-stream and off-stream sediment settling ponds by this species. As with previous surveys of the facility grounds, CRLFs were found to not only inhabit Permanente Creek, but they also inhabited Pond #13, 14, 21, and 22. No CRLFs were found in Pond #04A, 04B, 04C, 05, 09, 10, 11, 13A, 13B, 16, 17, 18, 19, and 20. Instead, Pacific treefrogs (*Hyla regilla*) were found to inhabit and breed in all ponds examined, as well as many of the watercourses between the sediment ponds. Additionally, Coast Range newts (*Taricha torosa torosa*) were found to breed in Pond #13, and 14, as well as Permanente Creek. CRLFs were observed to successfully breed only in Pond #14 and 21 as well as the watercourse downstream of Pond #20. These data indicate that CRLFs continue to live and reproduce on the Hanson Permanente Cement Facility property in harmony with current operations. The proposed removal of sediment from Pond #13A, 13B, and 17—where CRLFs were not observed—will have no adverse effects on the CRLF population inhabiting this part of the Permanente Creek drainage.

## INTRODUCTION

The Hanson Permanente Cement Facility is located in Santa Clara County, in the vicinity of Cupertino, California (Figure 1). The facility surrounds the lower reaches of the Permanente Creek drainage with 18 current settling ponds installed to remove suspended sediments from the water that is drained from quarry and other facility operations. The resulting water from the sediment ponds runs through rock filters before being discharged into Permanente Creek (except for pond 14, which is a standard retention basin that allows all sediments to settle prior to water flowing through a weir and joining Permanente Creek). Because certain settling ponds need to be cleaned out from time to time in order to keep them functional, protocol surveys were conducted to during 2006 determine if they were being used by the federally threatened California red-legged frog (CRLF; *Rana draytonii*). These surveys follow previous surveys conducted for the

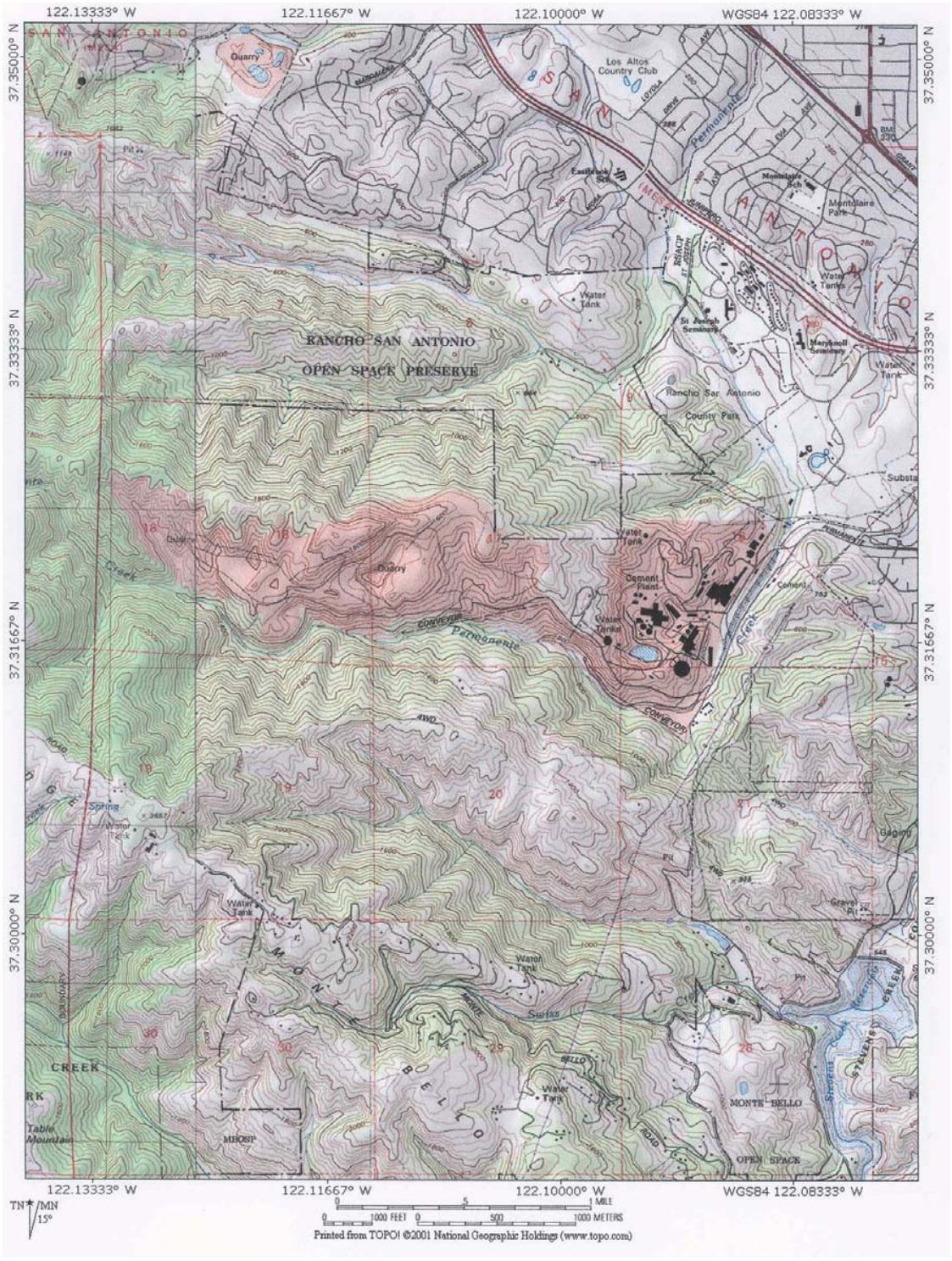


Figure 1. Location of the Hanson Permanente Cement Facility.

species during 2005. Per recent taxonomic changes with frog species in California, I follow Jennings (2004) and Shaffer et al. (2004) and use the scientific name "*Rana draytonii*" for the CRLF. In almost all other documents and field guides, this frog is stated as the subspecies "*Rana aurora draytonii*" (e.g., see Stebbins 2003).

## STUDY AREA

The Hanson Permanente Cement Facility is an approximately 3,650-acre piece of land that lies just southwest of the intersection of I-280 and Hwy 85 in Santa Clara County (Figure 1). The facility is along the lower reaches of Permanente Creek and contains various buildings, rock crushers, storage yards, sand and rock quarries, paved roads, railroad tracks, and aggregate conveyors located over a wide area. A total of 18 settling ponds are used to remove excess sediment from water received from facility and quarry operations. The resulting water in these settling ponds is discharged into Permanente Creek (Figure 2). These settling ponds also have vegetation present and are used by a wide variety of wildlife including Coast Range newts (*Taricha torosa torosa*), Pacific treefrogs (*Hyla regilla*), California toads (*Bufo boreas halophilus*), and CRLF (Jennings, pers. observ.). The surrounding hillsides and flats have mixed oak (*Quercus* spp.) woodlands, with scattered chaparral and other vegetation. The settling ponds contain cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.), as well as scattered patches of willows (*Salix* sp.) and Himalayan blackberries (*Rubus discolor*). Willows and Himalayan blackberries are common along the main Permanente Creek channel.

## MATERIALS AND METHODS

The surveys for the CRLF followed guidelines as set forth by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 2005). All settling ponds were surveyed during daylight hours on 21 February, 25 March, 06 May, and 31 July 2006, and at night on 25 March; 02, 11, and 29 April; and 08 August 2006. Surveys were conducted as per protocol survey standards for the CRLF (U.S. Fish and Wildlife Service 2005) and my long-term experience with this species (e.g., see Jennings and Hayes 1994). A flashlight

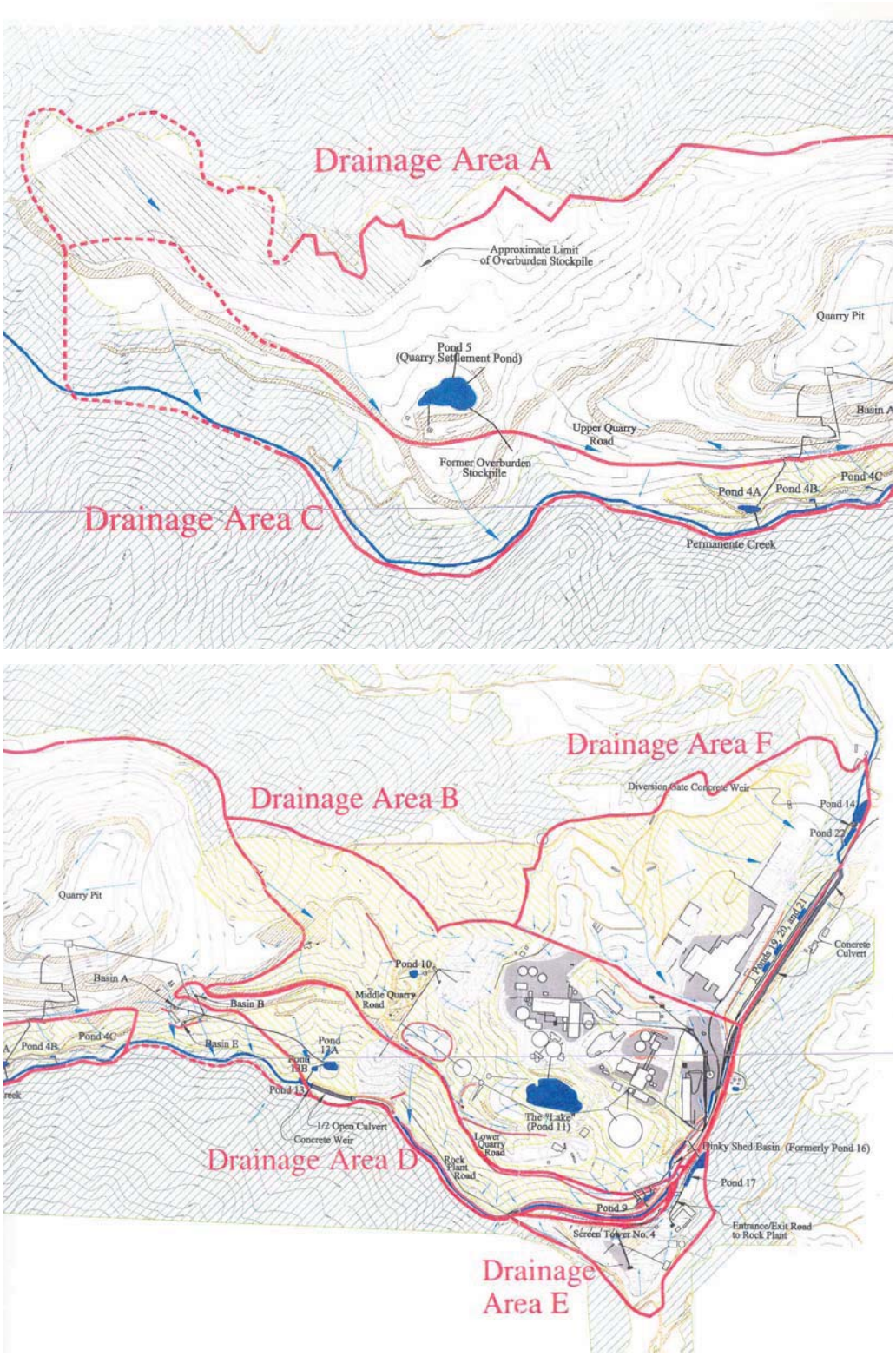


Figure 2. Location of settling ponds on the Hanson Permanente Cement Facility grounds. The top and bottom maps represent the western and eastern portions of the property.

was used to locate the eye shines of frogs during nighttime hours and I repeatedly listened for calling male CRLFs using the identifications provided by Davidson (1995).

## RESULTS AND DISCUSSION

CRLFs were found only in Permanente Creek and Pond #13, 14, 21, and 22. No CRLFs were found in Pond #04A, 04B, 04C, 05, 09, 10, 11, 13A, 13B, 16, 17, 18, 19, and 20. Instead, Pacific treefrogs were found to inhabit and breed in all ponds examined, as well as many of the watercourses between the sediment ponds. Additionally, Coast Range newts were found to breed in Pond #13, and 14, as well as Permanente Creek. CRLFs were observed to successfully breed only in Pond #14 and 21 as well as the watercourse downstream of Pond #20. Each of these locations was found to have calling male CRLFs, as well as larvae and metamorphs.

The reason that CRLFs are probably not found in more of the settling ponds is due to the shallow nature of most of these water bodies. They are designed to trap sediment and this quickly results in water depths below 1 foot in depth (or drying completely on a regular basis). The resulting mud flats or cattail thickets were found to contain numerous raccoon (*Procyon lotor*) footprints and I observed raccoons almost every time during my nighttime surveys. The presence of so many CRLF predators on a regular basis probably mediates against juvenile or adult CRLFs dispersing into these shallow water habitats.

Additionally, a number of these sediment ponds are isolated from where CRLFs are known to be present. The long distance movement of CRLFs overland is probably very hazardous with all the natural predators present within the facility grounds.

In summary, these data indicate that CRLFs continue to live and reproduce on the Hanson Permanente Cement Facility property in harmony with current operations. Because CRLFs do not use Pond #13A, 13B, and 17, the proposed removal of sediment from these settling ponds have no adverse effects on the CRLF population inhabiting this part of the Permanente Creek drainage.

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