YARAK CLUSTER SUBDIVISION

Sensitive Amphibian Habitat Assessment

Prepared for:
County of Santa Clara

January 2009

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225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900
www.esassoc.com

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SECTION 0.0
Executive Summary

For this report, a habitat analysis was performed on the 100-Yarak Cluster Subdivision Site to rank the relative ability of different portions of the site to provide habitat support elements for California red-legged frog and/or California tiger salamander. Based on local described breeding populations, both species were presumed present throughout the site for this analysis.

Factors used in weighting the relative value of study zones include: 1) the presence and magnitude of existing disturbances in the area; 2) the availability of potential breeding sites and proximity of the area to known or potential aquatic breeding sites; 3) the availability of escape cover such as downed wood or boulder fields; 4) the presence and degree of small mammal activity (i.e., burrow density); 5) the overall character of vegetation within an area and the density of exotic vegetation, and; 6) habitat type, with salamanders generally preferring grasslands and oak savannah habitat and red-legged frogs using grasslands and woodland. Generally, the habitat elements considered above also provide substantial benefit to other local wildlife species, thus, high ranking areas are generally considered to provide overall high wildlife values.

Based on the factors, the eastern portion of the Yarak site is considered to provide the highest quality habitat for sensitive amphibians. This area is contiguous with adjacent undeveloped habitat and has a stock pond impoundment (the only one on the Yarak site) that may provide potential California red-legged frog and California tiger salamander aquatic breeding habitat. Another potential breeding pond occurs about 100 feet east of the site with no barriers to amphibian movement between these areas. In contrast to much of the Yarak site which supports tall exotic weeds (mainly black mustard), grasslands on the eastern portion of the site are well grazed and are dominated by low-growing herbaceous vegetation that helps support a robust small mammal population. The area also supports a mosaic of non-native annual grasslands, native perennial grasslands, oak woodlands and (some) northern coastal scrub. Red-legged frogs may be expected to aestivate in oak woodlands in this area, where standing water is available year-round and temperatures are moderated by steep topography and tree cover.

The northern edge of the site is considered to provide the next best habitat on the site. While this area does not provide sensitive amphibian breeding, it is located proximally to three potential breeding ponds that occur within 0.5 miles of the northern site perimeter. This area also shows abundant small mammal activity and supports a mix of non-native and native grassland habitat with native wildflowers such as soap plant and blue dicks (and presumably other native wildflowers, were surveys timed appropriately to identify such species) that are uncommon on the larger site.

Other undeveloped portions of the site provide moderate (good but not excellent) habitat suitability for California red-legged frog and California tiger salamander. Several contributing factors are the relatively

smaller number of small mammal burrows and greater distance of these areas to aquatic breeding sites (compared to high quality areas). Also, aquatic breeding habitat is relatively limited to the west and south of the site, which weighed in the relatively lower habitat values given to south and west portions of the Yarak site.

The central portion of the site is relatively flat and generally does not support the small mammal densities observed in high quality areas. Thus, while these areas provide moderate quality terrestrial habitat for sensitive amphibians, their habitat value was ranked somewhat lower than areas with relatively greater small mammal activity. Thus, the central portion of the site, which includes moderately sloped grasslands immediately adjacent to the approved 10-acre development site, ranks relatively lower in habitat value compared with the northern and eastern areas. These areas are deemed potentially suitable for agricultural uses.

Two portions of the site are disturbed and provide limited benefit to sensitive amphibians, except perhaps as a seasonal movement corridor between aquatic breeding sites and summer habitat. Such areas include the horse corrals in the developed northern portion of the site and the central building site that has been graded and lacks aquatic features or terrestrial cover required by California red-legged frog and California tiger salamander.

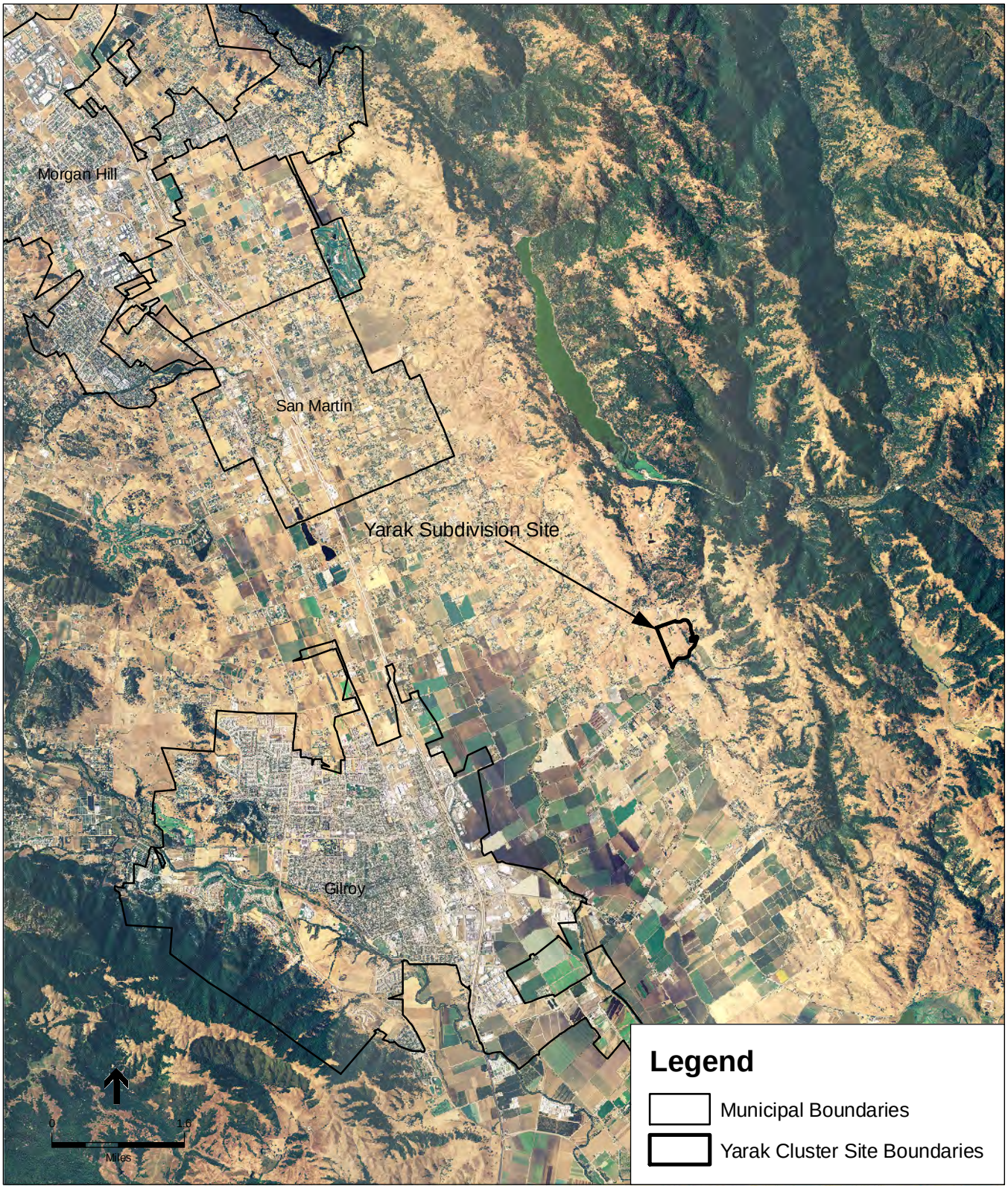
SECTION 1.0
Introduction

Purpose of Survey

This document reports the results of a focused survey that was conducted on Yarak Cluster Development site (site or Yarak site) to identify portions of the site that provide the greatest relative habitat benefits for California red-legged frog (CRLF) (*Rana draytonii*) and California tiger salamander (CTS) (*Ambystoma californiense*). The site is located at 8655 Leavesley Road (APN: 898-34-002), east of the City of Gilroy in unincorporated Santa Clara County (County) (**Figure 1**).

The 100-acre site principally supports grazed non-native annual grasslands and oak woodlands, with a few remnant stands of native annual grasslands and northern coastal scrub. In 2006, the site was subdivided into four parcels and the County of Santa Clara approved the development of a low density 10-acre residential subdivision in the middle of the site. As of January 2009, the building envelope has been graded, but other than a small horse ranch in the northern portion of the site it remains undeveloped. Presently, the property owner has submitted a request to the County to modify the initial project conditions of approval to allow the development of agricultural facilities in portions of the site that are within a designated open space easement. As a result, the County requested that Environmental Science Associates (ESA) prepare this focused biological resources analysis to identify and map the highest quality habitat on the site, with particular attention to aquatic and upland habitat that may support CRLF and CTS. Thus, the purpose of this report is to inform later development on the site and promote the conservation of high quality habitat elements, particularly those that support sensitive amphibians.

The evaluation procedures used in this assessment were based on the U.S. Fish and Wildlife Service (USFWS) criteria for examining and assessing habitat value relative to the life history requirements of CRLF and CTS.



Yarak Cluster Subdivision Sensitive Amphibian Habitat Assessment . 206456.02

SOURCE: ESA; County of Santa Clara

Figure 1
General Site Location

SECTION 2.0
Site Assessment

Survey Methods

Environmental Science Associates' biologist Brian Pittman, CWB, a CRLF and CTS specialist, performed a reconnaissance-level survey of the 100-acre Yarak site and surrounding area on January 15 2009 between 0730 and 1330 hours (resume provided in Attachment A). Surveys were conducted under sunny, warm (~60 to 70 degrees F), and calm conditions that were considered optimal for the site assessment.

This assessment followed the CRLF and CTS habitat assessment survey and reporting guidelines issued in the USFWS (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* and the USFWS (2005) *Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs*. This report describes aquatic habitat on the site and in the surrounding area relative to the habitat requirements of the CRLF and CTS within 1.25 mile (2 km) of the site, and also ranks upland portions of the site relative to the habitat requirements of these species. Aquatic larval dipnet surveys were not conducted in support of this assessment; however, aquatic sites were thoroughly assessed using binoculars (Eagle Optics Ranger series, 10 x 42 magnification).

Study Area Description

Local Area Description

The Yarak Cluster Subdivision site is located in unincorporated Santa Clara County, California, on the USGS Gilroy 7.5-minute topographic quadrangle. This site is in the Llagas Creek watershed, approximately three miles east of the City of Gilroy (Figure 1). Located at 8655 Leavesley Road in a predominantly rural area, the east and south boundaries of the site are defined by Leavesley Road. Elevations on the site range from around 400 feet above sea level at the southwestern tip of the site to greater than 680 feet in the northeast portion of the site.

Grazed and ungrazed non-native annual grasslands mixed with oak woodland occur to the west and north of the site. The adjacent parcels to the west and north are generally rural, though three residences occur (two still under construction) immediately west and north of the site. The property north of the site supports annual grasslands and irrigated pasture, beyond which are dense oak woodlands.

Lands immediately to the south provide a combination of oak woodlands and annual grasslands on relatively steep terrain, and vineyards on the more level and moderate slopes.

The area east of the Yarak site, within about 1,000 feet of the site, supports annual grasslands and oak woodland habitat that is characteristic of the local area. This area has a moderate slope and at least two stock ponds in this area provide potential CRLF and CTS breeding sites. Beyond about 1,000 feet, the terrain rises abruptly and the steep topography no longer supports aquatic breeding habitat for these species.

CTS and CRLF Range and Sightings within 2 km (1.25 mile) and 5 km (3.1 miles) of the Site

The Yarak Cluster Subdivision site is located within the active range of the CRLF and CTS. There are five reported observations of these species within 5 km of the site, which presented in **Table 1** and mapped in **Figure 2**.

The CNDDB reports two extant CTS breeding sites within 5 km of the Yarak site, the closest of which is 0.97 mile north of the site (CNDDB Occ. #717) and the next nearest is 2.6 miles north of the site (CNDDB Occ. #723) (CDFG, 2009). Based on the steep local topography it is unlikely that CTS would normally move between these ponds and the Yarak site; however, as discussed in the following section, there are numerous potential CTS breeding ponds within 1 mile of the site.

There are no reported CRLF occurrences within 2 km (1.25 mile) of the site and three extant populations described within 5 km (3.1 miles) (CDFG, 2009). The nearest occurrence to the site is a large breeding population located 2.3 miles to the north (CNDDB Occ. #466), north of Gilroy Hot Springs Road. Habitat at this site consists of stockponds surrounded by oak woodland and oak savannah. A second CRLF breeding population is described 2.3 miles north of the Yarak site, in a stream channel with a boulder/cobble substrate within mixed woodlands dominated by coast live oak and California bay woodland (CNDDB Occ. #747). Another CRLF location is described 2.7 miles north of the Yarak site, in a stock pond within an area of mixed oak woodland and annual grasslands (CNDDB Occ. #590) (CDFG, 2009). As described for CTS, based on the steep local topography it is unlikely that individuals from these populations would normally reach the Yarak site; however, there are numerous potential CRLF breeding ponds within 1 mile of the site.

Habitats on the Project Site and Within 1.25 Miles (2 km)

The project site and areas within 1.25 miles are dominated by grazed non-native annual grasslands and oak woodlands dominated by coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*), with a relatively limited number of scattered rural residences and agricultural uses including irrigated pasturelands and vineyards.

One stock pond impoundment on the site may serve as a potential breeding site for CRLF and/or CTS, and no fewer than 13 small stock ponds occur within one mile of the site may provide potential breeding sites for CRLF or CTS (Figure 2).

TABLE 1
CNDDB-REPORTED CRLF AND CTS OCCURRENCES WITHIN ONE MILE OF THE SITE

CNDDB Occ. No.	Distance from Site	Site Description	UTM Coordinates (NAD 83)
CTS #717	0.97 mile	A 2002 identification of a CTS breeding site located 0.97 mile north of the Yarak site. Surrounding habitat consists of grazed grasslands with a few oaks.	Zone 10S 4103209N, 631581E
Occurrences Located Greater than 1.0 Mile from the Study Areas			
CRLF #466	2.3 miles	This large population identified in 2000 is 2.3 miles north of the Yarak site, north of Gilroy Hot Springs Road. Habitat consists of stockponds surrounded by oak woodland and oak savannah.	Zone 10S 4106059N, 634804E
CRLF #747	2.3 miles	This site, located 2.3 miles north of the Yarak site, consists of a stream channel with a boulder/cobble substrate within mixed woodlands dominated by coast live oak and California bay woodland.	Zone 10S 4104982N 634057E
CTS #723	2.6 miles	A 2002 report of a CTS breeding site located 2.6 miles north of the Yarak site. The site is located at June Lake in the Palassou Ridge Natural Area, 0.6 mile east of Coyote Lake. Habitat consists of a stock pond surrounded by oak woodland and non-native grassland.	Zone 10S 4105346N, 631830E
CRLF #590	2.7 miles	Located 2.7 miles north of the Yarak site, this site consists of an unvegetated stock pond surrounded by oak woodland and non-native grassland. Numerous breeding adults were observed between 2002 and 2005.	Zone 10S 4105944N 633631E

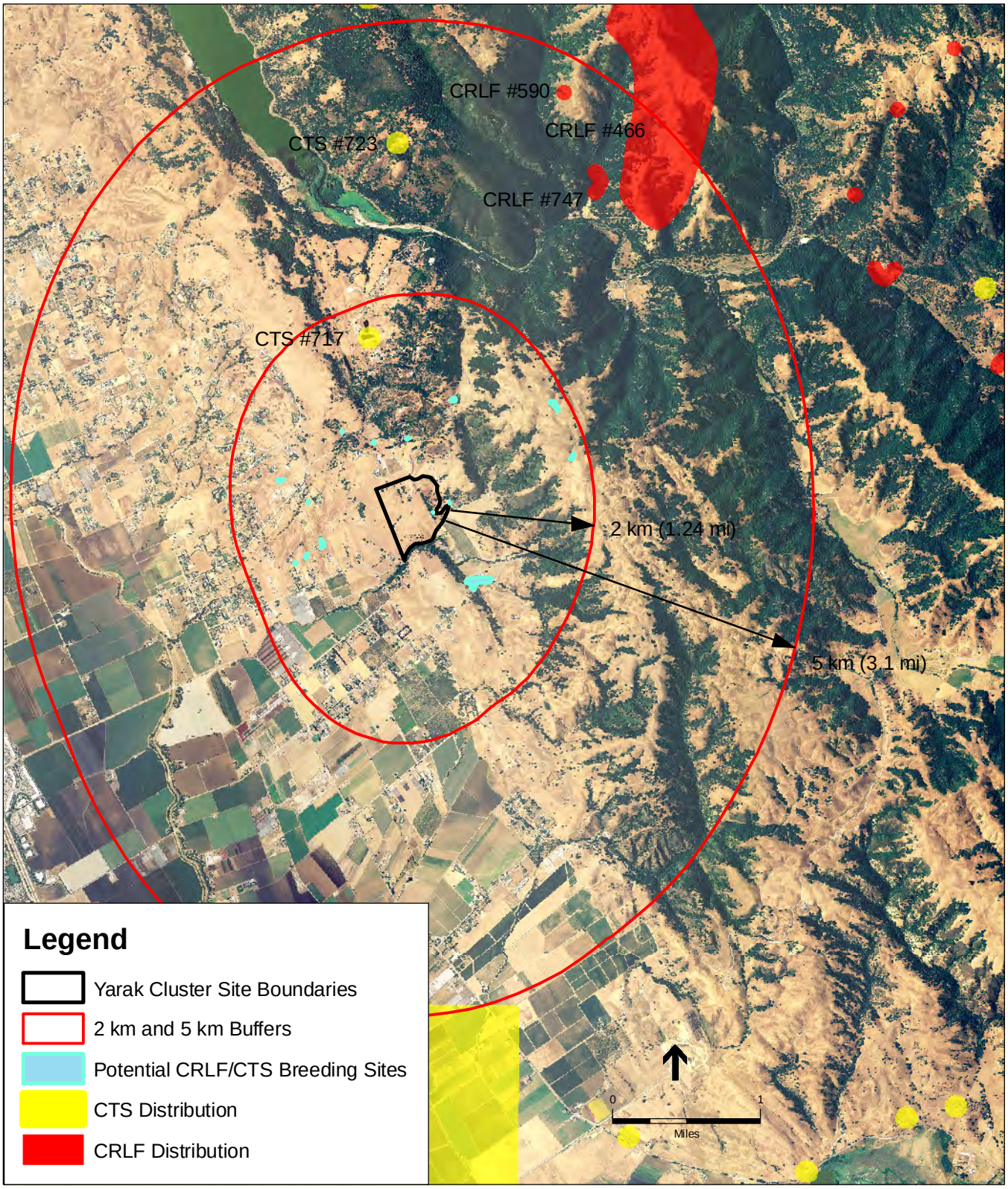
Source: CDFG, 2009

On-site Study Zones

Methodology

As previously identified, the site was divided into seven study zones, not including developed portions of the site or the approved 10-acre residential building site. These zones were delineated based on habitat quality and availability, and natural breaks in topography, and are depicted in **Figure 3** and described in **Table 2**. The following discussion ranks the habitat within each of zone relative to the habitat requirements of CRLF and CTS.

Generally speaking, the entire Yarak site is suitable and presumably accessible to CRLF and CTS; however, portions of the site are located closer to known or suspected breeding sites, and support habitat complexity and small mammal activity not seen throughout the site. In the terminology of this report, these areas are identified as “High Quality” habitat. “Moderate Quality” areas include those areas that are accessible to CRLF and CTS, but have relatively low habitat value because they are relatively distant from breeding sites, lack topographic or vegetation habitat diversity relative to high quality portions of the Yarak site, or provide relatively few small mammal burrows. The category of “Low Quality” habitat was reserved for areas that are developed or have been graded (i.e., the approved 10-acre building site).

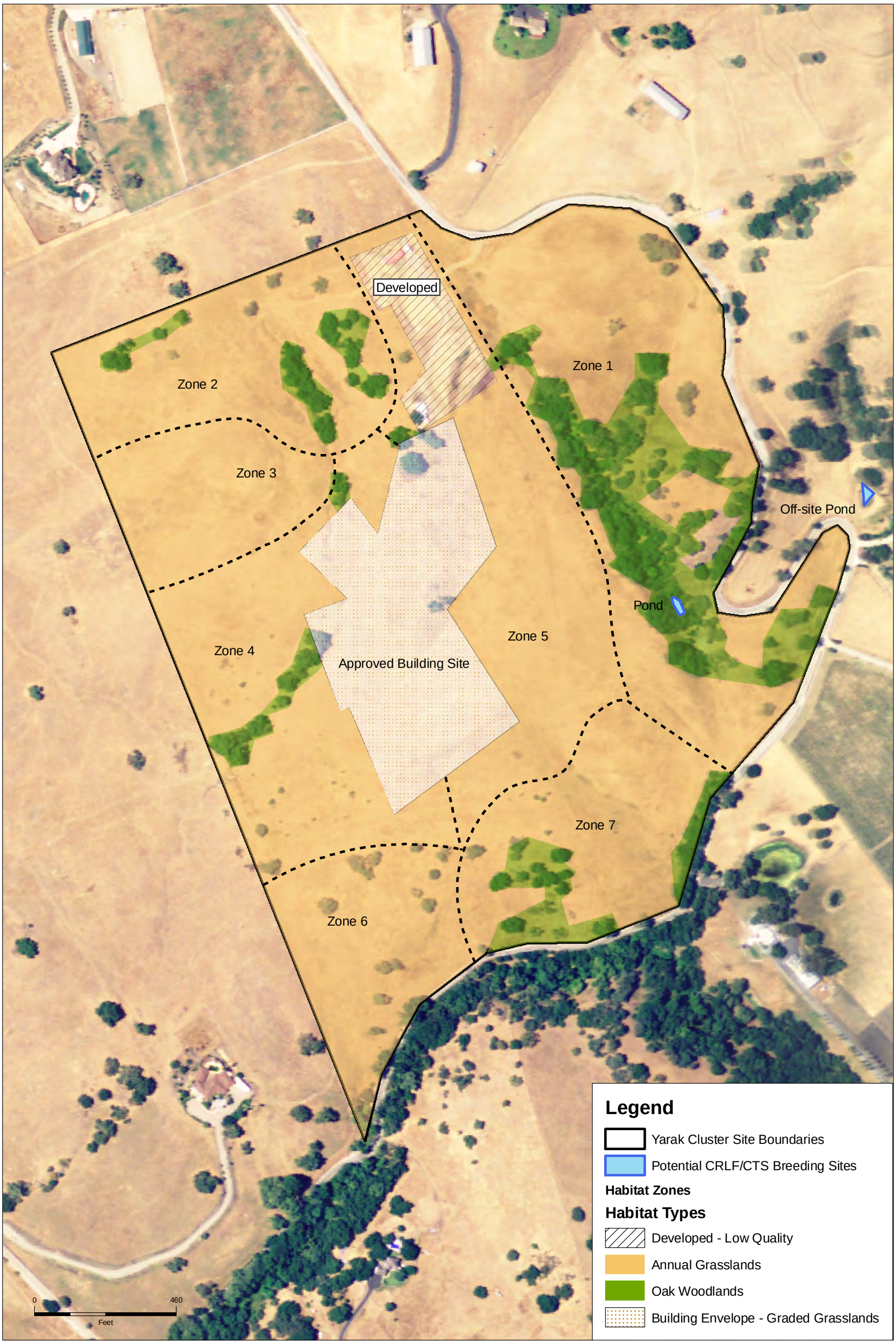


Yarak Cluster Subdivision Sensitive Amphibian Habitat Assessment . 206456.02

SOURCE: ESA; CNDDB, 2009

Figure 2

CTS and CRLF Distribution and Potential Breeding Sites within 2 km (1.24 miles) and 5 km (3.1 miles)



SOURCE: ESA

Yarak Cluster Subdivision Sensitive Amphibian Habitat Assessment . 206456.02

Figure 3

Yarak Site Habitat Distribution and Study Zone Locations

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TABLE 2

DESCRIPTION OF HABITAT ZONES SORTED BY RELATIVE HABITAT RANKING

Zone #	Relative Habitat Value Rank 1-8*	Relative CRLF/CTS Habitat Quality	Description
1	**1**	**High**	Zone 1 provides the highest overall habitat quality and overall availability of habitat features that could support CRLF or CTS. Aquatic breeding habitat is available in this area and immediately off-site and the area has extensive small mammal activity.
2	**2**	**High**	This area is located closest to potential aquatic breeding sites located north of the Yarak site. The boulder fields in this area show extensive small mammal (mainly pocket gopher and mouse) activity and provide extensive refugia opportunities for sensitive amphibians.
7	**3**	**Moderate/High**	This area is located near aquatic breeding sites in Zone 1 and east of the site, and provides good overall habitat complexity. Boulder fields in this area show moderate small mammal activity and provide extensive refugia opportunities for sensitive amphibians. Proximity to the nearby riparian corridor was a consideration in elevating the relative rank of this area.
5	4	Moderate	Like Zone 4, this area is relatively flat and overgrown by introduced herbaceous vegetation. CRLF and CTS use of this area would be expected during normal movement activities, but small mammal burrows and other cover are generally lacking (relative to Zone 1). Zone 5 ranks relatively higher in quality than Zone 4 because this area is closer to potential CRLF/CTS aquatic breeding sites.
4	5	Moderate	This area is relatively flat and overgrown by introduced herbaceous vegetation. CRLF and CTS use of this area would be expected during normal movement activities, but small mammal burrows and other cover are generally lacking (relative to Zone 1).
3	6	Moderate	The area is outwardly similar to Zone 2, but is on a steeper slope with relatively fewer refugia opportunities for CRLF and CTS. Also, small mammal activity was relatively lower in this area and it is somewhat removed from potential breeding sites.
6	7	Moderate	Zone 6 provides good overall habitat complexity (comparable to Zone 7), but it is relatively distant to potential CRLF and CTS breeding sites located in Zone 1 and east and north of the site. Small mammal activity is considered moderate.
Developed Area	8	Low	Located in the central northern portion f the site, this area provides no aestivation habitat, though is presumed to serve as a seasonal CRLF/CTS movement corridor.
Building Site	N/A	Low	Habitat value was not ranked in this area.

* Lower numbers equal higher relative habitat value for CRLF and CTS.

While these areas do not provide cover or aestivation habitat, they may serve as CRLF and CTS movement corridors. There are no movement barriers to CRLF or CTS on the site, though the approved Yarak Cluster Subdivision will reduce the movement opportunities in the central portion of the site.

High Quality Areas

Zone 1 and Zone 2

Zones 1 and 2 provide some of the highest quality habitat for CRLF and CTS on the Yarak site, with Zone 1 ranking as the best available habitat on the site. The topography in Zone 1 ranges from moderately sloped in the northern grassland portions to very steep in the deep, wooded ravine that traverses the area from north to south (see Figure 3). Though horses have unimpeded access to the entire Yarak property, they preferentially graze within Zone 1. This grazing has largely eliminated tall weeds from this area that are seen elsewhere on the property. Instead, grasslands are dominated by short (typically 4-inch tall, generally less than 10-inch tall) herbaceous vegetation dominated by cut-leafed geranium (*Geranium dissectum*), red-stem filaree (*Erodium cicutarium*), wild oats (*Avena* sp.) and well-grazed black mustard (*Brassica nigra*) (see **Figure 4**). Native grasses such as purple needlegrass (*Nassella pulchra*) and northern coastal scrub species such as California sage (*Artemesia californica*) dominate in limited portions of Zone 1 where topography limited horse grazing.

Wooded portions of Zone 1 support a combination of valley oak and coast live oak savannah and more dense oak woodlands that dominate both sides of the steep ravine that traverses the area. East of the ravine, woodlands within Zone 1 are relatively open with extensive downed wood and small mammal activity. These features provide excellent upland aestivation habitat for CRLF and CTS, and the area serves as a movement corridor between upland and aquatic sites in the local area.

Due to historic livestock grazing patterns on the site, with preferential horse grazing in Zone 1, this area appears to support the highest densities of California ground squirrel and Botta's pocket gopher on the Yarak site. The short grasslands in this area also benefit CTS by facilitating movement access across the site during winter months. By contrast, Zone 5 supports a thick stand of head-high black mustard year-round and consequently has relatively little small mammal activity.

Zone 1 supports the only potential CRLF/CTS aquatic breeding feature on the Yarak site; a perennial impoundment that occurs in the large ravine that traverses the area (see Figure 3). The nearest potential off-site breeding feature, a high quality stock pond, is located on private land about 100 feet east of the Yarak site. These features each had greater than 1.0 foot of water when observed on January 15, 2009. The proximity of these and several other potential breeding sites to Zone 1 factor high into the relatively high habitat value of this area.

Zone 2 is characterized by native and non-native annual grasslands habitat. This area experiences much less grazing pressure than Zone 1 and consequently supports more standing residual dry matter (standing dead plant material). This area is important because it is located proximally to known and potential CRLF/CTS aquatic breeding habitat that occurs north of the Yarak site and it also supports a natural boulder formation that is undermined by an extensive network of pocket gopher and mouse burrows. These features provide excellent cover for CRLF and CTS (see **Figure 5**). This area also supports a mix

Source: ESA

Figure 4
Representative Photos of Zone 1

Source: ESA

Figure 5
Representative Photos of Zone 2

of native grasses and wildflowers including soap plant (*Chlorogalum pomeridianum*) and blue dicks (*Dichelostemma capitatum*) that are uncommon on the larger Yarak site.

Moderate Quality Areas

Zones 3, 6, and 7

Zone 7 is a moderately rocky site on a steep slope that provides moderate to high quality habitat for CRLF and CTS (**Figure 6**). Of the three sites on steep slopes (Zones 3, 6, and 7), Zone 7 is located closest to the on-site pond and provides the greatest upland habitat quality for these species. This area also shows extensive variability in the type and availability of microhabitat features that may refugia sites for aestivating CRLF and CTS. This area shows moderate, though not extensive ground squirrel and small mammal activity. As a result, it is considered to provide relatively lower habitat benefits to CRLF and CTS compared with Zone 1 because it lacks aquatic breeding features and is situated relatively distant to known and potential aquatic breeding sites. However, the close proximity of Zone 7 to the riparian corridor that parallels Leavesley Road and potential breeding ponds in Zone 1 and further east are indicators of site quality that elevate this area relatively higher than Zones 3 and 6.

Zones 3 and 6 (**Figure 7** and **Figure 8**, respectively) occur on moderate to steep slopes that support boulder fields and moderate small mammal activity (again, less than Zone 1). These sites do not support aquatic habitat, but provide upland characteristics such as downed wood, rocky escape cover and small mammal burrows that could support aestivating CRLF or CTS.

Zones 4 and 5

Zones 4 and 5 are located in the middle portion of the site and have been subject to historic disturbances. As a result of the disturbance footprint, these areas provide varying degrees of habitat suitability for CRLF and CTS. The topography of these areas is gently to moderately sloped in a westerly direction with low to moderate levels of small mammal activity. Small mammal populations are more pronounced in portions of Zone 4 and Zone 5 that support boulder fields, which occur in limited patches within and on the fringe of the approved 10-acre building site. Overall, vegetation in these areas is characterized by tall standing dry matter, mostly remnant growth of black mustard (see **Figure 9** and **Figure 10**).

A single drainage traverses Zone 4 from north to south and continues off-site in a southwesterly direction (see Figure 3 and Figure 9). This feature is moderately sloped and conveys water for just a brief period of year with no standing water. As evidence of its short hydroperiod, vegetation within the drainage was largely indistinct from surrounding grasslands. Other than as an occasional migratory pathway, CRLF and CTS use is not expected in this drainage. No other aquatic features or drainage features occur within Zones 4 and 5.

While Zones 4 and 5 provide moderate quality CRLF and CTS aestivation habitat and may serve as movement corridors for these species, these areas are generally disturbed and show relatively lower densities of small mammals compared with high quality portions of the Yarak site (e.g., Zone 1 and Zone 2). These areas are also somewhat removed from potential CRLF and CTS breeding sites that occur north and east of the site. Given these considerations, these sites are considered to provide moderately quality habitat, but are ranked relatively lower than Zones 1, 2 and 7.

Source: ESA

Figure 6
Representative Photos of Zone 7

Source: ESA

Figure 7
Representative Photo of Zone 3 (Background of Both Photos)

Source: ESA

Figure 8
Representative Photos of Zone 6

Source: ESA

Figure 9

Representative Photos of Zone 4 – Drainage that Traverses Area (top photo)

Source: ESA

Figure 10
Representative Photos of Zone 5

Low Quality Areas

The central northern portion of the site is maintained as an active horse ranch complete with stables, corrals, equipment storage and staging areas. The majority of this area is bare ground or supports short, grazed annual grasslands with few to no habitat features that support CRLF or CTS. Small mammal burrows were largely absent from this area, but were present on the fringes that transitioned into annual grasslands habitat. Representative photos of this area are provided in **Figure 11**.

Off-Site Habitat

Three off-site aquatic features were identified within 0.5 mile of the site and principally occur east (2 features) and north (1 feature) of the Yarak site. The local distribution of potential aquatic breeding sites within 2 km of the site, which includes 13 potential aquatic breeding features, is shown in Figure 2.

Areas south of the site include mixed oak woodland and a densely wooded riparian corridor (**Figure 12**). As depicted in Figure 12, grasslands and other non-wooded habitats are either in production as vineyards or are in the process of being developed for vineyards. The agricultural lands are considered to provide low quality habitat for CRLF and CTS, with moderate habitat conditions in woodland areas (principally for CRLF). An agricultural pond associated with the vineyard is actively maintained and has fountain-type circulation system that does not support habitat for sensitive amphibians.

Areas east of the Yarak site (**Figure 13**) provide habitat that is largely comparable to high quality areas in Zone 1. These areas support grazed annual grasslands and oak woodland on moderate to steep slopes. Two perennial stock ponds occur within 1,000 feet of the site and appear to provide potential CRLF and CTS breeding habitat.

Land uses are mixed to the north of the Yarak site and include rural residential development, irrigated pasture, grazed annual grasslands, and undisturbed oak woodlands. No fewer than three potential CRLF/CTS aquatic breeding sites occur in stock ponds located within 0.5 miles of the northern site boundary (see Figure 2). The nearest of these features is just over 1,000 feet from the site and supports moderate cattail (*Typha* sp) growth (**Figure 14**). Sensitive wildlife species associated with the three aquatic features are expected to occasionally use the Yarak site.

Source: ESA

Figure 11

Representative Photos of the Graded Central Portion of the Site and Developed Portion of the Site

Source: ESA

Figure 12
Habitat South of the Site in Vineyard Development (Top) and in Preparation for Vineyards (Bottom)

Source: ESA

Figure 13

Lands East of the Site Providing Potential CRLF/CTS Breeding (Top) and Are Grazed but Are Otherwise Undeveloped (Bottom)

Source: ESA

Figure 14

Potential CRLF/CTS Breeding Habitat about 1,000 Feet North of the Site (Top) and Upland Habitat Adjacent to the Yarak Site (Bottom)

SECTION 3.0
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SECTION 4.0
Document Preparation

This document was prepared by:

Brian Pittman
Certified Wildlife Biologist
ESA | Biological Resources
1425 N. McDowell Blvd, Suite 105
Petaluma, CA 94054
707.795-0900 main
707.795-0915 direct
707.795-0902 fax
bpittman@esassoc.com

Resume provided in Attachment A

ATTACHMENT A

Resume of Surveying Biologist

BRIAN PITTMAN, CWB

Technical Associate II

Environmental Science Associates' biologist, Brian Pittman has a focused background in vertebrate biology, wetland restoration, and environmental law. He has over ten years experience in wildlife habitat management and statewide endangered species permitting. Mr. Pittman is an experienced terrestrial vertebrate ecologist and has directed and performed protocol-level surveys for California red-legged frogs at field sites throughout California. He has extensive restoration planning experience specific to the California red-legged frog and holds a federal Recovery Permit for this species.

Education

M.S., Environmental Studies, San Jose State University

B.A., Biology, University of California, Santa Cruz

Certifications / Registrations

Certified Wildlife Biologist - The Wildlife Society, 2004

California Scientific Collecting Permit #801090-01

Federal Recovery Permit #TE-027422-3 (California red-legged frog, California tiger salamander, large branchiopods)

Specialized Training

Wetland Delineation Training Course, U.S. Army Corps of Engineers

Specific Amphibian Experience

The Wildlife Society, San Francisco Bay Area Chapter, 2002 California Tiger Salamander Identification, Handling, and Management Workshop

The Wildlife Society, San Francisco Bay Area Chapter, 1998 & 2000 California Red-legged Frog Identification, Handling and Management Workshops

Training received specific to the California tiger salamander and California red-legged frog:

The Wildlife Society 2002 California Tiger Salamander Identification, Natural History, and Relocation Workshop, Santa Rosa, California. Instructed by Dave Cook, featuring Gary Fellers, Gretchen Padget-Flohr, and others. An 8-hour workshop that described the life history of the California tiger salamander, its status and distribution in the Santa Rosa Vernal Pool Plain, and survey methods. As a component of the workshop participants were able to dipnet for salamanders at Southwest Park, examine drift fences and pitfall traps, and utilize fiber optic survey methods.

The Wildlife Society 2000 California Red-legged Frog Workshop, Stockton, California. Instructed by Norman Scott, U.S. Geologic Survey and Jae Abel, Santa Clara Municipal Water District. An 8-a.m. to 10-p.m. workshop that covered the natural history of red-legged frogs, and surveys and site assessments. Specific attention was given in the field to egg mass surveys, tadpole surveys, and adult surveys, and handling adult frogs.

The Wildlife Society 1998 California Red-legged Frog Workshop, Point Reyes, California. Instructed by Gary Fellers, Biological Resources Division, U.S. Geologic Survey, Point Reyes National Seashore. An all-day workshop emphasizing identification of amphibian species in the Bay Area region, habitat for red-legged frogs, life history, and identification of similar species in all stages of development. Survey techniques for tadpoles and adults were demonstrated, and participants were able to dipnet for adult and larval frogs in several stock ponds at Point Reyes.

Relevant Experience (Continued)

- Mr. Pittman was principal author of the Santa Clara County survey protocol for California tiger salamander (CTS) at the Stanford Campus, San Mateo County. The Stanford population represents the only known California tiger salamander population on the San Francisco peninsula. The 2001 survey protocol, entitled "*Survey Methodology to Determine Occupied CTS Habitat for Areas Located in the Stanford CTS Management Zone*" was developed to identify occupied upland CTS habitat within development areas on Stanford University as designated in their interagency CTS Management Agreement.
- During 2001 and 2002, Mr. Pittman was the lead wildlife biologist examining conveyance options for the California Department of Water Resources in support of their South Bay Aqueduct improvement project in the Tri-Valley area. Field surveys for this project in winter 2002 involved an extensive California tiger-salamander relocation effort. As the lead permitted biologist, Mr. Pittman directed field crews and participated in the excavation of over 300 small mammal burrows and relocation of identified California tiger salamanders.
- During protocol-level large branchiopod surveys in support of the California Department of Water Resources South Bay Aqueduct project, Mr. Pittman has encountered over 1,000 larval California tiger salamanders during the course of aquatic dipnet surveys.
- From 2001 to 2004, Mr. Pittman was responsible for implementing the County's five-year California tiger salamander survey protocol on the Stanford Campus to establish tiger salamander presence or absence in select areas. With the federal listing the County protocol will be superseded by the federal protocol.
- Separate from the above Santa Clara County contract, Mr. Pittman was the lead biologist for the Carnegie Foundation project on the Stanford Campus, for which the primary issue was upland protection of California tiger salamander. As the primary biological lead and representative agent for Santa Clara County, he oversaw and directed the implementation of salamander protection measures. Mr. Pittman was a primary contributor to the tiger salamander conservation plan associated with this project.
- Mr. Pittman was the principal author and lead field investigator for the Mt. Diablo State Park Habitat Conservation Plan, for which California tiger salamander was a covered species.
- Mr. Pittman was lead biologist for the Henry Coe State Park Day Use Improvements Project, Santa Clara County, California. Acting in a lead capacity, Mr. Pittman performed field surveys and prepared the project Biological Assessment. Mr. Pittman designed and oversaw construction of California red-legged frog breeding pond.

Relevant Experience (Continued)

Additional Survey Experience within California Tiger Salamander Habitat Specific to the California Red-legged Frog

- With approval from the Service, for the Henry Coe State Park Day Use Improvements Project, Santa Clara County, California, Mr. Pittman instructed a one-day course entitled, "*California Red-legged Frog Identification, Handling, and Management Workshop.*" This workshop was presented specifically to California Department of Parks and Recreation biologists to allow them to become "Service-approved" to capture and relocate California red-legged frogs under the project Biological Opinion.
- In support of a Habitat Conservation Plan for the San Francisco Public Utilities Commission, Mr. Pittman directed and performed protocol-level surveys for California red-legged frog in lakes on SFPUC lands above the Sunol Regional Wilderness. A mitigation strategy was developed in coordination with the U.S. Fish and Wildlife Service to reduce impacts to California red-legged frog and improve pond habitat.
- During a two-year survey effort in 2001 and 2002, Mr. Pittman directed protocol-level surveys for California red-legged frog in Camino Andreas Creek in support of the Contra Costa Water District's Multi-Purpose Pipeline Project in the cities of Pittsburg and Baypoint.
- Lead biologist for CEQA review of the San Francisco Public Utilities Commission's Chloramine Conversion Project located in the San Francisco Watershed in San Mateo County, which analyzed project impacts to California red-legged frog and San Francisco garter snake at the Pulgas Water Temple.
- Mr. Pittman has directed USFWS protocol-level surveys for California red-legged frog at over 60 sites between 2001 and 2006 for the Zone 7 Water Agency, Alameda County, California.
- Directed and performed protocol-level surveys for California red-legged frog in four cattle stock ponds in Sunol that are owned by the San Francisco Public Utilities Commission. Adult and larval red-legged frogs were identified in all surveyed ponds.
- For the City of Livermore, Mr. Pittman performed focused surveys and prepared a biological resource constraints analysis for a project route. He identified California red-legged frogs in several locations on the project site and worked with the City to avoid impacts to identified populations.
- Lead wildlife biologist for the Livermore-Amador Valley Water Management Agency (LAVWMA) pipeline project in Alameda County. Main issues along the 22-mile alignment included 13 creeks that provide potential California red-legged frog habitat and limited habitat for California tiger salamander. Responsible for assessing project biological resource impacts and preparing the Biological Assessment for submittal to the U.S. Fish and Wildlife Service.

Relevant Experience (Continued)

- As part of a flood control project in the City of Novato, Mr. Pittman performed protocol-level surveys for California red-legged frog in Novato Creek, Marin County.
- Mr. Pittman was the lead biologist for the State Route 4 Bypass Project, Brentwood, California. He prepared the Biological Assessment and consulted with the U.S. Fish and Wildlife Service to address impacts to California red-legged frogs in three project area creeks.
- Mr. Pittman developed and implemented a habitat restoration plan for California red-legged frog along a 0.5-mile segment of Almaden Creek at the Hacienda Furnace Yard, Santa Clara County. He conducted surveys to determine species presence prior to construction.

SELECTED PUBLICATIONS

Pittman, B. 2005. Observations of Upland Habitat Use by California Tiger Salamanders Based on Burrow Excavation. *Transactions of the Western Section of the Wildlife Society* 41:26-30; 2005.

Pittman, B. 1996. *A Survey of Inbenthic Macrofauna at a South San Francisco Bay Salt Marsh*. Master's thesis, San Jose State University.

PROFESSIONAL AFFILIATIONS

Certified Wildlife Biologist, The Wildlife Society
Past President (2003), San Francisco Bay Area Chapter of The Wildlife Society.