

BIOLOGICAL ASSESSMENT
FOR PACIFIC GAS AND ELECTRIC COMPANY'S
LINE 303
IN-LINE INSPECTION PROJECT

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Executive Summary

Pacific Gas and Electric Company (PG&E) is required to inspect and repair its natural gas pipelines on a regular basis as mandated by Code of Federal Regulation 49, Part 192 Applicable Code Requirement: Part 192 Subpart "O": Pipeline Integrity Management (192.901 through 192.951). A recent internal inspection of PG&E's Line 303 high pressure natural gas transmission line discovered three anomalies within the pipeline. Two anomalies (Site 1 and Site 2) are located near Camino Diablo Road in Contra Costa County, and the third anomaly (Site 3) is located in Alameda County just north of Livermore. Sites 1 and 2 are separated from Site 3 by a distance of approximately 9.8 miles.

As part of project planning, PG&E contracted Garcia and Associates (GANDA) to prepare a Biological Assessment. This Biological Assessment provides essential information about the project's potential impacts to federally-listed species for the purpose of Section 7 consultation between the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers.

The USFWS list for the project area includes 16 federally listed species, including 14 animals and two plants. The project will have no effect on nine of these species because they are not present in the Project Area; however, seven of these federally-listed species are present or have the potential to occur in the project vicinity: California red-legged frog (CRLF), California tiger salamander (CTS), San Joaquin kit fox, Conservancy fairy shrimp, longhorn fairy shrimp, vernal pool tadpole shrimp, and vernal pool fairy shrimp (VPFS). The proposed access road to Site 3 is located within designated critical habitat (Unit 19C) for vernal pool fairy shrimp; access to the Project Area will require a limited amount of vehicles and a tracked excavator to drive across 0.1 acre (7, 920 ft.²) of this critical habitat, which does not contain vernal pool habitat. All three anomalies are not located within critical habitat. Sites 1 and 2 lie within proposed CRLF critical habitat (Unit CCS-2) and Site 3 lies within proposed CRLF critical habitat Unit ALA-2 (USFWS 2008).

The entire project will result in approximately 0.077 acres of temporary impact to potential CRLF estivation habitat and 0.451 acres of potential dispersal habitat. In addition, approximately 0.218 acres of potential California tiger salamander estivation habitat and 0.310 acres of potential dispersal habitat would be temporarily impacted by project-related activities. PG&E will minimize the potential impact to CRLF habitats by conducting the project in accordance with provisions provided in the Programmatic Biological Opinion under the Clean Water Act for projects that may affect California red-legged frogs (USFWS 1999a). This approach will also reduce the potential for impacts to California tiger salamander, San Joaquin kit fox, and any of the other species that may occur in the Project Area. In addition, PG&E will implement a restoration and monitoring plan to ensure that habitat conditions are restored to pre-construction conditions following the required pipeline repair work.

Introduction

This Biological Assessment was prepared for the Line 303 In-Line Inspection Project (Direct Examination and Repair Project). The intent of this assessment is to provide essential information about the project's potential impacts to listed species for the purpose of Section 7 consultation between the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers (Corps). The project has potential to impact or take California red-legged frog and California tiger salamander. San Joaquin kit fox is also expected to occur in the Project Area but is not expected to be impacted by project activities. The project will also temporarily impact critical habitat for vernal pool fairy shrimp (Unit 19C). PG&E proposes to minimize the potential for any negative effects to California red-legged frog by incorporating the measures described in the Programmatic Biological Opinion for California red-legged frog (USFWS 1999a; Appendix A). This approach will also avoid and/or minimize impacts to CTS and vernal pool fairy shrimp.

Project Location

The Project Area consists of three separate pipeline anomalies (Sites 1, 2, and 3). Sites 1 and 2 are located north and south of Camino Diablo Road, respectively, in Contra Costa County (Figure 1). Site 3 is located in Alameda County approximately two miles north of Interstate 580 and 0.45 miles west of Vasco Road near Livermore, California (Figure 1). Sites 1 and 2 are separated from Site 3 by a distance of approximately 9.8 miles. Sites 1 and 2 are accessed by Camino Diablo Road and Site 3 is accessed via a gated unpaved road located at the intersection of Ames Road and Raymond Road, which is located underneath the Contra Costa-Los Positas 230kV overhead electrical transmission line.

Project Description and Purpose

A recent internal in-line inspection of Line 303 performed in April 2008 revealed three anomalies in the pipeline. As part of the verification of the in-line inspection results, an external direct examination of the pipeline is required. The objective of the external direct examination is to gather data to validate the in-line inspection results and verify the integrity of the pipeline. As a result of the external direct examination, a repair may be made to restore the integrity of the pipeline.

The pipeline examination and repair work is scheduled to be performed by a PG&E gas construction crew early in 2009. The crew size will vary from 2 to 5 workers depending on the given task for the day. Each pipeline anomaly will require excavation of a 10 foot x 20 foot hole in order to expose the anomaly and facilitate inspection and repair work. The repair will require a 50 x 50 foot work area which will be delineated by ESA fencing. Soil from the excavation will be stockpiled alongside the pipe, within the work area and outside of any wetland areas. After the pipe has been exposed, examined and repaired, a protective epoxy coat will be applied and the pipe trench will be backfilled. The temporarily impacted areas will then be restored to pre-construction conditions using a

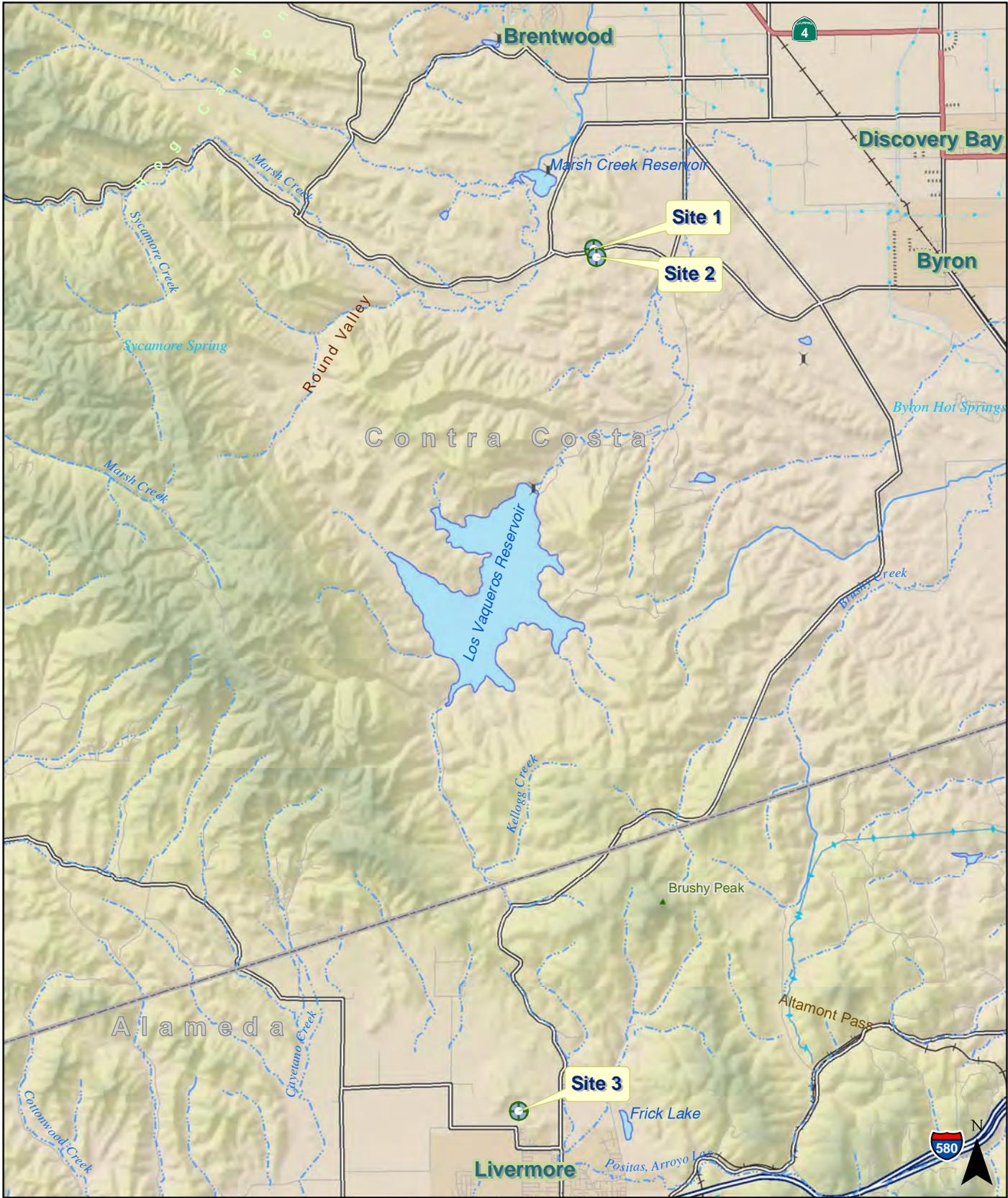
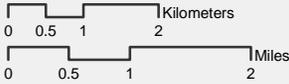


Figure 1. Line 303 ILI project location.



Project Location



native seed mix appropriate for the area, as described in the Avoidance and Mitigation measures section and Appendix C. Equipment used for the project will consist of a tracked excavator and front end loader.

Affected Environment

The Project Area consists of three separate pipeline anomalies (Sites 1, 2, and 3) located in rural Contra Costa (Sites 1 and 2) and Alameda County (Site 3). Sites 1 and 2 are located within grazed annual grassland habitat located north and south of Camino Diablo Road. Site 3 is located within annual grassland habitat utilized for cattle grazing and as a utility corridor. In addition to the Line 303 gas pipeline, the corridor also includes PG&E's Line 114 gas pipeline and the overhead Contra Costa-Las Positas 230kV transmission line. The Springtown Wetlands Reserve, a large vernal pool complex, is located just south of Site 3.

Habitat types present in the Project Area include ruderal, annual grassland, and seasonal wetlands. A wetland delineation was prepared to describe the seasonal wetlands that will be affected by the project. Habitat types are described briefly below.

Ruderal

Ruderal habitat is characterized by sparse, nonnative and typically weedy vegetation. In the Project Area, ruderal vegetation is located along proposed access routes to the anomalies. Ruderal habitat is primarily located at the entrance gate to the parcel and at the transmission line tower located near Site 3.

Annual Grassland

Annual grassland habitat is a grass and forbs dominated community that lacks significant trees and shrub cover. In the Project Area, annual grassland is the dominant community that will be affected by project activities at all three anomaly sites. Dominant species include soft chess (*Bromus hordeaceus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), hare barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), and Italian ryegrass (*Lolium multiflorum*).

Seasonal Wetland

Seasonal wetland habitat includes areas that are inundated or saturated for a portion of the growing season. In the Project Area, wetlands are present at Sites 1 and 3. At Site 1 a seasonal wetland occurs within the work area of Site 1. This seasonal wetland is dominated by alfalfa (*Medicago sativa*). This wetland will be affected by the excavation work to repair the anomaly. In addition to this wetland, a vernal pool is present adjacent to the work area at Site 1, north of Camino Diablo Road. This single vernal pool is approximately 25 x 75 feet and is located on the north edge of Camino Diablo Road. This vernal pool feature will be avoided by construction activities and access to the anomaly.

At Site 3 a seasonal drainage swale is present along the proposed access route to Site 3. This swale is bisected by the gas pipeline and would be impacted by construction

equipment traversing the swale to access the Site 3 anomaly. The swale is dominated by salt grass (*Distichlis spicata*).

Listed Species

Based upon a query to the USFWS species list for the Livermore, Byron Hot Springs, and Brentwood quadrangles, 16 federally listed species were identified as having some potential to occur within the Project Area, including 14 animals and two plants (Table 1; Appendix B). Nine species (Contra Costa goldfields, Palmate-bracted bird’s beak, valley elderberry longhorn beetle, delta smelt, steelhead, chinook salmon, giant garter snake, Alameda whipsnake, and California least tern) have no or low potential to occur in the Project Area due to lack of suitable habitat and are not discussed further within this Biological Assessment. Seven species have potential to occur within the Project Area including four invertebrates, two amphibians and one mammal. Each of these species is discussed in detail below.

Table 1. Federally listed species with potential to occur within the Line 303 In-Line Inspection Project Area.

Species	Federal/State/CNPS Status ¹	Habitat	Potential to Occur
Plants			
Palmate-bracted bird’s beak <i>Cordylantus palmatus</i>	FE/CE/1B.1	Lowland plains and basins at elevations of less than 500 feet. Grows primarily along the edges of channels and drainages, with a few individuals scattered in seasonally wet depressions, alkali scalds (barren areas with a surface crust of salts), and grassy areas.	Low. Large population present in Springtown Wetland Reserve located immediately south of Site 3.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/-/1B	Valley and foothill grasslands, vernal pools, cismontane woodland	None. No known record of species within four miles of Project Area.
Invertebrates			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/-/-	Small to large vernal pools	Moderate. Vernal pool near Site 1 and critical habitat within one mile of Site 1.
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE/-/-	Vernal pools and swales in valley grassland	Moderate. Vernal pool near Site 1.

Species	Federal/State/CNPS Status ¹	Habitat	Potential to Occur
Conservancy fairy shrimp <i>Branchinecta conservation</i>	FE/-/-	Vernal pools and swales in valley grassland	Moderate. Vernal pool near Site 1.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	FE/-/-	Vernal pools and swales in valley grassland	Moderate. Vernal pool near Site 1.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT/-/-	Restricted to elderberry (<i>Sambucus</i> sp.) shrubs for larval development from Shasta County to Fresno County	None. Lack of suitable habitat in Project Area.
Fish			
Delta smelt <i>Hypomesus transpacificus</i>	FT/CT/-	Brackish water in the Sacramento delta	None. Lack of suitable habitat in Project Area.
Central Valley Steelhead and Central California Coastal Steelhead <i>Oncorhynchus mykiss</i>	FT/-/-	Clear, cold, freshwater streams with suitable spawning gravel	None. Lack of suitable habitat in Project Area.
Central Valley spring-run chinook salmon and winter-run chinook, Sacramento River <i>Oncorhynchus tshawytscha</i>	NMFS T NMFS E	Drainages of San Francisco and San Pablo Bays. Central California coastal rivers.	None. Lack of suitable habitat in Project Area.
Amphibians			
California red-legged frog <i>Rana draytonii</i>	FT/CSC/-	Ponds, pools, and slow-moving streams	High. Breeding habitat within 80 m of Site 3; one record within a mile of Sites 1 and 2. Designated critical habitat 3.4 miles west of Site 3.
California tiger salamander <i>Ambystoma californiense</i>	FT/CSC/-	Ponds and vernal pools in grasslands, and oak woodlands	High. Breeding ponds and adult occurrences within 0.5 mi. of Site 1; designated critical habitat 3.4 miles west of Site 3.
Reptiles			
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/CT/-	Chaparral, northern coastal sage scrub, coastal sage, and grassland communities	Low. Project area lacks chaparral or scrub habitat required for species. Critical habitat is located 6.9 miles northwest

Species	Federal/State/CNPS Status ¹	Habitat	Potential to Occur
			of Site 3.
Giant garter snake <i>Thamnophis gigas</i>	FT/CT/-	Natural and artificial wetlands including sloughs, agricultural ditches, canals, rice fields, and freshwater marshes.	None. No suitable habitat in Project Area
Birds			
California least tern <i>Sterna antillarum browni</i>	FE/CE/-	Nests on barren to sparsely vegetated areas near water	None. No suitable habitat in Project Area
Mammals			
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE/CT/-	Grassland, scrubland, irrigated pasture, orchard, vineyard, and grazed annual grassland habitat	Low. Nearest CNDDDB record is 0.5 miles west of Site 1. May forage in area but there are no suitable burrows for dens at any of the work areas.

¹Status codes are defined as follows:

Federal status: USFWS Listing

FE = Listed as endangered under Endangered Species Act.

FT = Listed as threatened under Endangered Species Act.

California State Status: CDFG Listing

CE = Listed as endangered under California Endangered Species Act.

CT = Listed as threatened under California Endangered Species Act.

California Native Plant Society (CNPS) status:

1B.1 = Plant species that are seriously endangered in California

Vernal pool fairy shrimp (*Branchinecta lynchi*)

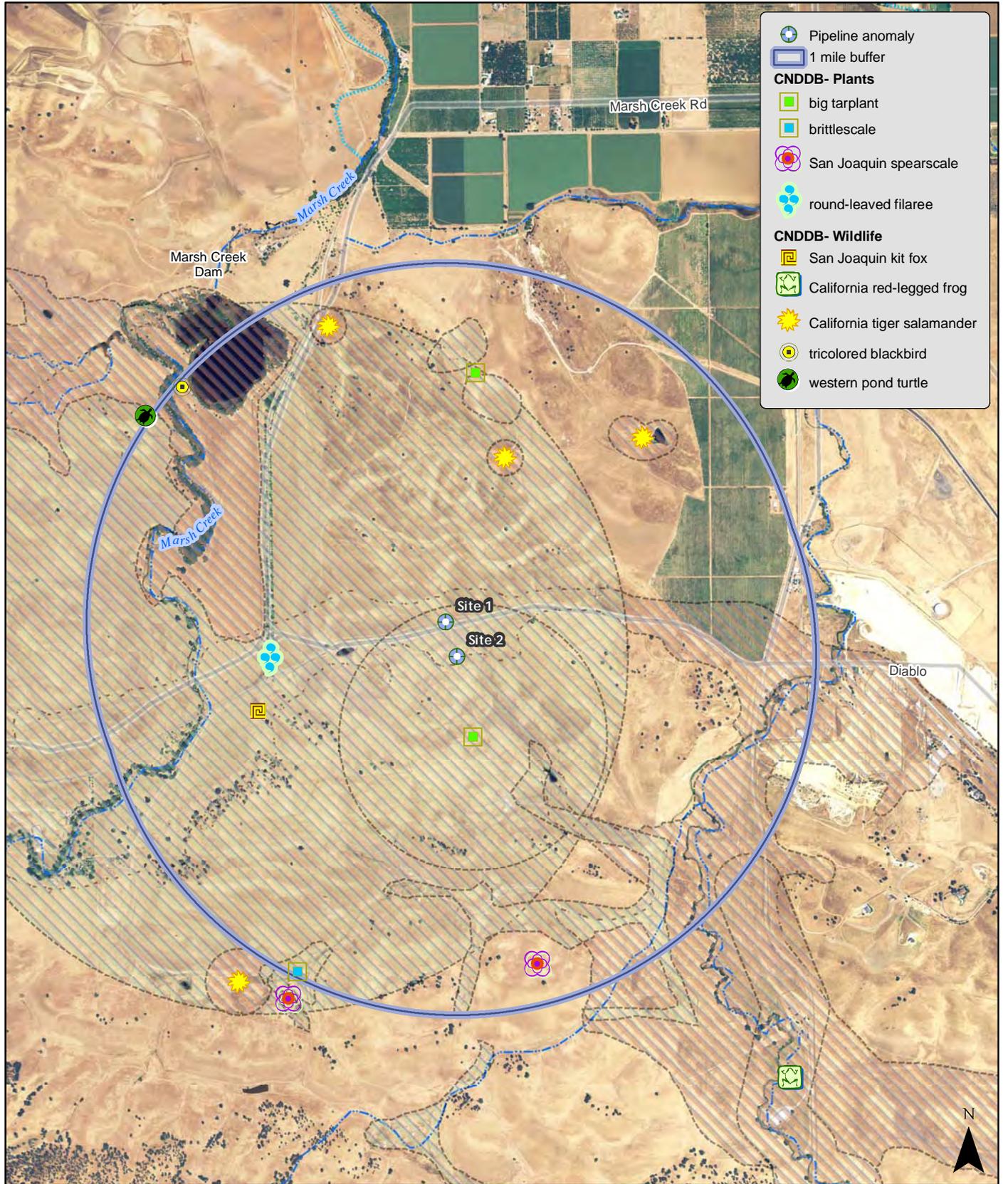
Longhorn fairy shrimp (*Branchinecta longiantenna*)

Conservancy fairy shrimp (*Branchinecta conservatio*)

Vernal pool tadpole shrimp (*Lepidurus packardii*)

Vernal pool, longhorn, Conservancy fairy shrimp as well as the vernal pool tadpole shrimp are federally listed invertebrates that occur in vernal pools and swales in the central valley, foothill and inner Coast Ranges of California. These animals have a very short life cycle, emerging from cysts in the ground shortly after the first substantial rains of the winter season. Within a few weeks to months, these animals reproduce and die as their pools become desiccated. The Springtown Wetland Reserve located immediately south of Site 3 is known to support vernal pool fairy shrimp (CDFG 2008) and is

designated critical habitat for vernal pool fairy shrimp (Unit VERFS 19C). Although this unit includes primarily lowland vernal pool habitat associated with the Springtown Wetland Reserve, a portion of the unit covers 0.1 miles (650 feet) of the access road to the anomaly at Site 3. This area would be traversed by vehicles and construction equipment including a tracked excavator. These vehicles and equipment would temporarily disturb the ground within this area; however, this area has been previously disturbed as recently as 2006 for a similar pipeline repair project. There is a vernal pool located adjacent to Site 1, however this habitat will be avoided during repair work at Site 1.

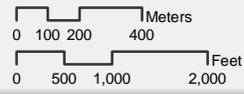


- Pipeline anomaly
- 1 mile buffer
- CNDDB- Plants**
- big tarplant
- brittle scale
- San Joaquin spearscale
- round-leaved filaree
- CNDDB- Wildlife**
- San Joaquin kit fox
- California red-legged frog
- California tiger salamander
- tricolored blackbird
- western pond turtle



Note: Some CTS locations are suppressed in the CNDDB. Records are mapped as center points for clarity but original polygon data is also displayed.

Figure 2a. Line 303 ILI project area and CNDDB occurrence records. Sites 1 and 2



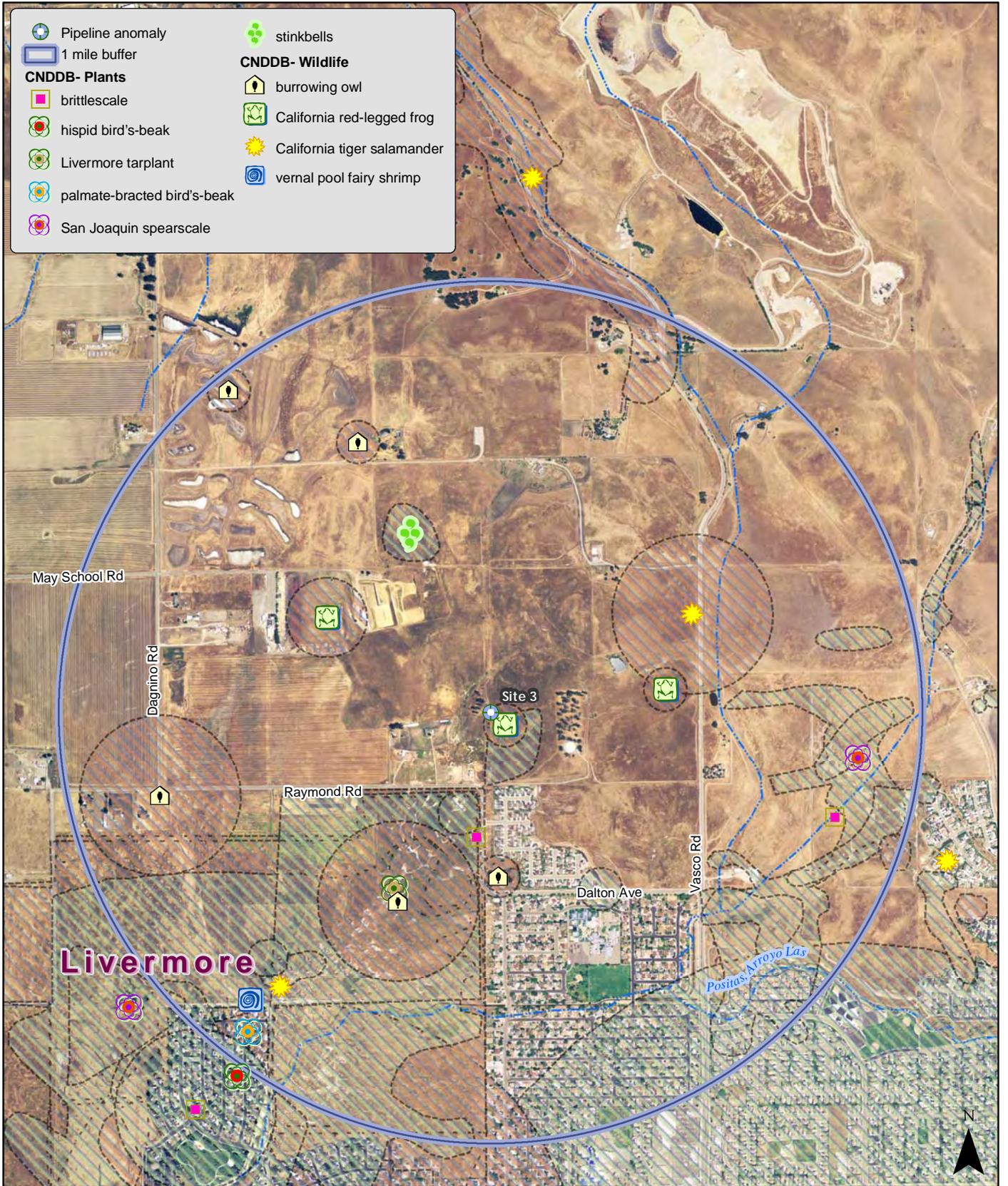


Figure 2b. Line 303 ILI project area and CNDDB occurrence records.

Site 3



Note: CNDDB records are mapped as center points for clarity but polygon data is also displayed.



California red-legged frog (*Rana draytonii*)

The federally threatened California red-legged frog occur primarily in ponds or pools of streams that retain water long enough for breeding and development of young (about 15 weeks). The adults often prefer dense, emergent or shoreline riparian vegetation closely associated with deep, still or slow-moving water (Jennings and Hayes 1994), but may also be found in unvegetated streamside areas that provide shade and shelter. Other key habitat features include good water quality and absence of introduced predators such as bullfrogs and predatory fishes. California red-legged frogs can aestivate in small mammal burrows and moist leaf litter within 200 feet of aquatic habitat, and they can disperse through upland habitats for distances of one mile or more at any time of year (USFWS 2002; USFWS 2005).

There is one CNDDDB record (EO-ID 6956) within one mile of Sites 1 and 2 along Kellogg Creek to the southeast. These sites contain suitable dispersal habitat for CRLF, as they are within 2.25 miles of suitable breeding habitat. Within one mile of Site 3, there are three CNDDDB records of CRLF (Figure 3b; CNDDDB 2008). The nearest occurrence to Site 3 is two adult California red-legged frogs that were observed in the stock pond located approximately 80 m southeast of the pipeline anomaly on September 13, 2007 (CNDDDB 2008; EO-ID 70872). This stock pond as well as the three stock ponds located approximately 80 m northwest of the pipeline anomaly are suitable red-legged frog breeding habitat (Figure 3b). Site 3 and associated work area contains both potential estivation and dispersal habitat for CRLF and may be affected by project-related activities.

The entire Project Area does not currently occur within designated critical habitat for California red-legged frog, however Sites 1 and 2 occur within proposed critical habitat unit CCS-2 and Site 3 occurs within proposed critical habitat unit ALA-2 (USFWS 2008). The nearest current designated critical habitat is located approximately 4 miles west of Site 1 (Unit ALA-1B). Potential project-related impacts to the red-legged frog include direct and indirect impacts. Direct impacts include crushing or injuring frogs present in work areas with equipment or vehicles. Indirect impacts include temporary or permanent alteration of habitats such that they cannot be used by red-legged frogs, introduction of non-native invasive plants, trash left on site that could attract predators, and sedimentation of aquatic habitats from vehicles crossing aquatic areas.

California tiger salamander (*Ambystoma californiense*)

The federally threatened California tiger salamander occurs in grassland and oak savannah habitats from sea level to about 1,500 feet in central California. Adult tiger salamanders are terrestrial. They breed in vernal pools and seasonal ponds, including active stockponds, but they aestivate throughout the summer in rodent burrow especially those of California ground squirrels and valley pocket gophers. Adults engage in mass migration during a few rainy nights and leave the breeding ponds shortly after, to forage in terrestrial habitat. Adults migrate up to 3,300 feet from aestivation sites to breeding ponds. Most breeding occurs December through March. In the coastal region,

populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County, and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties.

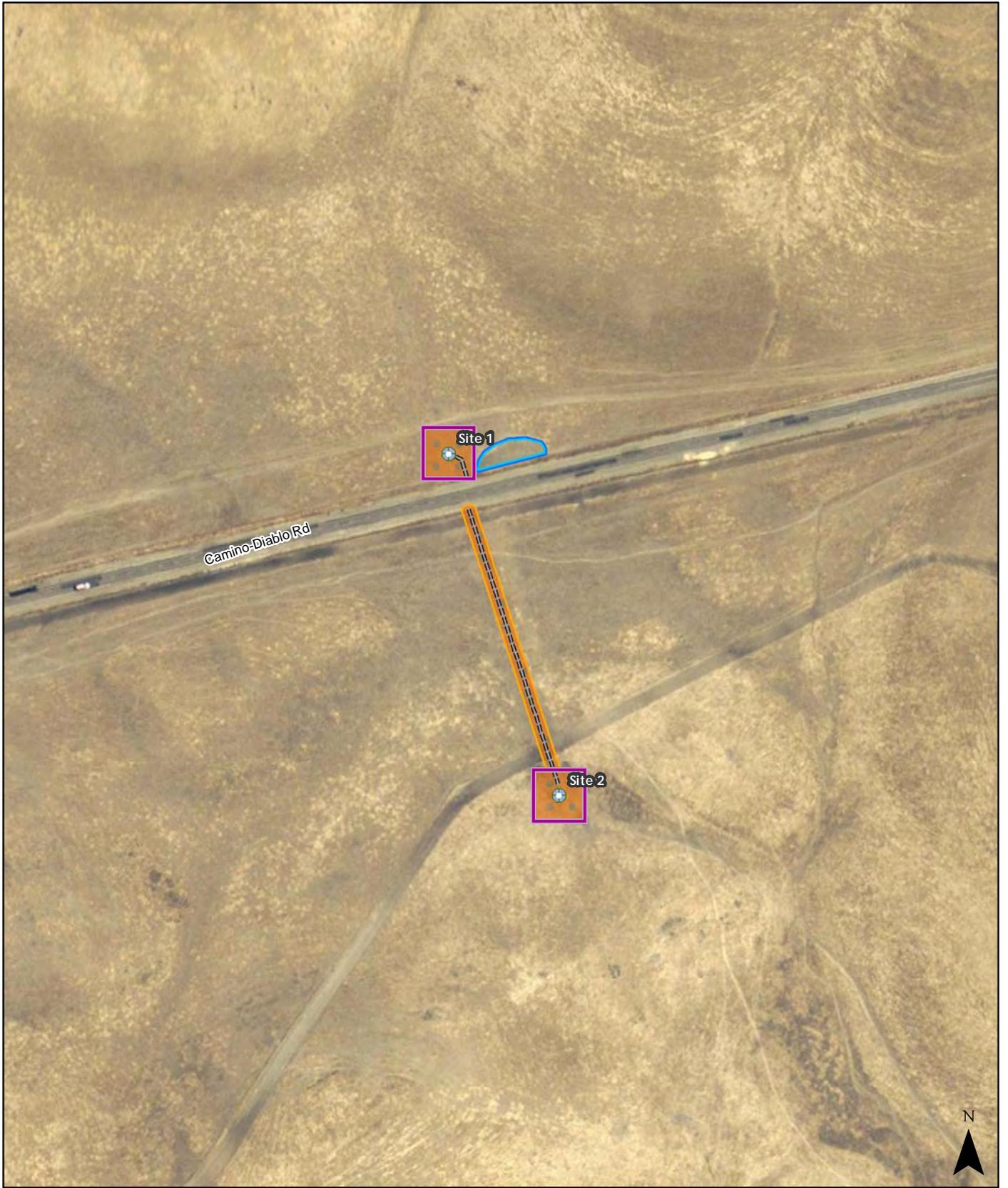
Within one mile of Sites 1 and 2, there are three CNDDDB records and several museum records of CTS (Figure 3a; CNDDDB 2008; MVZ 88652-54), including several breeding ponds within 0.5 miles of Site 1. Sites 1 and 2 contain suitable dispersal habitat for CTS. Within one mile of Site 3, there are two CNDDDB records of CTS (Figure 3a; CNDDDB 2008). The nearest occurrence to the Project Area is located approximately 1600 ft northeast of the Project Area (EO-ID 28427; CNDDDB 2008). The other occurrence is located approximately 0.8 miles southwest of the Project Area (EO-ID 1459) within the Springtown Wetland Reserve (CNDDDB 2008). The entire Project Area does not occur within designated critical habitat for California tiger salamander. The nearest critical habitat is located approximately 3.4 miles west of Site 3 (Unit 18). The 25 x 75 foot vernal pool located north of Camino Diablo Road at Site 1 does not appear to be suitable breeding habitat for CTS. California tiger salamanders are assumed to be present at all three sites within the Project Area and excavation of the pipe anomaly could potentially expose and/or harm salamanders located in underground burrows.

San Joaquin kit fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is federally endangered and state threatened. Kit foxes occur in a variety of habitat types, including grassland and scrubland communities. Kit fox utilize underground burrows as resting and denning areas. The nearest CNDDDB record of kit fox (EO-ID 67450) to Sites 1 and 2 is located approximately 0.5 miles west, at the intersection of Marsh Creek Road and Camino Diablo Road (Figure 3a). For Site 3, the nearest CNDDDB record is 3.1 miles northeast of the anomaly. No suitable burrows for dens were observed in the three work areas or access roads, but kit fox may forage or disperse through the Project Area. San Joaquin kit fox are not considered at risk from project activities. Although they may pass through the Project Area, there are no potential den sites within the Project Area. Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance (USFWS 1999b) will be implemented to avoid any potential project impacts to this species.

Avoidance and Mitigation

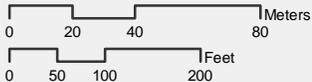
PG&E will implement measures to minimize and avoid the potential for “take” of the California red-legged frog and other listed species assumed present in the Project Area. These measures include all of the minimization measures described in the Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog (hereafter referred to as the CRLF PBO (California Red-legged Frog Programmatic Biological Opinion); USFWS 1999a; Appendix A). We have listed those measures below, modified them in some cases to be project-specific and referenced the measure from the PBO (Appendix A). These measures will also serve to avoid and/or minimize potential impacts to California tiger salamander and San Joaquin kit fox.

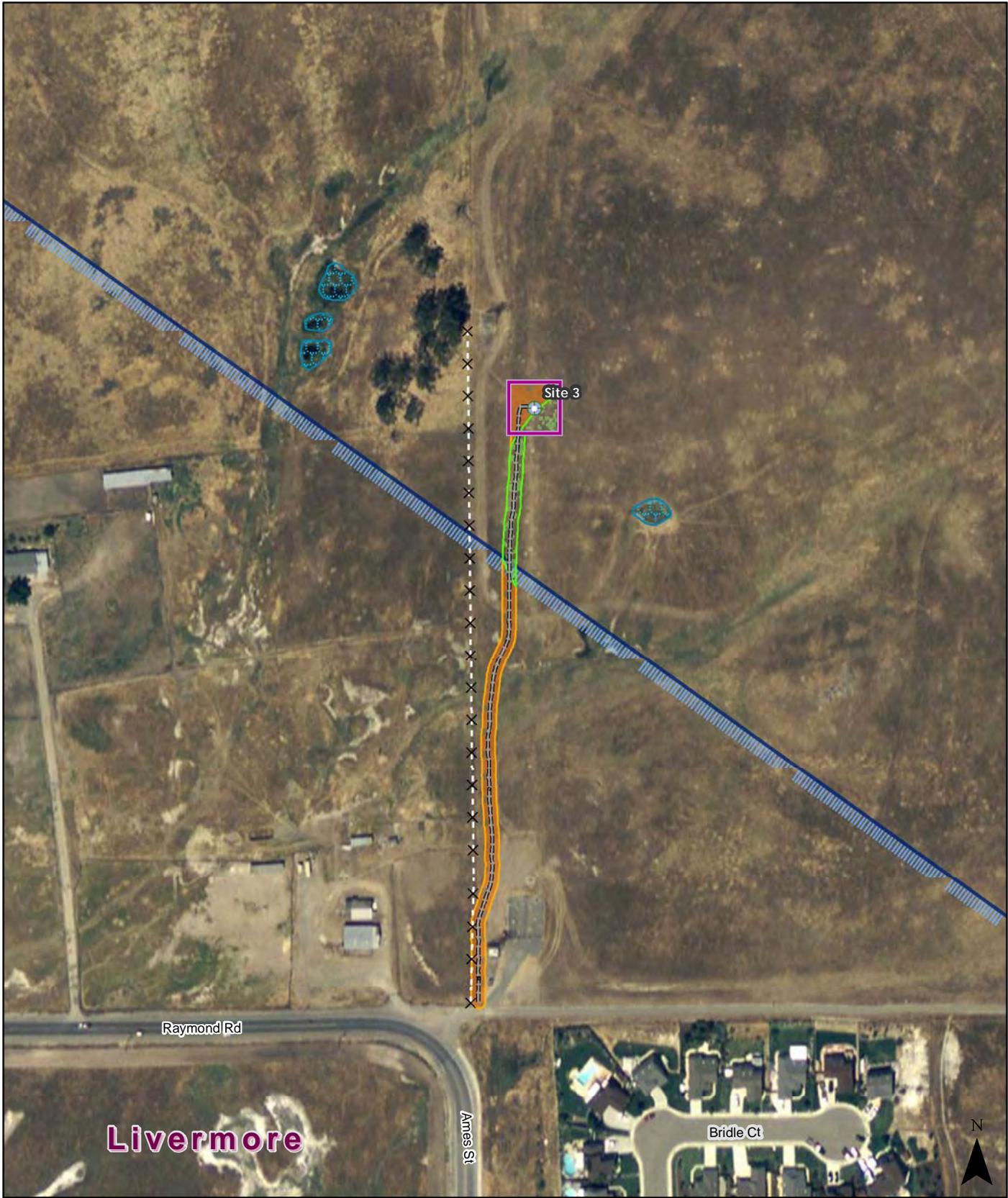


	Pipeline anomaly	Potential Wildlife Habitat	
	Access road		Dispersal habitat
	Fence		Estivation habitat
	Work area		Breeding habitat
	Vernal pool		



Figure 3a. Line 303 ILI wildlife habitat. Sites 1 and 2





- | | |
|---|-----------------------------------|
| Pipeline anomaly | Potential Wildlife Habitat |
| Access road | Dispersal habitat |
| Fence | Estivation habitat |
| Work area | Breeding habitat |
| Vernal pool fairy shrimp-Critical Habitat | |



Figure 3b. Line 303 ILI wildlife habitat. Site 3



Avoidance, Minimization, and Mitigation Measures:

1. PG&E will submit the names and credentials of biologists proposed to perform preconstruction surveys and monitoring to the USFWS for written approval at least 15 days prior to commencement of any activities. CRLF PBO Measure #1.

A Service-approved biologist will survey the sites two weeks before the onset of activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the Service to determine if moving any of these life-stages is appropriate. In making this determination the Service shall consider if an appropriate relocation site exists. If the Service approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the sites before work activities begin. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. If a California red-legged frog is found nearby, but outside a proposed site, it will not be disturbed and USFWS will be notified. The biologist will also report any observations of California tiger salamander, giant garter snake, vernal pool fairy shrimp, longhorn fairy shrimp and San Joaquin kit fox (CRLF PBO Measure # 2).

2. Before any construction activities begin on the project, a Service-approved biologist will conduct a training session for all construction personnel. The training will include a description of the listed species with potential to occur, their habitat, and the general measures that are being implemented to conserve the species as they relate to the project and the boundaries within which the project may accomplished (i.e. sites). CRLF PBO Measure # 3.
3. A Service-approved biologist will be present at the sites until all minimization and avoidance measures have been completed. After this time, a biological monitor, who has been trained per CRLF PBO measure 3 will remain on site during all construction activities, and will have the authority to halt any work activity that might result in impacts that exceed the levels anticipated by the Corps and Service during review of the proposed action. If work is stopped, the Corps and Service will be notified immediately by the Service-approved biologist or on-site monitor. CRLF PBO Measure #4.
4. During project activities, all trash that may attract predators will be properly contained, removed from the sites and disposed of regularly. Following construction, all trash and construction debris from sites will be removed. CRLF PBO Measure #5.
5. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 20 meters (66 feet) from any riparian habitat or water body. PG&E will ensure contamination of habitat does not occur during such operations. Prior to the start of construction, PG&E will prepare a plan to ensure

- a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. CRLF PBO Measure # 6.
6. A Service-approved biologist will ensure that the spread or introduction of invasive plant species will be avoided to the maximum extent possible. When practical, invasive exotic plants in the project area will be removed. CRLF PBO Measure #7.
 7. Project areas that are disturbed will be revegetated with an appropriate assemblage of native riparian, wetland and upland vegetation. CRLF PBO Measure #8. See Appendix C, Restoration and Monitoring Plan.
 8. Stream contours will be returned to their original condition at the end of project activities, unless consultation with the Service has determined that it is not beneficial to the species or feasible. CRLF PBO Measure #9.
 9. The number of access routes, number and size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Routes and boundaries will be clearly demarcated, and these areas will be outside of riparian and wetland areas to the extent feasible. For the work at Site 1, were a seasonal wetland cannot be avoided, the 50 x 50 foot work area will be delineated by fencing to limit impacts to adjacent wetland habitat. Where impacts occur in staging areas and access routes, restoration will be performed. CRLF PBO Measure # 10 (Appendix C).
 10. Work activities will be completed between April 1 and November 1. Should the proponent or applicant demonstrate a need to conduct activities outside this period, the Corps may authorize such activities after obtaining the Service's approval. CRLF PBO Measure #11.
 11. To control erosion during and after project implementation, PG&E will implement best management practices. CRLF PBO Measure # 12.
 12. A Service-approved biologist will permanently remove, from within the project area, any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes to the maximum extent possible. CRLF PBO Measure #14.
 13. A preconstruction nesting bird survey will be conducted for burrowing owl, and other special-status birds. If active nests are found, buffers will be established to avoid impact to these species. If adequate buffers cannot be established, construction work will be delayed until after the breeding season is fully completed or CDFG will be contacted to determine further action.

14. A preconstruction survey for San Joaquin kit fox will be performed 14 to 30 days prior to the beginning of ground disturbance. Surveys will follow guidance described in the U.S. Fish and Wildlife Service's "Standardized Recommendations for Protection of the San Joaquin kit fox prior to or during ground disturbance (USFWS 1999b).
15. Project-related vehicles should observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.
16. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 17 of this section must be followed.
17. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, Endangered Species Division, 2800 Cottage Way, Suite W2605, Sacramento, California 95825-1846, (916) 414-6620. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.
18. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
19. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.

Conclusion and Determination

The Line 303 In-Line Inspection Project will temporarily impact California red-legged frog and California tiger salamander habitat, as well as designated critical habitat for vernal pool fairy shrimp. The amount of habitat impacted including all work areas and access roads is summarized in Table 2. These calculations are based on the following assumptions:

- CRLF estivation habitat includes all areas within 200 feet of a potential breeding site.
- CRLF dispersal habitat includes all areas between 200 feet and 2.25 miles of a potential breeding site.
- CTS estivation habitat includes all areas within 525 feet of a potential breeding site.
- CTS dispersal habitat includes all areas between 525 feet and 3,300 feet of a potential breeding site.
- Each anomaly requires a work area of 50 x 50 feet
- The access road is 12 feet wide for each work area

Table 2. Acreage (square-feet) of temporary impacts to listed species habitat.

Species	Habitat Type	Site 1		Site 2		Site 3		Total
		Work area	Access Road	Work area	Access Road	Work area	Access Road	
California red-legged frog	Estivation	---	---	---	---	0.020 ac (871 ft. ²)	0.057 ac (2,483 ft. ²)	0.077 ac (3,354 ft. ²)
	Dispersal	0.057 ac (2,500 ft. ²)	0.004 ac (174 ft. ²)	0.057 ac (2,500 ft. ²)	0.115 ac (5,009 ft. ²)	0.037 ac (1,612 ft. ²)	0.181 ac (7,884 ft. ²)	0.451 ac (19,645 ft. ²)
California tiger salamander	Estivation	---	---	---	---	0.057 ac (2,500 ft. ²)	0.161 ac (7,013 ft. ²)	0.218 ac (9,496 ft. ²)
	Dispersal	0.057 ac (2,500 ft. ²)	0.004 ac (174 ft. ²)	0.057 ac (2,500 ft. ²)	0.115 ac (5,009 ft. ²)	---	0.077 ac (3,360 ft. ²)	0.310 ac (13,504 ft. ²)
Vernal Pool fairy shrimp		---	---	---	---	---	0.18 ac (7,920 ft. ²) of Critical Habitat Unit 19C	0.18 ac (7,920 ft. ²)

The project may affect individual California red-legged frogs and California tiger salamander if they are present in the Project Area and the proposed minimization and avoidance measures are unsuccessful. However, the number of individuals affected, if

any, would be low. Implementation of the measures described in this Biological Assessment, which include those described in the PBO for California red-legged frog will minimize the potential for take and exempt the project from the take prohibition in Section 9 of the ESA.

In addition to the federally protected California red-legged frogs and California tiger salamander, the project may affect, but is unlikely to adversely affect, the federally protected San Joaquin kit fox. Although no sign of this species was observed in the Project Area, it could travel through the project area. Through a combination of clearance surveys, worker education, and biological monitoring this species is not expected to be affected by project activities.

Fairy shrimp species are not expected to occur within the three work areas but the project will temporarily impact 0.18 acres of designated critical habitat for vernal pool fairy shrimp along an access road.

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**Appendix A: California Red-legged Frog Programmatic Biological Opinion
(USFWS 1999a)**



United States Department of the Interior

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January 26, 1999

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Subject: Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog

Dear Messrs. Champ, Fong, and Schubel

This document transmits the biological opinion of the U.S. Fish and Wildlife Service (Service) on issuance of permits under section 10 (§10) of the Rivers and Harbors Act of 1899 and section 404 (§404) of the Federal Water Pollution Control Act, as amended (Clean Water Act), for projects that may affect the California red-legged frog (*Rana aurora draytonii*). This consultation document has been prepared pursuant to 50 CFR 402 of our interagency regulations governing section 7 of the Endangered Species Act of 1973, as amended (Act).

This programmatic consultation evaluates the effects on California red-legged frogs of certain activities authorized by the Army Corps of Engineers (Corps) under Clean Water Act and Rivers and Harbors Act permits in all of Napa, Solano, Contra Costa, Alameda, San Francisco,

San Mateo (in part), Santa Clara, San Benito, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara and Ventura counties; all watersheds in Marin and Sonoma counties that drain toward San Francisco Bay; and in coastal draining watersheds in Marin and Sonoma counties, including and south of the Walker Creek watershed. Drainages in the Central Valley and south of the Transverse Ranges are excluded because the extreme rarity of the California red-legged frog in these areas warrants individual consultation in any circumstance where the Corps determines a project may affect the species.

San Francisco garter snakes (*Thamnophis sirtalis tetrataenia*) and California red-legged frogs may co-occur in western San Mateo County. Due to the rarity of the San Francisco garter snake, actions that would occur in western San Mateo County are excluded from this biological opinion.

CONSULTATION HISTORY

Since listing of the California red-legged frog, the Service and the Corps have consulted, both formally and informally, on a variety of projects. In some cases, temporary disturbance of habitat and incidental take of individuals in the form of mortality or harassment occurred, but resulted in no long-term adverse impacts to California red-legged frogs in the affected areas. Staff from Fish and Wildlife Service offices determined that many of the same protective measures, including the Corps' proposed special conditions and the Service's terms and conditions, were very similar from project to project. Consequently, both of the Fish and Wildlife Offices within the range of the species collaborated in the preparation of this biological opinion.

ADMINISTRATION OF THE BIOLOGICAL OPINION

This programmatic consultation will be implemented in the following manner. The Corps will begin the consulting process by making a determination of whether the action under consideration may affect the California red-legged frog, as required by the implementing regulations for section 7 of the Act. If the Corps determines the project is not likely to adversely affect the California red-legged frog, it will seek the Service's concurrence in writing pursuant to 50 CFR 402.14(b)(1). If the Corps determines the proposed action is likely to adversely affect the California red-legged frog, the Corps will next consider whether the potential effects of the proposed action may be covered by this biological opinion.

If the Service or the Corps determines that the potential effects of the proposed action, including the indirect, interrelated and interdependent effects, are too great for the action to be covered by this biological opinion, the standard provisions for section 7 consultation apply throughout the remainder of the review process. If the Corps finds that the proposed action meets the criteria for consideration under this biological opinion, the Corps shall contact the Service, in writing, for Service concurrence, generally within 30 days, with the Corps' determination. At this time, the Corps shall provide to the Service the following information (prior to authorization):

1) a 7 ½ minute topographic map or a copy of the appropriate topographic map with the name of the map. Such maps shall indicate where the project site is located, restoration sites, and potential frog relocation sites; 2) a written description of the activity, including but not limited to, construction methods, time of year the work would occur, vegetation restoration and monitoring plans, and frog monitoring plan; and 3) one plan view and a minimum of one typical cross section indicating water bodies, vegetation types, work areas, roads, restoration sites, and refueling and staging areas.

Projects that do not meet the suitability criteria may be appended to this opinion, upon Service approval, if use of additional minimization measures sufficiently reduce the effects of the action to be consistent with the intent of this opinion. Projects that do not meet the suitability criteria, such as individual permit applications under section 404 of the Clean Water Act or section 10 of the Rivers and Harbors Act, may have effects on the frog similar in nature to those described under the Nationwide Permits below. The Service shall be available for consultation during all phases of project evaluation to assist the Corps with its effects determination.

Yearly, the Service shall evaluate the effects of actions that have occurred under this programmatic consultation to ensure that its continued implementation does not result in long-term adverse effects to the ecosystems upon which the California red-legged frog depends. This opinion may be modified to address problems with the programmatic process or excessive adverse effects on listed species.

BIOLOGICAL OPINION

Description of the Proposed Action

Suitability Criteria

Actions that fall under this consultation are projects that may adversely affect California red-legged frogs either by take of individuals, or through temporary disturbance or permanent loss of upland, riparian, or wetland red-legged frog habitat, or both, but which nonetheless do not contribute to a decline in California red-legged frogs in the affected area (see "Environmental Baseline" below). Actions that the Corps has permitted, and have undergone formal consultation with the Service, that meet these criteria include, but are not limited to: earthquake retrofitting, repair and widening of bridges, repair of bank protection, replacement of low-flow stream crossings with bridges, and small-scale stabilization of stream slopes.

Projects that meet the suitability criteria and may involve some or all of the preceding activities often occur under Nationwide Permits (NWP). To guide the Corps during project evaluation, the Service has reviewed the Nationwide Permits the Corps has issued under 33 CFR 330.3 (most recently described at 61 FR 65874) and has determined that projects typically authorized under the NWPs listed below (and amended herein) are likely to meet the suitability criteria described

above, provided that: 1) the additional minimization measures provided herein are implemented; 2) projects are single and complete projects and not part of larger actions, such as housing subdivision or golf course projects; 3) projects would not, in the Service's opinion, take place in areas where populations of California red-legged frogs are so isolated that even the small effects described below may have significant impacts. When the NWP program is reauthorized the Corps shall evaluate the new program and its consistency with this biological opinion. If it is determined that there are differences in the effects, amount or extent of incidental take, new permits that were not considered, or other information not considered then this biological opinion will be reinitiated and amended as necessary.

Nationwide Permit Activities

- (#3) Maintenance.
- (#5) Scientific Measuring Devices.
- (#6) Survey Activities.
- (#7) Outfall Structures.
- (#12) Utility Line Discharges.
- (#13) Bank Stabilization, provided that activity is less than fifty (50) feet in length.
- (#14) Road Crossings.
- (#15) U.S. Coast Guard Approved Bridges.
- (#17) Hydropower Projects.
- (#18) Minor Discharges.
- (#19) Minor Dredging.
- (#23) Approved Categorical Exclusions
- (#25) Structural Discharges.
- (#27) Wetland and Riparian Restoration and Creation Activities.
- (#31) Maintenance of Existing Flood Control Facilities.
- (#32) Completed Enforcement Actions.
- (#33) Temporary Construction, Access and Dewatering.
- (#37) Emergency Watershed Protection and Rehabilitation.
- (#38) Cleanup of Hazardous and Toxic Waste.

Minimization of Adverse Effects

To the maximum extent practicable, projects authorized under this biological opinion shall be designed and implemented in such a way as to minimize adverse effects to California red-legged frogs or their habitat. To achieve that purpose, the following measures shall be taken as a minimum:

At least 15 days prior to the onset of activities, the applicant or project proponent shall submit the name(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities shall begin until proponents have

received written approval from the Service that the biologist(s) is qualified to conduct the work.

- 2 A Service-approved biologist shall survey the work site two weeks before the onset of activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist shall contact the Service to determine if moving any of these life-stages is appropriate. In making this determination the Service shall consider if an appropriate relocation site exists. If the Service approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only Service-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
- 3 Before any construction activities begin on a project, a Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the California red-legged frog and its habitat, the importance of the California red-legged frog and its habitat, the general measures that are being implemented to conserve the California red-legged frog as they relate to the project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
- 4 A Service-approved biologist shall be present at the work site until such time as all removal of California red-legged frogs, instruction of workers, and habitat disturbance have been completed. After this time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist shall ensure that this individual receives training outlined above in measure 3 and in the identification of California red-legged frogs. The monitor and the Service-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the Corps and Service during review of the proposed action. If work is stopped, the Corps and Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.
- 5 During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
- 6 All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 20 meters from any riparian habitat or water body. The Corps and permittee shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Corps shall ensure that the permittee has prepared a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of

the importance of preventing spills and of the appropriate measures to take should a spill occur.

7. A Service-approved biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed.
8. Project sites shall be revegetated with an appropriate assemblage of native riparian wetland and upland vegetation suitable for the area. A species list and restoration and monitoring plan shall be included with the project proposal for review and approval by the Service and the Corps. Such a plan must include, but not be limited to, location of the restoration, species to be used, restoration techniques, time of year the work will be done, identifiable success criteria for completion, and remedial actions if the success criteria are not achieved.
9. Stream contours shall be returned to their original condition at the end of project activities, unless consultation with the Service has determined that it is not beneficial to the species or feasible.
10. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries shall be clearly demarcated, and these areas shall be outside of riparian and wetland areas. Where impacts occur in these staging areas and access routes, restoration shall occur as identified in measures 8 and 9 above.

Work activities shall be completed between April 1 and November 1. Should the proponent or applicant demonstrate a need to conduct activities outside this period, the Corps may authorize such activities after obtaining the Service's approval.
12. To control erosion during and after project implementation, the applicant shall implement best management practices, as identified by the appropriate Regional Water Quality Control Board.
13. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters (mm) to prevent California red-legged frogs from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
14. A Service-approved biologist shall permanently remove, from within the project area, any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the

Messrs. Art Champ, Calvin Fong, and Richard Schubel

maximum extent possible. The permittee shall have the responsibility to ensure that their activities are in compliance with the California Fish and Game Code.

Species Account

Description. The California red-legged frog is a relatively large aquatic frog ranging from 4 to 13 centimeters (1 1/2 to 5 inches) from the tip of the snout to the vent (Stebbins 1985). From above, the frog can appear brown, gray, olive, red or orange, often with a pattern of dark flecks or spots. The back of the frog is bordered on either side by an often prominent ridge (dorsolateral fold) running from the eye to the hip. The hind legs are well-developed with large, webbed feet. A cream, white, or orange stripe usually extends along the upper lip from beneath the eye to the rear of the jaw. The undersides of adult frogs are white, usually with patches of bright red or orange on the abdomen and hindlegs. The groin area sometimes exhibits bold black mottling with a white or yellow background.

Life History. California red-legged frogs breed from November through March; earlier breeding has been recorded in southern localities (Storer 1925). Males have paired vocal sacs and call in air (Hayes and Krempels 1986). Males appear at breeding sites from two to four weeks before females (Storer 1925). They typically call in small, mobile groups of three to seven individuals to attract females (Jennings and Hayes 1985). Females individually move toward a male or male calling group. Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water (Hayes and Miyamoto 1984). Egg masses contain about 2,000 to 5,000 moderate-sized (2.0 to 2.8 mm in diameter; 0.08 to 0.11 inches), dark reddish brown eggs (Storer 1925, Jennings and Hayes 1985). Eggs hatch in 6 to 14 days (Storer 1925). Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925, Wright and Wright 1949, Jennings and Hayes 1990). Egg predation is infrequent; most mortality probably occurs during the tadpole stage (Licht 1974) although eggs are susceptible to being washed away from high stream flows. Schneider and Nauman (1994) report that the California red-legged frog eggs have a defense against predation which is possibly related to the nature of the egg mass jelly. Schmieler and Nauman (1994) report that California red-legged frog larvae are highly vulnerable to fish predation; larvae appear to be most vulnerable to fish predation immediately after hatching when the nonfeeding larvae are relatively immobile. Sexual maturity can be attained at two years of age by males and three years of age by females (Jennings and Hayes 1985); adults may live 8 to 10 years (Jennings *et al.* 1992) although the average life span is considered to be much lower.

The diet of California red-legged frogs is highly variable. Tadpoles probably eat algae (Jennings *et al.* 1992). Hayes and Tennant (1985) found invertebrates to be the most common food item for adults. Vertebrates such as Pacific tree frogs and California mice (*Peromyscus californicus*), represented over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Feeding activity probably occurs along the shoreline and on the surface of the water. Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal.

Habitat. California red-legged frogs have been found at elevations that range from sea level to about 1,500 meters (5,000 feet). The frog uses a variety of habitat types, which include various aquatic systems, riparian, and upland habitats. The following habitat descriptions are meant to describe the range of habitat types utilized by California red-legged frogs. However, there is much variation in how frogs use the environment and in many cases frogs may complete their entire life cycle in a particular area without using other components (*i.e.*, a pond is suitable for each life stage and use of upland habitat or a riparian corridor is not necessary). California red-legged frogs are adapted to survive in a variable Mediterranean climate and survive temporal and spatial changes in habitat quality; the frog's variable life history enables it to change habitat use according to the year to year conditions and in response to adverse conditions. Populations appear to persist where a mosaic of habitat elements exists, embedded within a matrix of dispersal habitat. Here, local extinctions may be counterbalanced by recolonizations of new or unoccupied areas of suitable habitat. This interpretation corresponds with the notion that California red-legged frogs persist in what ecologists refer to as metapopulation; a collection of sub-populations that exchange dispersers.

Breeding Habitat. Breeding sites of the California red-legged frog are in aquatic habitats; larvae, juveniles and adult frogs have been collected from streams, creeks, ponds, marshes, sag ponds, deep pools and backwaters within streams and creeks, dune ponds, lagoons and estuaries. California red-legged frogs frequently breed in artificial impoundments such as stock ponds given the proper management of hydro-period, pond structure, vegetative cover, and control of exotic predators. The importance of riparian vegetation for this species is not well understood. While frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky egg and tadpole environments. When this vegetation type is present, frogs spend considerable time resting and feeding in it; it is believed the moisture and camouflage provided by the riparian plant community provide good foraging habitat and may facilitate dispersal in addition to providing pools and backwater aquatic areas for breeding. Radio telemetry studies showed that individual California red-legged frogs move within the riparian zone from vegetated areas to pools (G. Rathbun, pers. comm.).

Breeding adults are often associated with dense, shrubby riparian or emergent vegetation and areas with deep (>0.7 meter) still or slow-moving water (Hayes and Jennings 1988); the largest summer densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). However, frogs often successfully breed in artificial ponds with little or no emergent vegetation and have been observed in stream reaches that are not cloaked in riparian vegetation. An important factor influencing the suitability of aquatic breeding sites is the general lack of introduced aquatic predators.

California red-legged frogs are sensitive to high salinity. When eggs are exposed to salinity levels greater than 4.5 parts per thousand, 100 percent mortality occurs and larvae die when exposed to salinities greater than 7.0 parts per thousand (Jennings and Hayes 1990). Nussbaum *et al.* (1983) state that early red-legged frog (*Rana u. aurora*) embryos are tolerant of

temperatures only between 9 and 21 degrees Centigrade (48 and 70 degrees Fahrenheit), and both the lower and upper lethals are the most extreme known for any North American ranid frog. Data specific to the California red-legged frog are not available.

Dispersal and Use of Uplands

At any time of the year, juvenile and adult California red-legged frogs may move from breeding sites. They can be encountered living within streams at distances exceeding three kilometers (1.8 miles) from the breeding site and have been found up to 30 meters (100 feet) from water in adjacent dense riparian vegetation for up to 77 days (Rathbun *et al.* 1993). During periods of wet weather, starting with the first rains of fall, some individuals may make overland excursions through upland habitats. Most of these overland movements occur at night. Evidence from marked frogs on the San Simeon coast of California suggests that frog movements via upland habitats of about one mile are possible over the course of a wet season and frogs have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats (N. Scott, *pers. com.* 1998). Dispersing frogs in northern Santa Cruz County traveled distances from one-quarter mile to more than two miles without apparent regard to topography, vegetation type, or riparian corridors (J. Bulger, *in litt.* 1998). The manner in which California red-legged frogs use upland habitats is not well understood; how much time California red-legged frogs spend in upland habitats, patterns of use, and whether there is differential use of uplands by juveniles, subadults and adults are being studied. Dispersal distances are largely unknown and are considered to be dependent on habitat availability and environmental variability.

Summer Habitat. California red-legged frogs often disperse from their breeding habitat to forage and seek summer habitat. This could include boulders or rocks and organic debris such as downed trees or logs; industrial debris; and agricultural features, such as drains, watering troughs, spring boxes, abandoned sheds, or hay-ricks. California red-legged frogs use small mammal burrows and moist leaf litter (Jennings and Hayes 1994); incised stream channels with portions narrower and deeper than 46 centimeters (18 inches) may also provide habitat (61 FR 25813). This type of dispersal and habitat use, however, is not observed in all red-legged frogs and is most likely dependent on the year to year variations in climate and habitat suitability and varying requisites per life stage. For the California red-legged frog, this habitat is potentially all aquatic and riparian areas within the range of the species and includes any landscape features that provide cover and moisture (61 FR 25813); the distances that frogs will disperse to reach summer habitat is not fully understood and is currently a topic of study.

Distribution. The historical range of the California red-legged frog extended coastally from the vicinity of Point Reyes National Seashore, Marin County, California and inland from the vicinity of Redding, California southward to northwestern Baja California, Mexico (Jennings and Hayes 1985, Storer 1925, Hayes and Krempels 1986). The California red-legged frog has sustained a 70 percent reduction in its geographic range as a result of several factors acting singly or in combination (Jennings *et al.* 1992). Habitat loss and alteration, over-exploitation, and

introduction of exotic predators were significant factors in the species' decline in the early- to mid-1900s. Reservoir construction, expansion of introduced predators, grazing and prolonged drought fragmented and eliminated many of the Sierra Nevada foothill populations. Only a few drainages are currently known to support California red-legged frogs in the Sierra Nevada foothills, compared to more than 60 historical records. Several researchers in central California have noted the decline and eventual disappearance of California red-legged frog once bullfrogs (*Rana catesbiana*) become established at the same site (L. Hunt, *in litt.*, 1993; S. Barry, *in litt.*, 1992; S. Sweet, *in litt.*, 1993). Bullfrogs prey on California red-legged frogs (Twedt 1993; S. Sweet, *in litt.* 1993) and interfere with their reproduction (Jennings and Hayes 1990, Twedt 1993, M. Jennings, *in litt.*, 1993, R. Stebbins, *in litt.*, 1993). Because of these combined threats, the California red-legged frog was listed as threatened on May 23, 1996 (61 FR 25813).

Environmental Baseline

The mechanisms for decline of the California red-legged frog are poorly understood. Although presence of California red-legged frogs is correlated with stillwater pools deeper than about 0.5 meter, riparian shrubbery, and emergent vegetation (Jennings and Hayes 1985), there are numerous locations in the historical range of the frog where these elements are well represented yet California red-legged frogs appear to be absent. The cause of local extirpations therefore does not appear to be restricted to absolute loss of aquatic habitat (Shaffer and Fisher 1996). The most likely causes of local extirpation are thought to be changes in faunal composition of aquatic ecosystems, *i.e.*, the introduction of non-native predators and competitors; and landscape-scale disturbances that disrupt California red-legged frog population processes, such as dispersal and colonization. Subtle environmental changes, such as the introduction of contaminants or changes in water temperature, may also play a role in local extirpations. These changes may also promote the spread of predators, competitors, parasites and diseases.

The processes described above are known to be heightened by urbanization. For instance, an increase in certain native and nonnative predators and competitors accompanies an increase in the local human population; disruption of dispersal likely results from an increase in barriers and sinks; and changes in hydroperiod, water temperature, and chemical composition of water bodies are readily traced to irrigation, gray water disposal, and urban runoff.

Effects of the Proposed Action

Activities that would be covered under this biological opinion are those that would not cause ecosystem-scale changes and, therefore, would likely not contribute to the decline of the California red-legged frog. Direct impacts to adults, sub-adults, tadpoles, and eggs of the California red-legged frog in the footprint of projects covered by this biological opinion would include injury or mortality from being crushed by earth moving equipment, construction debris, and worker foot traffic. These impacts would be reduced by minimizing and clearly demarcating the boundaries of the project areas and equipment access routes and locating staging areas outside of riparian areas or other water bodies. Avoiding work activities during the breeding

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season would reduce adverse impacts, particularly to eggs and tadpoles. In addition, relocating individual California red-legged frogs may further minimize injury or mortality.

The capture and handling of California red-legged frogs to move them from a work area involves harassment of individuals. Mortality may occur as a result of improper handling, containment, or transport of individuals or from releasing them into unsuitable habitat. Improper handling, containment, or transport of individuals would be reduced or prevented by use of a Service-approved biologist. Removal of exotic species from a project site may result in lower mortality to resident California red-legged frogs, therefore minimizing the overall effects of the action.

Work activities, including noise and vibration, may harass California red-legged frogs by causing them to leave the work area. This disturbance may increase the potential for predation and desiccation. Minimizing the area disturbed by project activities and constraining activities to seasonal limits would reduce the potential for dispersal resulting from the action.

Tadpoles may be entrained by pump intakes, if such devices are used to dry out work areas. Screening pump intakes with wire with no greater than five millimeter (mm) mesh diameter should reduce the potential that tadpoles greater than eight weeks old would be caught in the inflow.

Some potential also exists for disturbance of habitat to cause the spread or establishment of non-native invasive species, such as giant reed (*Arundo donax*) or salt cedar (*Tamarix* spp.). Measures to prevent the spread or introduction of these species, such as avoiding areas with established native vegetation, restoring disturbed areas with native species, and post-project monitoring and control of exotic species, could reduce or eliminate this effect.

California red-legged frogs may sustain harassment and mortality from predators. If water that is impounded during or after work activities creates favorable habitat for non-native predators, such as bullfrogs, crayfish, and centrarchid fishes, California red-legged frogs may suffer abnormally high rates of predation. Additionally, any time California red-legged frogs are concentrated in a small area at unusually high densities, native predators such as herons, egrets, opossums, and raccoons may feed on them opportunistically. This impact can be minimized by avoiding creation of ponded water as a result of project actions unless approved by the Service and/or predator control.

Trash left during or after project activities could attract predators to work sites, which could, in turn, harass or prey on the listed species. For example, raccoons are attracted to trash and also prey opportunistically on the California red-legged frog. This potential impact can be reduced or avoided by careful control of waste products at all work sites.

Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade water quality or upland habitat to a degree where the California red-legged frog is adversely affected or killed. The potential for this impact to occur can be reduced by thoroughly

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informing workers of the importance of preventing hazardous materials from entering the environment, locating staging and fueling areas a minimum of 20 meters from riparian areas or other water bodies, and by having an effective spill response plan in place.

Work in live streams or in floodplains could cause unusually high levels of siltation downstream. This siltation could smother eggs of the California red-legged frog and alter the quality of the habitat to the extent that use by individuals of the species is precluded. Implementing best management practices and reducing the area to be disturbed to the minimum necessary should assist in reducing the amount of sediment that is washed downstream as a result of project activities.

Under the provisions of this consultation, some features of the site may be permanently or temporarily altered. For example, a bridge retrofitted for earthquake safety may have slightly larger footings after work is complete, or a small culvert might create a pool. Minor alterations such as these likely do not constitute a consequential loss of habitat.

The potential exists for uninformed workers to intentionally or unintentionally harass, injure, harm, or kill California red-legged frogs. The potential for this impact could be greatly reduced by informing workers of the presence and protected status of this species and the measures that are being implemented to protect it during project activities.

The ongoing effects of this consultation on the California red-legged frog would be monitored through annual reports provided by the Corps to the Service. These reports would enable the agencies to determine how much habitat has been temporarily and permanently affected by the covered actions and how many California red-legged frogs have been killed or injured.

Based on analysis of data for habitats impacted by the Nationwide Permit Program, the Service has determined that upland, wetland and riparian habitats suitable for the California red-legged frog will be lost. The Service found that for Fiscal years 1993, 1994, and 1995, 59.37, 60.34, and 56.94 acres of wetlands respectively, including riparian habitat, were lost for reporting and non-reporting nationwide permits combined within the Corps' Sacramento and San Francisco Districts. The range for reporting nationwide permits was from 11.34 acres to 44.89 acres for fiscal years 1993 to 1997. Acres impacted for non-reporting nationwides was from 43.75 acres to 45.6 acres for fiscal years 1992 to 1995. These habitat impacts represent total acres impacted by the Nationwide Permit Program, and are not necessarily all California red-legged frog habitat. The Service does not have similar data for habitats impacted by the Nationwide Permit Program in the Los Angeles District.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future

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Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Non-Federal activities expected to occur within the project area considered under this biological opinion include water treatment, potential release of toxic substances, water diversions, residential and commercial development activity, agricultural practices, intentional or unintentional release of native and non-native predators into water bodies, and grazing on private and municipal lands. The Service anticipates that the effects of these non-Federal activities would be addressed through section 10(a)(1)(B) permits. Habitat conservation plans that are required to obtain such permits would include measures that would minimize and mitigate the effects to the California red-legged frog resulting from the non-Federal activities. In addition, the persistence of the California red-legged frog in the affected area would not be diminished by the activities covered under this programmatic consultation. Therefore, the cumulative effects of the projects included in this biological opinion, considered together with other non-Federal actions, would not appreciably reduce the likelihood of survival and recovery of the California red-legged frog.

Conclusion

After reviewing the current status of the California red-legged frog, the environmental baseline for the area covered by this consultation, the effects of the proposed projects, and the cumulative effects, it is the Service's biological opinion that the proposed projects, as described in this consultation document, are not likely to jeopardize the continued existence of this species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The reasonable and prudent measures described below are nondiscretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to

the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates the following forms of incidental take

Based on historical data about habitat impacts from the Nationwide Permit Program, the Service anticipates that up to 60 acres of wetland and riparian habitat and up to 60 acres of upland habitat, suitable for the California red-legged frog, may be permanently or temporarily taken annually as a result of implementing the actions described in the project description. In addition, the Service anticipates that all adults, juveniles, tadpoles, and eggs of California red-legged frogs associated with the loss of 60 acres of wetland and riparian habitat and 60 acres of upland habitat may be taken through mortality, harm, or harassment resulting from project-related activities. The quantification of take by harassment, harm, and mortality is difficult to ascertain because of the species' small size and aquatic habitat. These factors make it difficult to detect where California red-legged frogs, particularly tadpoles, are and if any have been affected by an action. For actions covered by this consultation, some harassment and mortality could be directly observed from those captured during translocation efforts. However, mortality from other sources would be difficult to observe.

The observed take may be lower than the actual take. However, with the implementation of the reasonable and prudent measures, the effects of the unobserved take would not change our analysis of effects of the actions covered by the biological opinion.

Effect of the Take

It is the opinion of the Service that the effects of the actions included under the auspices of this formal consultation are not likely to jeopardize the continued existence of the California red-legged frog.

Reasonable and Prudent Measures

The following reasonable and prudent measure is necessary and appropriate to minimize the impact of take on the California red-legged frog:

Adverse effects to California red-legged frogs and their habitat shall be minimized to the extent possible.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, the Corps must ensure that the permittees comply with the following term and condition, which implements the reasonable and prudent measure described above.

To implement the reasonable and prudent measure, the measures described in the "Minimization of Adverse Effects" section shall be fully implemented. These measures are hereby incorporated into this term and condition as requirements of proposed projects.

Disposition of Injured or Dead Specimens

Upon locating dead or injured California red-legged frogs, initial notification must be made in writing to the appropriate office of the Service's Division of Law Enforcement. Notification by both telephone and writing also must be made to the appropriate Fish and Wildlife Office:

U.S. Fish and Wildlife Service
Division of Law Enforcement
3310 El Camino Avenue, Suite 140
Sacramento, California 95821-6340

U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340
(916) 979-2725

U.S. Fish and Wildlife Service
Division of Law Enforcement
1633 Bayshore Highway, Suite 248
Burlingame, California 94010

U.S. Fish and Wildlife Service
Division of Law Enforcement
370 Amapola Avenue, Suite 114
Torrance, California 90501

U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003
(805) 644-1766

Notification shall occur within three working days of finding the dead or injured animal. The report shall include the date, time, location of any carcass, a photograph, cause of death, if known, and any other pertinent information.

Care shall be taken in handling injured animals to prevent additional injury. Injured animals may be released to the wild after receipt of concurrence from the Service. Care shall be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Standard preservation methods shall be used. The remains of intact California red-legged frogs shall be placed with the California Academy of Sciences Herpetology Department [Contact: Jens Vindum, Collections Manager, California Academy of Sciences Herpetology Department, Golden Gate Park, San Francisco, California, 94118, (415) 750-7037].

REPORTING REQUIREMENTS

The Corps shall require each permittee who makes use of the provisions of this programmatic consultation to prepare a compliance certification to be filed with the Corps and the Service to certify, after completion of construction, that the action was completed in accordance with the permit conditions. The information contained in the compliance certification shall include:

- 1) the type(s) of action(s) that occurred
- 2) the number of acres affected and habitat type (e.g., upland, riparian.);
- 3) the linear feet of work;
- 4) how the site(s) was restored and a description of the area after the completion of the action;
- 5) which measures were employed to protect California red-legged frogs;
- 6) how the site(s) was restored or, if no restoration occurred the justification for not conducting this work; and,
- 7) a description of the area after the completion of the action

The Corps shall provide to the Service annually a listing of permits authorized under this biological opinion. Such a list shall provide the name of the permittee, Corps authorization number, and the location. This is information the Corps routinely tracks and can be provided either as a paper version or electronically. The Service and the Corps shall meet annually to review this information as well as information provided by permittees. The Corps may desire to develop a reporting format in coordination with the Service soon after issuance of this biological opinion, which can be provided to permittees.

Each compliance certification provided by the permittees shall contain maps as appropriate indicating the location of all actions. Each report shall have a table and photos keyed to the map as appropriate. The compliance certification shall also document the number of California red-legged frogs that were known to be taken, and the form of take (e.g., harassment by moving, mortality) during each project's activities. The Service recognizes that accurately quantifying the number of individuals that may have been taken may not be possible; in these cases, the reporting of all observations and relative numbers would provide useful information. The report shall also recommend modifications to future measures to enhance the protection of the California red-legged frog.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibilities for this species.

Coordinate with the Service to develop a conservation strategy for the California red-legged frog, including documenting past and present California red-legged frog localities, threats, and conservation opportunities.

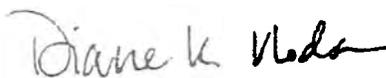
2. Monitor the status of the California red-legged frog in areas of Corps jurisdiction to identify effects of urbanization on the resident California red-legged frog population.
3. The Corps should assist the Service in implementation of recovery actions identified by the Service during and after preparation of the recovery plan for the California red-legged frog.
4. The Corps, through its Federal projects, should develop and implement strategies for the conservation and recovery of the California red-legged frog.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

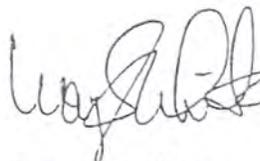
REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the project described in this biological opinion. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law), and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the Corps shall not issue authorizations under this biological opinion. If you have any questions regarding this opinion, please contact the appropriate field office staff member as indicated in Enclosure A.

Sincerely



Diane K. Noda
Field Supervisor
Ventura Fish and Wildlife Office



Wayne S. White
Field Supervisor
Sacramento Fish and Wildlife Office

Enclosure

cc FWS:PARD(ES), Portland, OR
FWS:HC and ES, Washington, D.C.
FWS:CFO, Carlsbad, CA (Attn.: K. Berg)
FWS:LE, Sacramento, CA (Attn.: Senior Resident Agent S. Pearson)
FWS:LE, Burlingame, CA (Attn.: Special Agent K. McCloud)
FWS:LE, Chico, CA (Attn.: Special Agent J. Mendoza)
FWS:LE, Clovis, CA (Attn.: Special Agent F. Kuncir)
FWS:LE, Torrance, CA (Attn.: Senior Resident Agent L. Farrington)
DOI:SOL, San Francisco, CA (Attn.: Solicitor R. Kohn Glazer)
EPA:Wetlands, San Francisco, CA
CDFG, Regions 1, 2, and 3
ESRP, Fresno, CA

Appendix B: USFWS Species List



United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825



February 11, 2009

Document Number: 090211114611

Kevin Wiseman
Garcia and Associates
2601 Mission St. Suite 600
San Francisco, CA 94530

Subject: Species List for Line 303 In-Line Inspection Project

Dear: Mr.

We are sending this official species list in response to your February 11, 2009 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be May 12, 2009.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested
Document Number: 090211114611
Database Last Updated: January 29, 2009

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
 - Conservancy fairy shrimp (E)
- Branchinecta longiantenna
 - Critical habitat, longhorn fairy shrimp (X)
 - longhorn fairy shrimp (E)
- Branchinecta lynchi
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Lepidurus packardi
 - vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus
 - Critical habitat, delta smelt (X)
 - delta smelt (T)
- Oncorhynchus mykiss
 - Central California Coastal steelhead (T) (NMFS)
 - Central Valley steelhead (T) (NMFS)
- Oncorhynchus tshawytscha
 - Central Valley spring-run chinook salmon (T) (NMFS)

- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
 - Critical habitat, CA tiger salamander, central population (X)
- *Rana aurora draytonii*
 - California red-legged frog (T)
 - Critical habitat, California red-legged frog (X)

Reptiles

- *Masticophis lateralis euryxanthus*
 - Alameda whipsnake [=striped racer] (T)
- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *Sternula antillarum* (=Sterna, =albifrons) browni
 - California least tern (E)

Mammals

- *Vulpes macrotis mutica*
 - San Joaquin kit fox (E)

Plants

- *Cordylanthus palmatus*
 - palmate-bracted bird's-beak (E)
- *Lasthenia conjugens*
 - Contra Costa goldfields (E)
 - Critical habitat, Contra Costa goldfields (X)

Proposed Species

Amphibians

- *Rana aurora draytonii*
 - Critical habitat, California red-legged frog (PX)

Quads Containing Listed, Proposed or Candidate Species:

LIVERMORE (446A)

BRENTWOOD (463B)

BYRON HOT SPRINGS (463C)

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as [critical habitat](#). These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [critical habitat page](#) for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These

lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be February 23, 2009.

Appendix C: Restoration and Monitoring Plan

Line 303 Restoration and Monitoring Plan

Temporary impacts to vegetation at the Line 303 In-Line Inspection Project area are expected to be minimal. Following construction activities, the three work areas will be restored to pre-project conditions. All disturbed ground will be reseeded by hand using the seed mix listed in Table 1 in the fall, just prior to the rainy season. Prior to seeding, the disturbed areas will be prepared to provide suitable conditions for germination, including tilling any areas that are compacted and raking the surface to spread and loosen the topsoil. This seed mix will be applied following construction activities and before the first rains of the year. Photographs of the project area will be taken before and after restoration to document restoration progress. The goal of the restoration will be to achieve grass coverage of at least 75% and for post project conditions to appear similar to those shown in Figures 1-3 below. An annual report will be prepared in December 2009 to document the results of the restoration effort. If the success criteria are not met, additional seed will be broadcast in 2010 and a second monitoring report would be submitted in December 2010.

Table 1. Seed Mix Recommended for Grasslands Used Mainly for Livestock Grazing and Dominated by Non-Native Grasses

Scientific/Common Name	Erosion Rating	Fuel Rating	Recommended Seeding Rates (lbs/acre)	Comments
Blando brome <i>Bromus hordeaceus</i>	Good	moderate	40	Introduced annual; rapid spring growth; does well on compacted soils.
Zorro fescue <i>Vulpia myuros</i>	Good	low	20	Introduced annual; adapted to dry sites and shallow soils; less invasive than rye and blando brome.
Blue wildrye <i>Elymus glaucus</i>	excellent	low to moderate	5	Native perennial; good stabilizer; tolerates full sun; requires good drainage.
Purple needlegrass <i>Nassella pulchra</i>	poor to good	low to moderate	5	Native perennial bunchgrass; adapted to clay soils, tolerant of summer drought and heat; tolerant of poor soils.

Sources: *Manual of Standards For Erosion and Sediment Control Measures (ABAG 1995)* and *Rehabilitation of Disturbed Lands in California: A Manual For Decision-making (Newton and Claassen 2003)*.



Figure 1. Pre-project vegetation conditions at Site 1 anomaly (located at the orange stake at center of photo) for the Line 303 In-Line inspection project. Feb. 2, 2008.



Figure 2. Pre-project vegetation conditions at Site 2 anomaly (located at the orange stake at center of photo) for the Line 303 In-Line inspection project. Nov. 5, 2008.



Figure 3. Pre-project vegetation conditions at Site 3 for the Line 303 In-Line inspection project. November 14, 2008.