Arroyo Toad Protection Plan

Santa Felicia Project - FERC No. 2153 - Article 401
Item 4(e) Condition 16

Final Report

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INTRODUCTION

The United Water Conservation District's (UWCD or Licensee) original fifty-year license for the Santa Felicia Project (including water releases into lower Piru Creek) issued by the Federal Energy Regulatory Commission (FERC or Commission) on December 20th, 1954, expired on April 30th, 2004. Accordingly, the UWCD has been operating under an annual license pending the agreement and approval of the new license issued on September 12th, 2008 (Project No. 2153-012). As a condition of the UWCD 2008 license, an arroyo toad protection plan must be developed and implemented by September 12th, 2009 (i.e., one year following permit issuance). Specifically, Article 401 – Condition Item 4(e) 16: Commission Approval, Reporting, and Filing of Amendments and United States Department of Agriculture – Forest Service 4(e) Terms and Conditions – Condition No.16, require the development of an arroyo toad protection plan (Appendix A – Agency Contacts).

The arroyo toad protection plan covers only those lands included in both the Santa Felicia Project Area and National Forest System Lands (Los Padres National Forest – administrated by both the Angeles and Los Padres National Forest).

PURPOSE & GOALS

The goal of the protection plan (Plan) is to document the licensee's responsibility to protect the arroyo toads breeding and aestivation habitat on Forest Service lands within the Santa Felicia Project area (Project Area) as shown in Figure 1, *Project Area Map*. The overall Santa Felicia Project Area extends downstream from Blue Point Campground and includes approximately 1,552 acres of land, 121 acres of which are inundated by Lake Piru at the maximum water surface elevation of 1,055 feet mean sea level (msl).

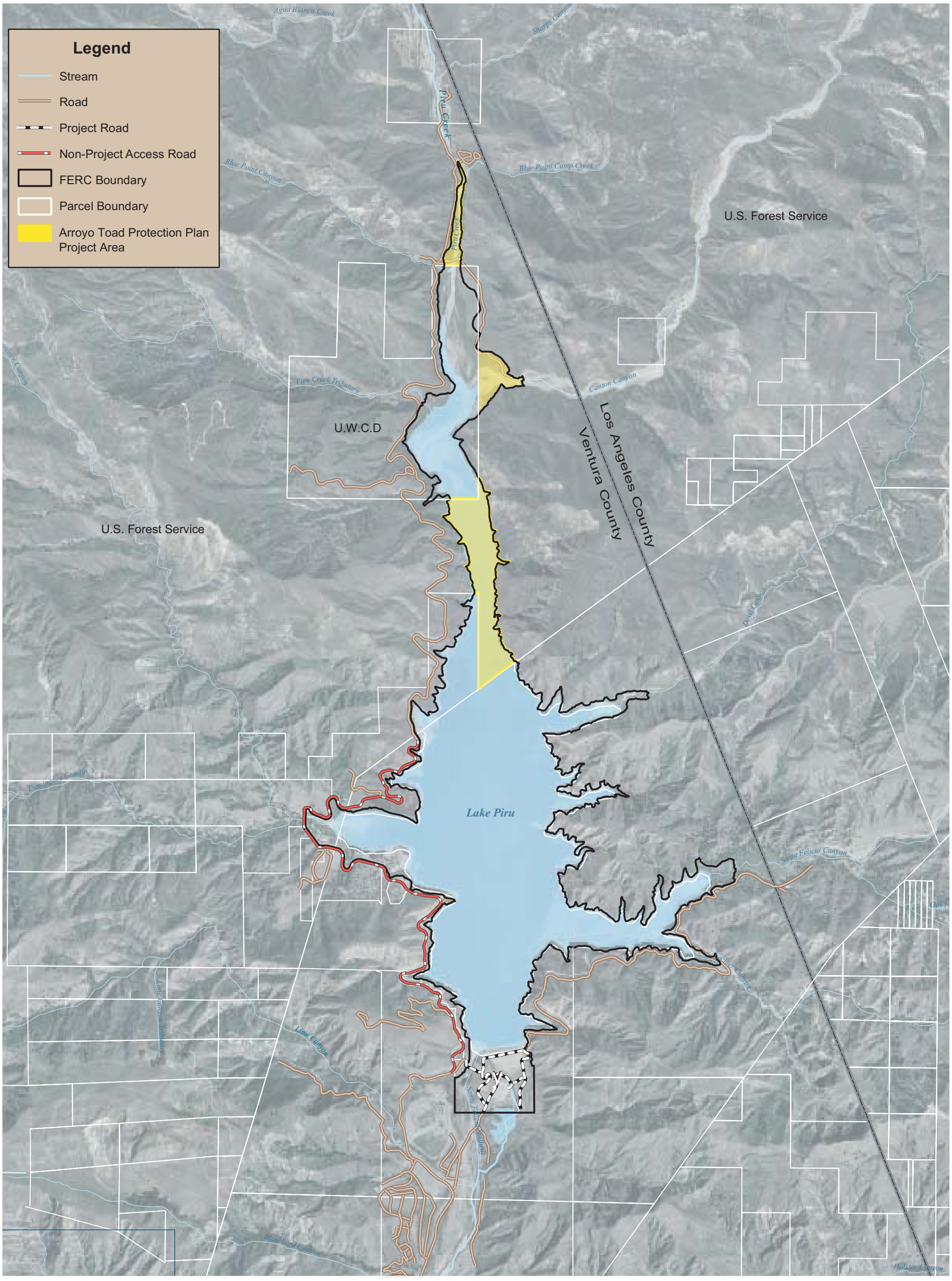
Although arroyo toads were not documented within the Project Area during 2004 focused survey efforts conducted by Sandburg, individuals were documented within the Project Area during survey efforts conducted by Aspen Environmental Group in 2009.

The Plan would establish site-specific arroyo toad protection measures for any UWCD activities that have the potential to impact arroyo toads on Forest Service land located within the Project Area boundary.

AGENCY CONSULTATION HISTORY

This Plan has been developed in consultation with federal and state resource agencies, which includes the United States Fish and Wildlife Service (USFWS), Angeles National Forest, Los Padres National Forest, California Department of Fish and Game (CDFG), and FERC.

The consultation history also includes miscellaneous e-mails and phone calls identifying the progress and responsibilities to review and approve specific sections of the document. As a result, a draft report "Arroyo Toad Protection Plan" was submitted to all participating agencies (Attachment A) for review in August 2009.



Source: Base map Entrix 2009

Figure 1 - Project Area Map
Arroyo Toad Protection Plan
Santa Felicia Project - FERC No. 2153 - Article 401 - Condition Item 4(e)16

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1 inch = 2,700 feet

Comments were received from the CDFG in September 2009. A recommendation was made to incorporate the results of the 2009 arroyo toad surveys conducted in middle Piru Creek into the plan. The 2009 results were not available when the draft report was prepared. As requested, the updated survey results have been incorporated into the Plan.

HISTORICAL DISTRIBUTION OF ARROYO TOAD IN PROJECT AREA

Focused non-protocol arroyo toad surveys were conducted within the Project Area extending upstream from Piru Reservoir within middle Piru Creek from June – July 2009 by Aspen Environmental Group.

Arroyo toads were documented within the Project Area extending upstream from Blue Point Canyon to Blue Point Campground during the 2009-focused survey effort (Aspen Environmental Group 2009).

As stated by Aspen Environmental Group:

> "*The majority of the arroyo toad larvae and metamorphs found in middle Piru Creek were located from just below Blue Point to just below Ruby Canyon…. A total of 124 arroyo toad locations were recorded during the six survey days*". (Aspen Environmental Group 2009)

No arroyo toads were detected within the Project Area during focused surveys conducted from March – July 2004 (Sandburg 2004) or April – July 2008 (Ecological Sciences 2009).

As stated by UWCD:

> "*Arroyo toad is known to occur in Piru Creek from Blue Point Campground upstream for 3.5 miles to Lower Piru Gorge (Sweet 1992, USFWS 1999, CDFG 2003), a stretch that is adjacent to but outside of the Project area… In addition, informal USFS reports have indicated arroyo toad presence below Blue Point Campground. Arroyo toads may have been present historically throughout the Study Area prior to the construction of Santa Felicia Dam and other developments. Arroyo toads are not likely to occur in Piru Creek between the Santa Felicia Dam and the Santa Clara River confluence, because of the absence of confluence overflow pool habitat and the presence of high silt levels throughout the reach*" (UWCD 2004).

As stated by Ecological Sciences:

> *Ninety seven (97) arroyo toad clutches were recorded on middle Piru Creek between Blue Point Campground and Ruby Canyon during the 2008 breeding season… Clutches were not recorded downstream of Blue Point Campground. The most southern downstream clutch was located generally between Blue Point crossing and the Ritchy house (south of the confluence with Agua Blanca Creek). No clutches were recorded at Ruby Canyon. Agua Blanca Creek (not a part of the current survey area)*

supported continuous surface flow in June that extended to the confluence with Piru Creek and arroyo toads were recorded directly east of the Ritchy house (Steve Howard pers. Com. 2008)." (Ecological Sciences 2009)

PROTECTION STATUS AND NATURAL HISTORY OF ARROYO TOAD

As stated by the UWCD:

"*The arroyo toad (Bufo californicus) is a federally listed endangered amphibian (USFWS 1994), and a California Species of Special Concern (Jennings and Hayes 1994). The USFWS designated 11,695 acres of critical habitat for the arroyo toad on April 13th 2005. However, the entire reach of Piru Creek including the Study Area was excluded from critical habitat designation under section 4(b)(2) of the endangered species act for economic reasons (USFWS 2005).*

The extirpation of arroyo toad from approximately seventy-six percent of its historic range (Jennings and Hayes 1994) is attributed to human related activities that have altered or destroyed suitable habitat and natural hydrologic regimes, and the introduction of exotic predator species.

Habitat requirements for the arroyo toad include shallow, gravelly overflow pools adjacent to sandy terraces, with low current velocity, and sparse emergent vegetation. Most toad sites are slightly downstream of third and higher order confluences (Sweet 1992). Pools relatively free of silt are required for larvae to feed (USFWS 1999). Stabilized sandbars with capillary-fed moisture are essential for the survival of newly transformed juveniles during the summer (Sweet, 1992), as they may remain on the stream banks to feed for up to four months before dispersal. Adult and subadult toads aestivate during summer and winter months, emerging to feed and hydrate. Burrow locations are usually located in dry or slightly damp fine sand and often in the canopy edge of willow or cottonwood. Holland (2001) documented that arroyo toads will travel up to 1.12 km from the edge of the riparian ecotone for burrowing and night foraging. The major food source consists of ants and other small invertebrates. Predators include native and exotic species in both aquatic and terrestrial life stages of arroyo toads. Bullfrogs and non-native fish (Sweet 1992) can be especially effective predators" (UWCD 2004).

INITIAL IMPLEMENTATION MEASURES

Several natural resource studies were conducted prior to and in association with the relicensing of the Santa Felicia project. For the purpose of this document, only those studies conducted for the arroyo toad are discussed below. As a result of these initial

studies, several permit requirements were added to the relicensing agreement, including the development of an arroyo toad protection plan and a herpetological monitoring plan.

Arroyo Toad Focused Surveys

Focused non-protocol arroyo toad surveys were conducted throughout the Project Area from March to July 2004 by Nancy Sandburg.

As stated by Sandburg:

> "*All surveyed areas received a minimum of one night and one day survey with the exception of the recreationally developed portions of the southwest side of the Reservoir."* (Sandburg 2004)

Specifically, the surveys extended from Piru Reservoir upstream to Blue Point Campground. Although no arroyo toads were documented during the 2004 survey effort, individuals were expected to occasionally utilize upland habitats within the Project Area for foraging, movement and aestivation. Breeding habitat did not occur within the Project Area at the time surveys were conducted. As stated by UWCD:

> "*At the northern boundary of the study area above Piru Reservoir, the stream was intermittent prior to the construction of Pyramid Dam in 1973. In recent years, reduction of winter flood flows and summer flow releases up to 25 cfs have changed the fluvial morphology of the local environment between the Pyramid and Piru reservoirs. This change has effectively eliminated arroyo toad breeding habitat, including a breeding pool below Blue Point Campground that supported arroyo toad larvae in 1991 and 1992*." (UWCD 2004)

Habitat Suitability Mapping

Arroyo toad suitable habitat was mapped within the Project Area (Middle Piru Creek floodprone area) upstream of the confluence of Middle Piru Creek and Canton Canyon during the initial biological survey efforts conducted by Entrix (UWCD 2004).

OPERATIONAL MITIGATION & MINIMIZATION MEASURES

Prior to the initiation of any UWCD activities that have the potential to impact arroyo toads on Forest Service land located within the Project Area boundary, the following mitigation/minimization measures shall be implemented, as warranted:

1. Conduct arroyo toad habitat assessment of proposed project site including both temporary and permanent impact areas. The initial survey effort will focus on determining if potential arroyo toad breeding and/or upland habitats would be directly and/or indirectly impacted as a result of project initiation. The survey will be conducted by a qualified biologist familiar with breeding, upland habitat utilization, activity patterns and movement potential of the species;

2. If the proposed activity would not directly or indirectly result in "take" of the arroyo toad including temporary or permanent impacts to breeding or upland habitats, no additional mitigation/minimization measures would be conducted for this species.
3. If suitable arroyo toad habitat (breeding/upland/movement routes) is documented within or adjacent to the proposed project area, either focused surveys would be conducted to determine presence/absence, or the species will be presumed present. If focused surveys are conducted and no arroyo toads are documented within or adjacent to the proposed project site, no additional mitigation/minimization measures would be conducted for this species. If the species is documented within or adjacent to the proposed project area or presumed present, the following minimization measures shall be implemented:

    a. If the proposed project would result in potential direct/indirect impacts to arroyo toad breeding habitat, no activities will be initiated during the breeding season. In an effort to determine the status of arroyo toad breeding, a qualified biologist shall monitor breeding activity within and adjacent to the proposed project site to determine when all larvae have completed metamorphosis. This effort will generally involve a combination of diurnal clutch/larvae and nocturnal surveys;

    b. Immediately following the completion of the breeding season and prior to the initiation of aestivation, an exclusionary fence shall be installed around the perimeter of the proposed project area. A qualified biologist would conduct at least three (3) consecutive day (juvenile detectability highest) and night (adult detectability highest) surveys to translocate individuals from the impact area. Surveys will continue until no arroyo toads have been documented for at least two (2) consecutive nights. The surveys would be conducted no more than one (1) week prior to project initiation. By initiating the relocation surveys immediately following the breeding season, detectability and successful translocation of individuals outside of the impact area is increased;

    c. A project specific arroyo toad translocation plan shall be developed and approved by the Forest Service and USFWS prior to initiating the translocation survey efforts. At a minimum, the report would describe the type of exclusionary fencing proposed, location of fencing, translocation site characterization, and reporting requirements;

    d. An environmental awareness briefing will be conducted prior to the initiation of project related activities in order to fully inform all onsite personnel of the biologically sensitive resources associated with the proposed project. The briefing will also inform all personnel of the terms and conditions associated with Forest Service and USFWS authorization to proceed (informal consultation) or as outlined in a biological opinion (formal consultation). A handout will also be created and distributed that describes and illustrates the species, including contact information and course of action if detected within the proposed project site;

e. The integrity of the exclusionary fencing shall be assessed by on site personnel on a daily basis. All breaches shall be immediately repaired. Areas of the fencing breached each day for construction access, shall be repaired prior to completion of each days efforts;

f. A biological monitor will visit the proposed project site at least once a week to insure that the fencing has not been breached and all project related general best management practices are being successfully implemented; and

g. A Forest Service and USFWS approved biologist will be onsite during all project related exclusionary fence installation, vegetation clearing/grubbing and ground disturbance.

4. The results of the initial arroyo toad habitat assessment and proposed minimization measures (if warranted) would be submitted to the USFWS and Forest Service for review and authorization to implement site specific measures and to determine if formal consultation is warranted.

IMPLEMENTATION SCHEDULE

The Plan shall be implemented following review and concurrence from participating agencies shown in Attachment A (Agency Contacts) followed by final review and approval by the Commission.

REPORTING

Following agency approval, the Plan will be incorporated into the Herpetological Monitoring Plan (Cadre Environmental 2009) and all associated monitoring results, reports, and evaluations shall be provided to the USFWS, CDFG, the United States Forest Service, and the Commission.

Specifically, an annual report shall include discussion of the following:

1. Any activities conducted by UWCD that have the potential to impact arroyo toads on Forest Service land located within the Project Area boundary during previous year including assessment of potential direct/indirect impacts to arroyo toads;

2. Activities or projects proposed by UWCD for upcoming year that have the potential to impact arroyo toads on Forest Service land located within the Project Area boundary.

3. Assessment of implementation and effectiveness of Plan;

4. Recommendations for changes to Plan; and

5. Updated record of consultation with participating agencies.

6. California Natural Diversity Database forms shall be completed for all sensitive species documented during implementation of the Plan. Forms shall be submitted to the Biogeographic Data Branch, CDFG, 1807 13th Street, Suite 202, Sacramento, California 95811 (also accessible online at http://www.dfg.ca.gov/biogeodata/cnddb).

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APPENDIX A – Agency Contacts

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