

May 30, 2016

High Trails Outdoor Science School
Mr. Driz Cook
P.O. Box 2640
Big Bear City, CA 92314

Subject: Habitat Assessment for Mountain Yellow-legged Frog (*Rana mucosa*) and Southern Rubber Boa (*Carina umbratica*) at the High Trails Outdoor School Project in Angelus Oaks, San Bernardino County, California

Dear Mr. Cook:

FirstCarbon Solutions (FCS) is pleased to provide you with the following scope of work to conduct a field assessment for the project site to support San Bernardino Northern Flying Squirrel, Mountain Yellow-legged Frog, Southern Rubber Boa, focused surveys for Southwestern Willow Flycatcher, focused surveys for rare plants and an arborist survey and assessment for the High Trails Outdoor Science School project site located at 'O' Radford Ranch Road, Angelus Oaks, California (Exhibits 1 and 2). These efforts would be in completed in support of California Environmental Quality Act (CEQA) documentation for project approval.

MOUNTAIN YELLOW-LEGGED FROG BIOLOGY

The mountain yellow-legged frog (MYLF) is a highly aquatic moderately sized (2-3.5 in.) frog that inhabits perennial aquatic habitats between 1,200 to 7,500 feet in elevation. Populations are known from the San Gabriel and San Bernardino Mountains in southern California. The dorsal color is yellow-brown and broken up by irregular dark markings, while the ventral surface is tan or yellow. Tadpoles are brown or tan with a golden tint and require more than one summer to transform. MYLF inhabits streams and other aquatic habitats ranging from steep rocky streams to the margins of marshy habitats. Streams that contain intermittent clear pools represent ideal habitats. Adults prefer gently sloping shoreline habitats.

The MYLF is diurnal and is rarely found more than 3 feet from water. It is active throughout the year in southern California (Stebbins and McGinnis, 2012). Breeding activity typically begins in April and continues into the late summer months. Eggs are deposited in shallow waters where they are attached to rocks, vegetation, or other underwater structures, and hatch in less than a month. Larval development is temperature dependent, but typically metamorphosis is complete at the end of the second summer when tadpoles are around a year and a half in age. MYLF are insectivores preying on beetles, dragonflies, wasps, bees, and ants, however large individuals and small invertebrates into their diets. MYLF is a federal and state listed endangered species.

SOUTHERN RUBBER BOA BIOLOGY

The southern rubber boa (SRB) is a small stout-bodied snake reaching 14-25 inches in total length. Dorsal coloration ranges from tan to olive-green in adults, while juveniles are pink to tan in color. SRB occupies oak-conifer and mixed-conifer forest from 5,000 to 8,000 feet in elevation where it uses fallen trees, rotting logs, rocks, and other debris as cover (CDFG, 1987). This constricting and secretive species is nocturnal during summer months and crepuscular during the spring and fall. Surface active individuals have been recorded during low temperatures (50 F). Once preferred microhabitats dry out and desiccate, SRB retreat underground and surface activity is limited to late afternoon and evening hours.

SRB are ovoviviparous. Breeding begins in April and females give live birth to 2-8 young between August and November (Stebbins and McGinnis, 2012). The life-span of SRB is extremely long relative to other snake species, with individuals known to live up to 50 years in the wild (Stebbins and McGinnis, 2012). Their diet consists of small mammals, birds, and lizards. When threatened, SRB will coil up, hide its head, and expose its tail to the predator. This behavior results in many individuals having heavily scarred or missing tails. SRB is identified San Bernardino Forest Services sensitive-species and a state listed threatened species.

SURVEY METHODOLOGY

Prior to the site visit, maps, books, technical reports, and biological databases were reviewed to assess the likelihood of MYLF and SRB inhabiting the site (Exhibit 3). Following the literature review, a single day habitat assessment was conducted by walking the site to record the presence or absence of suitable habitat for both species. All habitats present on the site were visited and photographed during the habitat assessment.

SITE DESCRIPTION

The approximately 40-acre project site is located near the community of Seven Oaks and Barton Flats in the San Bernardino National Forest north of State Route 38 (SR-38), on the western slopes of Sugar Loaf Mountain (Exhibit 2). Elevation on-site ranges from 5,520 feet above mean sea level (AMSL) in the northwest corner to 5,322 AMSL in the Santa Ana River in the southwest corner. The project site contains several small hills and generally slopes moderately from north to south. The parcel is traversed by Radford Camp Road that winds north to south on the western half. The property is undeveloped, supporting natural vegetation with the exception of an expansion tank for a private water well located on a small concrete pad in the center of the site. A dirt access road and gate on the eastern edge of the site occur as well (Attachment A: Site Photographs). The upper Santa Ana River occurs within the southwest corner and to the south of the property. The project site is nearly completely bound by undeveloped land owned by the United States Forest Service (USFS) with the exception of undeveloped private land to the northwest (Exhibit 4).

Soils on the project site are limited to Oak-glen rush families complex (2 to 15% slopes) and Wapi-Pacifico families (50 to 75% slopes) (Bowman 1973) (Exhibit 3). Soils from the Oak-glen complex are

alluvial and well-drained. Soils from the Wapi-Pacifico complex are found on mountain slopes and are also somewhat excessively drained. Both soils are mostly made up of mixed coarse loam and sand.

SURVEY RESULTS

On 23 May 2017, Dr. Eric A. Dugan conducted a single-day reconnaissance-level habitat assessment of the 40-acre property. The purpose of the survey was to identify the potential for these species to occur on the project site. Dr. Dugan has conducted numerous MYLF and SRB surveys and has extensive experience with native herpetofauna of the region.

Weather conditions during the assessment were 52-60 F, calm winds, and clear sunny skies. The site was visually assessed using meandering transects to target suitable habitats. All habitats and associated habitat features present on the site were visited during the assessment. Based on a review of the aforementioned literature and databases, and the observations made during the site visit, a portion of the site was determined to contain suitable habitat for both the MYLF and SRB.

DISCUSSION AND RECOMMENDATIONS

Limited suitable habitat for MYLF occurs within the 40-acre site, but not within the project footprint intended for development. Suitable habitat for this species is restricted to the creek channel running along the southern border of the property. If project designs change and this creek is impacted, then it would be recommended to perform preconstruction focused surveys in this location, including a buffer, prior to the commencement of any ground disturbance. At this time, no development or impacts are intended for the creek.

For informational purposes, the following protocol information is provided. The United States Fish and Wildlife Service (USFWS) recommended survey protocol is to begin between May 1 and August 31 in order to both reduce disturbance to MYLF and increase likelihood of detecting the species. A total of 3 diurnal surveys should be performed at least 7 days apart from one another. Surveys should be conducted on warm (> 65 F), calm (< 10 mph winds), and clear days (less than 50% cloud cover). Cold, windy, and rainy days should be avoided. All suitable habitats should be visually surveyed for the presence of egg masses, tadpoles, juvenile, and adult life stages. Survey methodologies should ensure that surveys do not result in any disturbance to habitat features including but not limited to creek banks, vegetation, debris piles, and the creek channel sediments.

Limited suitable habitat for SRB occurs within the 40-acre site and marginal habitat for this species occurs within the project footprint. It is recommended that preconstruction focused surveys be performed within the project footprint where suitable habitat is present (i.e., include rocks, rocky outcrops, fallen trees, rotting logs). A total of three surveys on separate days, within 30-days of construction impacts should be performed and commence no later than the end of June, as SRB often remain underground for long periods of time during the hotter late summer months.

First Carbon Solutions (FCS) appreciates the opportunity to assist you on this project. If we can be of any further assistance, or if you have any questions concerning this letter report, please contact me at (714) 508-4100 or via email at kboydston@fcs-intl.com.

Sincerely,



Kim Boydston, Senior Biologist
FirstCarbon Solutions
650 E. Hospitality Lane, Suite 125
San Bernardino, CA 92408

Enc: Exhibits 1-4

References

California Department of Fish and Game. 1987. Five year status report: Southern Rubber Boa.

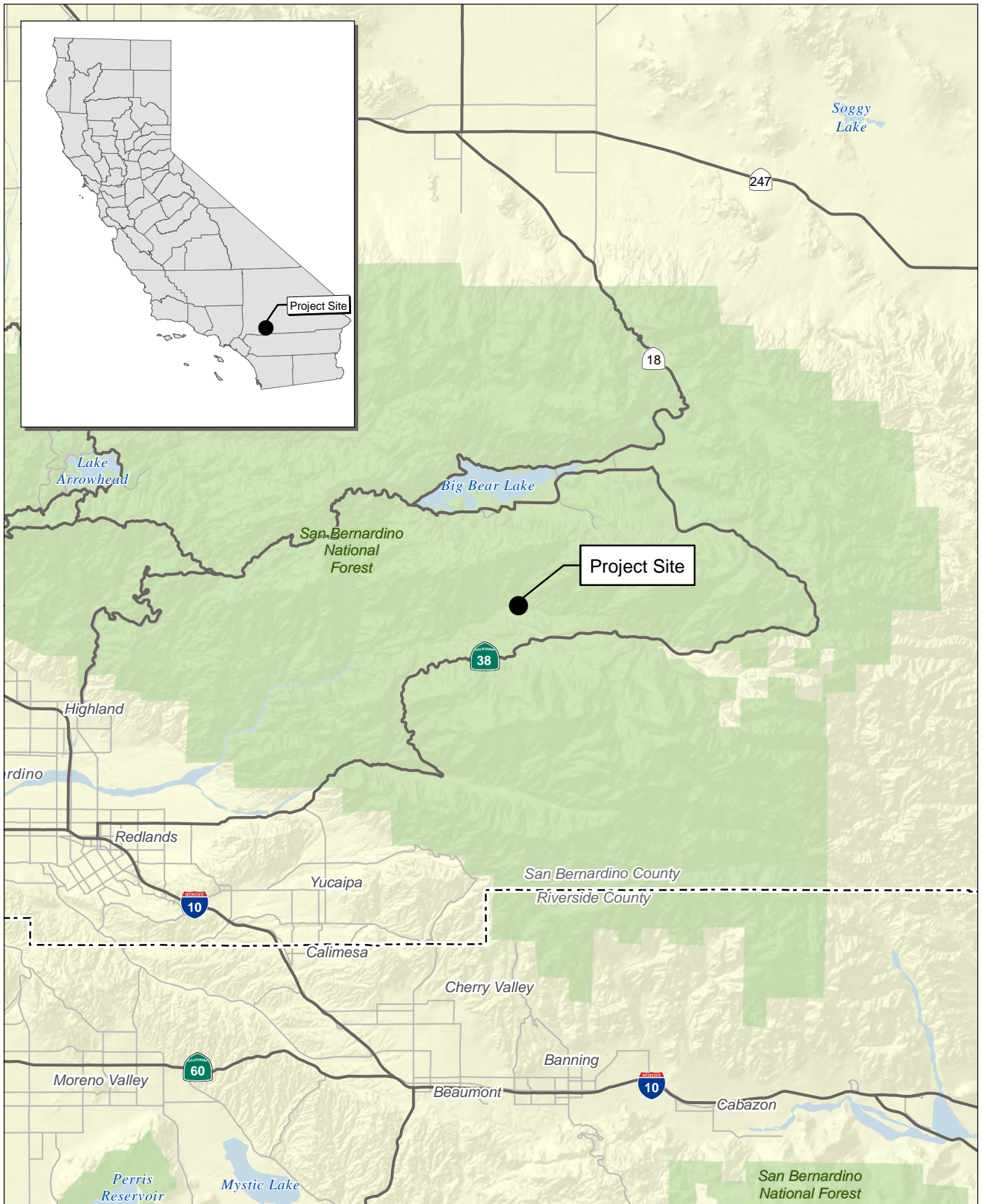
California Department of Fish and Wildlife (CDFW). 2017. Special Animals List. The Resources Agency of California, Department of Fish and Game, Natural Heritage Division, Natural Diversity Data Base. Sacramento, California. February.

California Department of Fish and Wildlife (CDFW). 2017. RareFind. Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species for the Big Bear and Moonridge, California USGS Topographic Quadrangles. California Department of Fish and Game, State of California Resources Agency. Sacramento, California.

California Native Plant Society (CNPS). 2017. California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California. Website: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>

Stebbins, R. C. and S. M. McGinnis. 2012. Field guide to amphibians and reptiles of California. University of California Press. Berkeley, California.

http://wrc-rca.org/species/survey_protocols/Amphibians/Yellow-Legged%20Frogs.pdf



Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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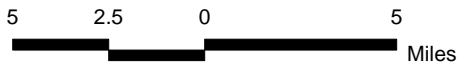
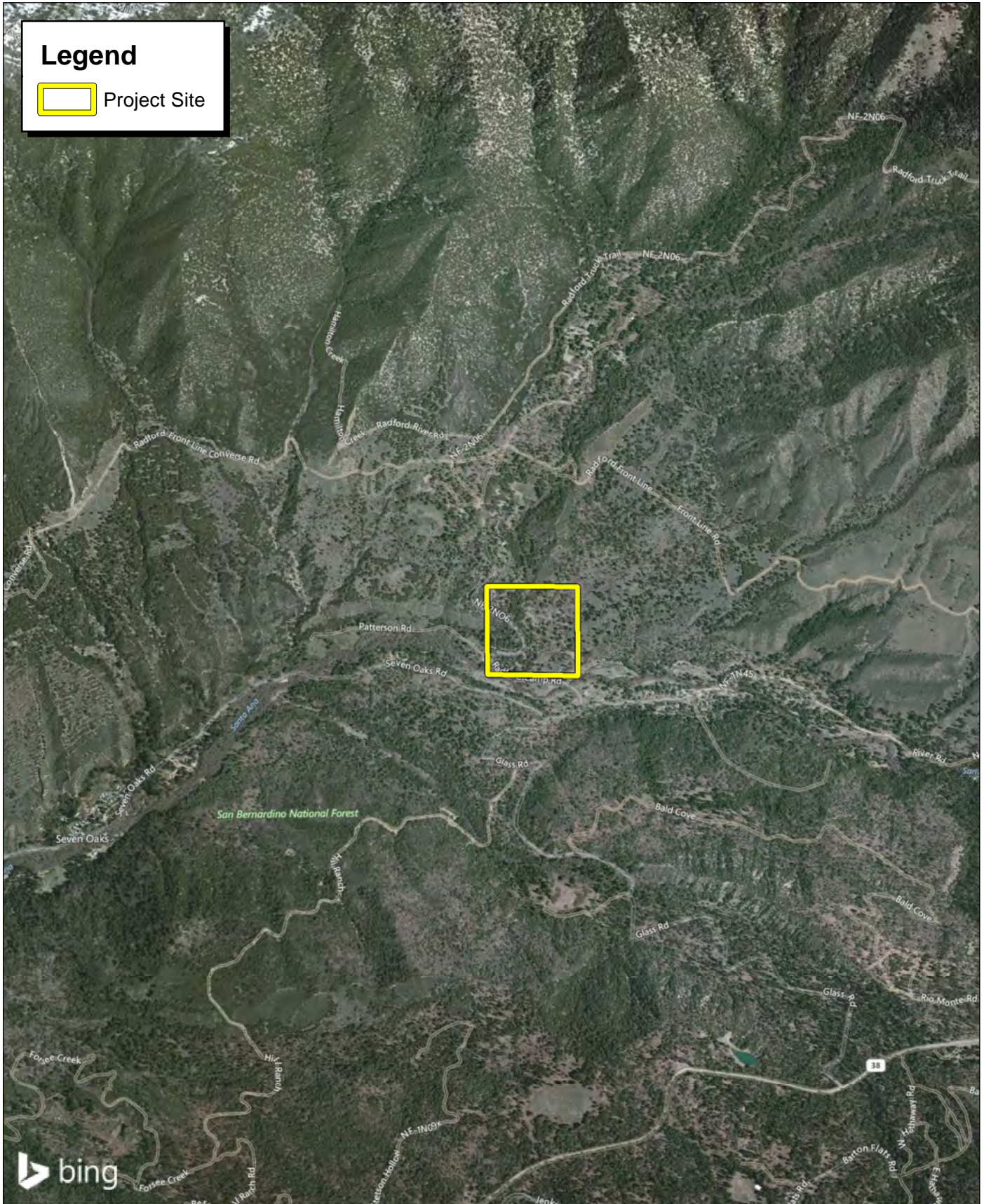


Exhibit 1 Regional Location Map



Source: Bing Imagery, 2015

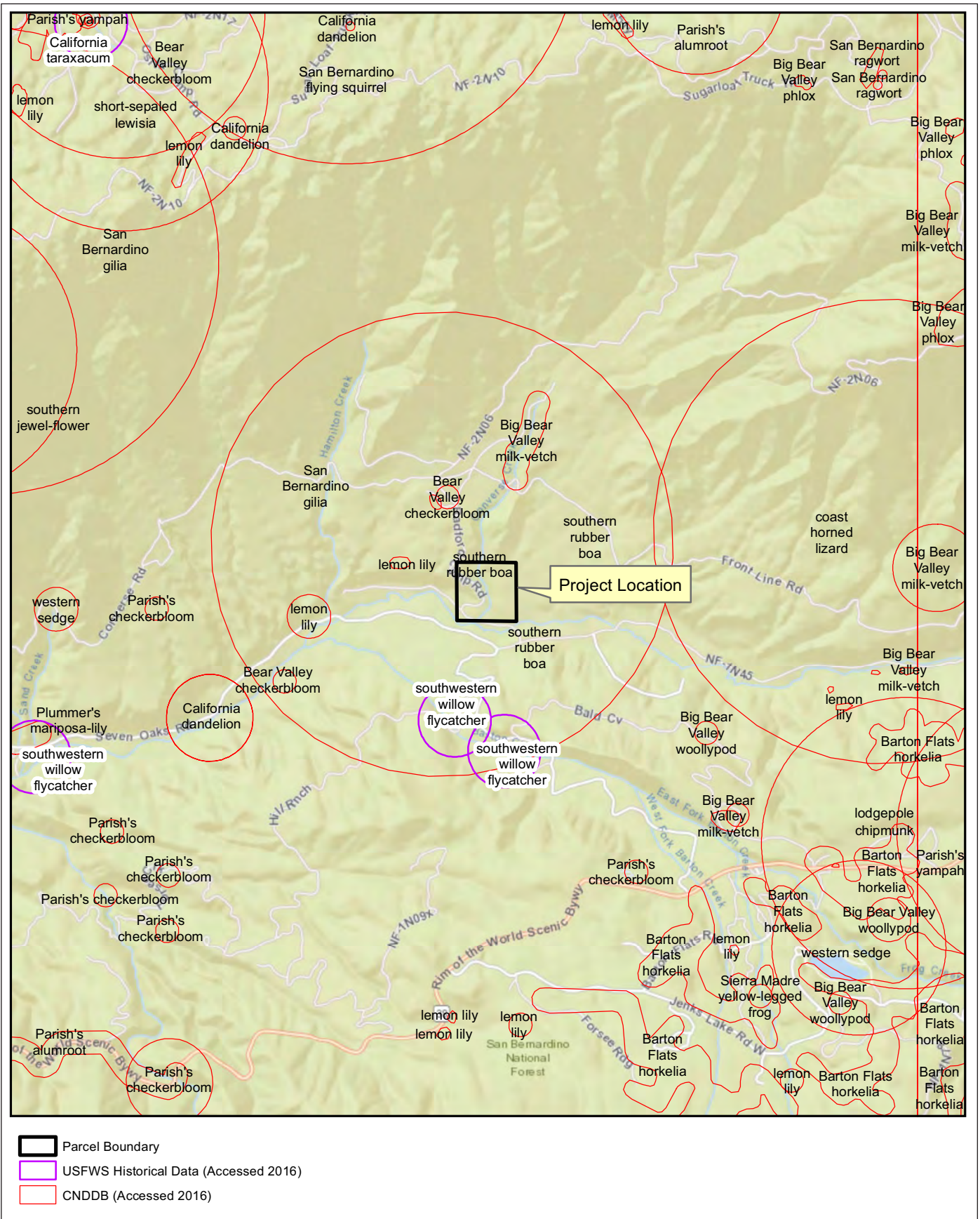
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Exhibit 2

Local Vicinity Map

Aerial Base



Source: Borchert Environmental Management, 2016

