CHURCH OF THE WOODS PROJECT

SAN BERNARDINO COUNTY, CALIFORNIA

HABITAT ASSESSMENT

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July 2018

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Travis J. McGill
Director

Thomas J. McGill, Ph.D.
Managing Director

July 2018

Executive Summary

This report contains the findings of Element Consulting (ELMT) Habitat Assessment for the Church of the Woods Project (Project or project site) located in the Community of Rimforest, San Bernardino County, California. ELMT biologists Travis J. McGill and Thomas J. McGill, Ph.D. conducted a field survey and evaluated the condition of the habitat within the project site on November 29, 2017. In addition, a second field survey was conducted on February 8, 2018.

The project site consists of a vacant, undeveloped parcel with naturally occurring habitats. Two (2) plant communities were observed on-site: mixed conifer forest and riparian scrub.

A single drainage feature was observed within the southwest corner of the project site during the field surveys. The drainage feature flows offsite into a larger drainage feature just above the center of the site. This secondary feature is tributary to Little Bear Creek and ultimately Lake Arrowhead (Traditional Navigable Water). Therefore, the onsite drainage feature possesses a surface hydrologic connection to downstream "waters of the United States" and fall under the regulatory authority of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW). Based on a review of the conceptual site plan, approximately 0.05 acres (852 linear feet) of Corps/Regional Board jurisdiction (non-wetland waters) and approximately 0.10 acres (852 linear feet) of CDFW jurisdiction (streambed/riparian) will be permanently impacted by development. Any impacts to on-site jurisdictional feature will require the following regulatory approvals prior to project implementation: Clean Water Act (CWA) Section 404 Nationwide Permit No. 39: *Commercial and Institutional Developments*, CWA Section 401 Water Quality Certification, and Section 1602 Lake or Streambed Alteration Agreement. However, it should be noted that the San Bernardino County Flood Control Department (County) purchased 9.81 acres from the Church of the Woods starting at the northeast corner and continue to the central portion of the site. This area supports the larger natural drainage into the onsite drainage flows and which is a tributary to Little Bear Creek. These 9.81 acres will be utilized by SBCFCD as part of their Rimforest Flood Control Project which is scheduled to be completed prior to development of the Church of the Woods project site. The Rimforest Flood Control Project will also impact the jurisdictional waters found on the project site (0.05 aces of Corps/Regional Board jurisdiction and 0.10 acres of CDFW jurisdiction). These impacts will be covered by the County's wetlands permits for the Rimforest Flood Control Project.

Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site has a low potential to support Palmer's mariposa-lily (*Calochortus palmeri* var. *palmeri*), lemon lily (*Lilium parryi*), and Parish's yampah (*Perideridia parishii* ssp. *parishii*). A focused survey for these three species conducted during the 2018 blooming season was negative and these species were determined to be absent from the project site. Suitable habitat for the remaining special-status plant species is not present onsite and these plant species were presumed to be absent from the project site based on the lack of available habitat and known distributions of each species.

No special-status wildlife species observed during the field survey. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a moderate or higher potential to support olive-sided flycatcher (*Contopus cooperi*), San Bernardino flying squirrel (*Glaucomys oregonensis californicus*), southern rubber boa (*Charina umbratica*), bald eagle (*Haliaeetus leucocephalus*), California spotted owl (*Strix occidentalis occidentalis*); and purple martin (*Progne subis*); and a low potential to support long-eared owl (*Asio otus*), California mountain kingsnake (San Bernardino population) (*Lampropeltis zonata* [*parvirubra*]), and white-eared pocket mouse (*Perognathus alticolus alticolus*).

Southern rubber boa was determined to have from a low to occur over most of the site to a moderate and high potential to occur two areas that support rocky outcrops that provide isolated but suitable patches of habitat (refer to Appendix D). Development of the project site will result in approximately 8.64 acres of impacts to low quality southern rubber boa habitat. All moderate and high-quality habitat will be avoided. However, as part of the project, 9.57 acres of low quality, 2.18 of moderate quality and 1.65 acres of high quality habitat (a total of 13.40 acres) will be permanently set aside as onsite conservation.

San Bernardino flying squirrel was determined to have a low to moderate potential to occur on-site based on the results of the habitat suitability assessment and known occurrences within the vicinity of the project site. Development of the project site will result in approximately 4.61 acres of impacts to moderate quality San Bernardino flying squirrel habitat and 2.56 acres of low quality habitat. However, as part of the project, 5.45 acres of moderate quality San Bernardino flying squirrel habitat and 7.95 acres of low quality habitat (a total of 13.40 acres) will be permanently set aside as onsite conservation.

California spotted owl was determined to have a low to moderate potential to occur on-site based on the results of the habitat suitability assessment and known occurrences within the vicinity of the project site. Development of the project site will result in approximately 4.61 acres of impacts to moderate quality California spotted owl habitat and 2.56 acres of low quality habitat. However, as part of the project, 5.85 acres of moderate quality and 7.55 acres of low quality California spotted owl habitat (a total of 13.40 acres) will be permanently set aside as onsite conservation.

Nesting birds are protected pursuant to the Migratory Bird Treaty Act and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For listed and raptor species, this buffer should be expanded to 500 feet. A biological monitor should be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Once the

young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

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EXHIBITS

APPENDIX

LIST OF ACRONYMS

BIOS	Biogeographic Information and Observation System
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
DPS	Distinct Population Segment
° F	Degrees Fahrenheit
GIS	Geographic Information System
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High-Water Mark
Regional Board	Regional Water Quality Control Board
SBCFCD	San Bernardino County Flood Control District
SAA	Streambed Alteration Agreement
TLC	Thomas Leslie Corporation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction

This report contains the findings of Element Consulting (ELMT) Habitat Assessment for the Church of the Woods Project (Project or project site) located in the Community of Rimforest, San Bernardino County, California. ELMT biologists Travis J. McGill, and Thomas J. McGill, Ph.D. conducted a field survey and evaluated the condition of the habitat within the project site on November 29, 2017. In addition, a second field survey was conducted on February 8, 2018.

The habitat assessment was conducted to characterize existing site conditions and assess the probability of occurrence of special-status[1] plant and wildlife species that could pose a constraint to implementation of the Project. This report provides a detailed assessment of the suitability of the on-site habitat to support southern rubber boa (*Charina umbratica*), San Bernardino flying squirrel (*Glaucomys oregonensis californicus*), southern mountain yellow-legged frog (*Rana muscosa*), California spotted owl (*Strix occidentalis occidentalis*), as well as several other special-status plant and wildlife species that were identified by the California Natural Diversity Database (CNDDB) and other electronic databases as potentially occurring in the vicinity of the project site.

1.1 PROJECT LOCATION

The project site is generally located north of State Route 210, east of Interstate 215, and west of the State Route 173 in the community of Rimforest, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Harrison Mountain quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 29 of Township 2 north, Range 3 west (Exhibit 2, *Site Vicinity*). Specifically, the project site is located northwest of the intersection of State Route 18 and Daley Canyon Road (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

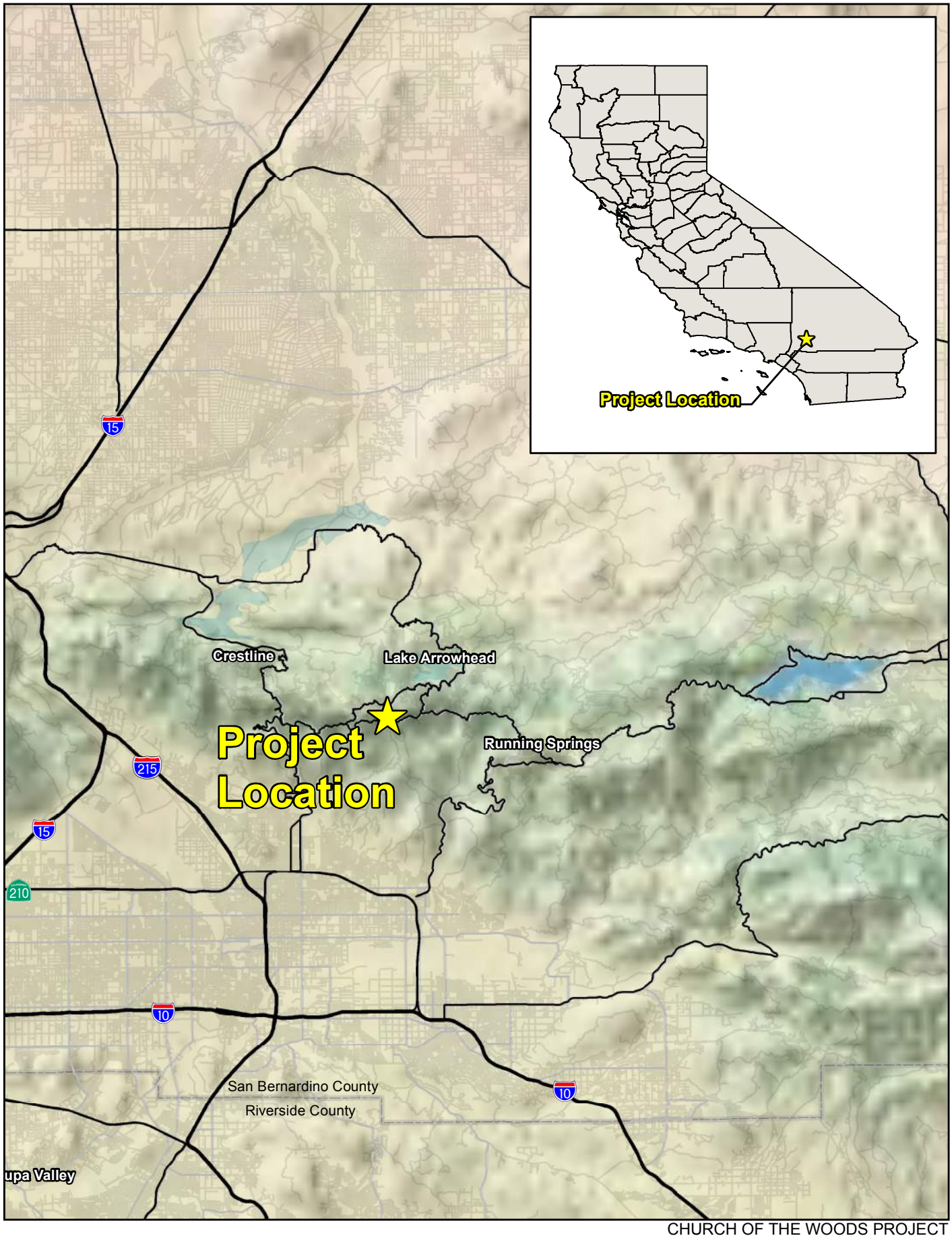
The Church of the Woods project includes an assembly building/youth center, an auditorium and children's ministry, a maintenance building/caretaker unit, 1,200 seat worship center, a chapel retreat building, various recreational fields and facilities, and parking. A permanent fuel modification zone with a minimum width of 100 feet around all proposed structures, would provide a fire break to deter the spread of a potential forest fire[2]. The extent of the fuel modification boundaries would be determined by the CFFPD based on an approved Fuel Modification Plan. The proposed project, including fuel modification zones, would result in the development of approximately 13.60 acres of the project site. A total of 13.40 acres, primarily in the

[1] As used in this report, "special-status" refers to plant and wildlife species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society (CNPS) Rare Plant Rank; and wildlife species that are designated by the California Department of Fish and Wildlife (CDFW) as fully protected, species of special concern, or watch list species.

[2] County of San Bernardino 2007 Development Code, Section 82.13.060(b)(6).

northwestern and eastern portions of the project site will remain natural open space and will be permanently preserved as habitat for SRB, San Bernardino flying squirrel and California spotted owl.

Vehicular access onto the project site would be provided by a driveway on Highway 18. A secondary emergency access would be provided along Highway 18 approximately 400 feet east of the proposed driveway. The proposed project would provide a total of 540 parking spaces, which would meet and exceed the minimum code requirements (Exhibit 4, *Project Depiction*).



CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

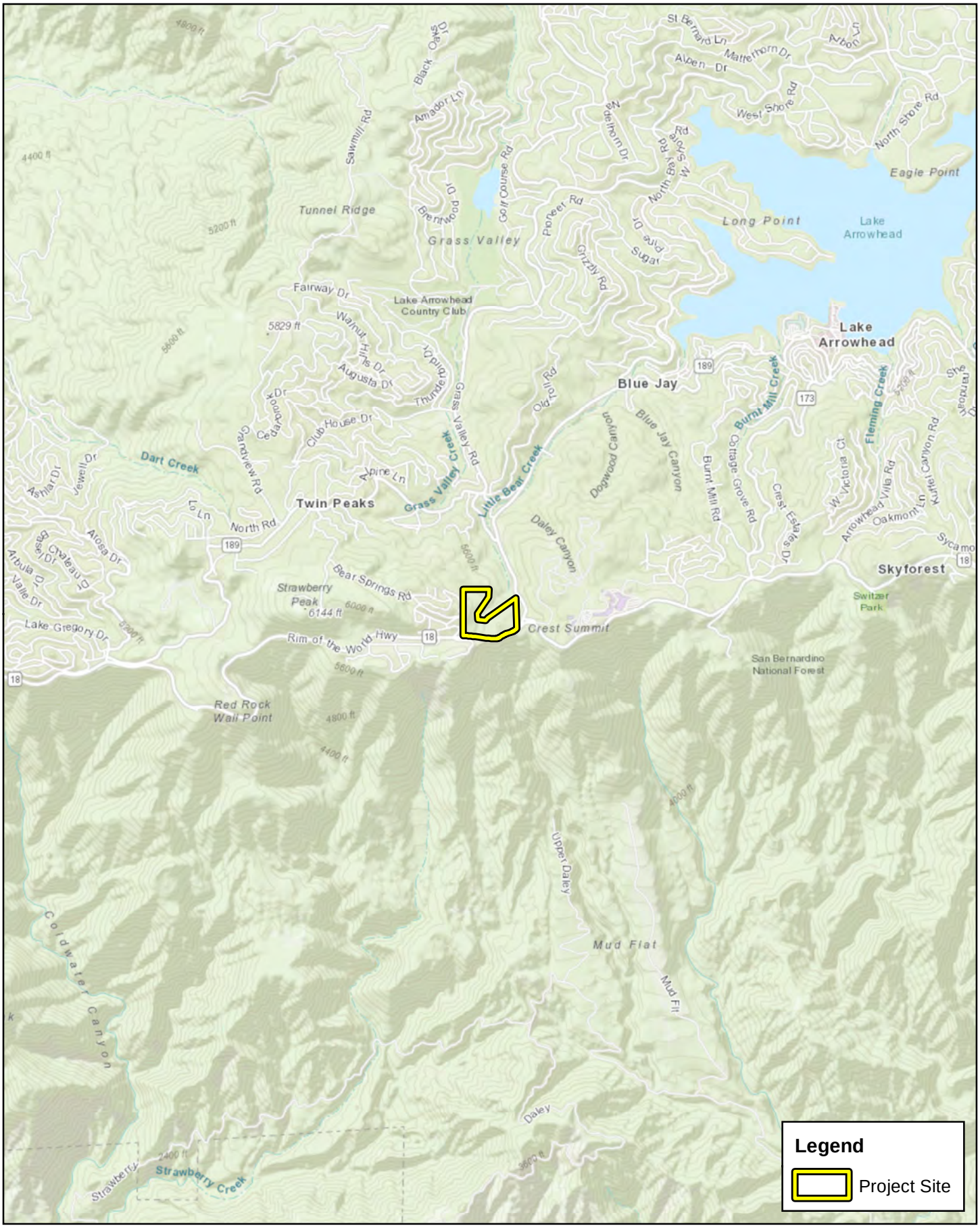
Regional Vicinity

ELMT CONSULTING

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Exhibit 1



CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

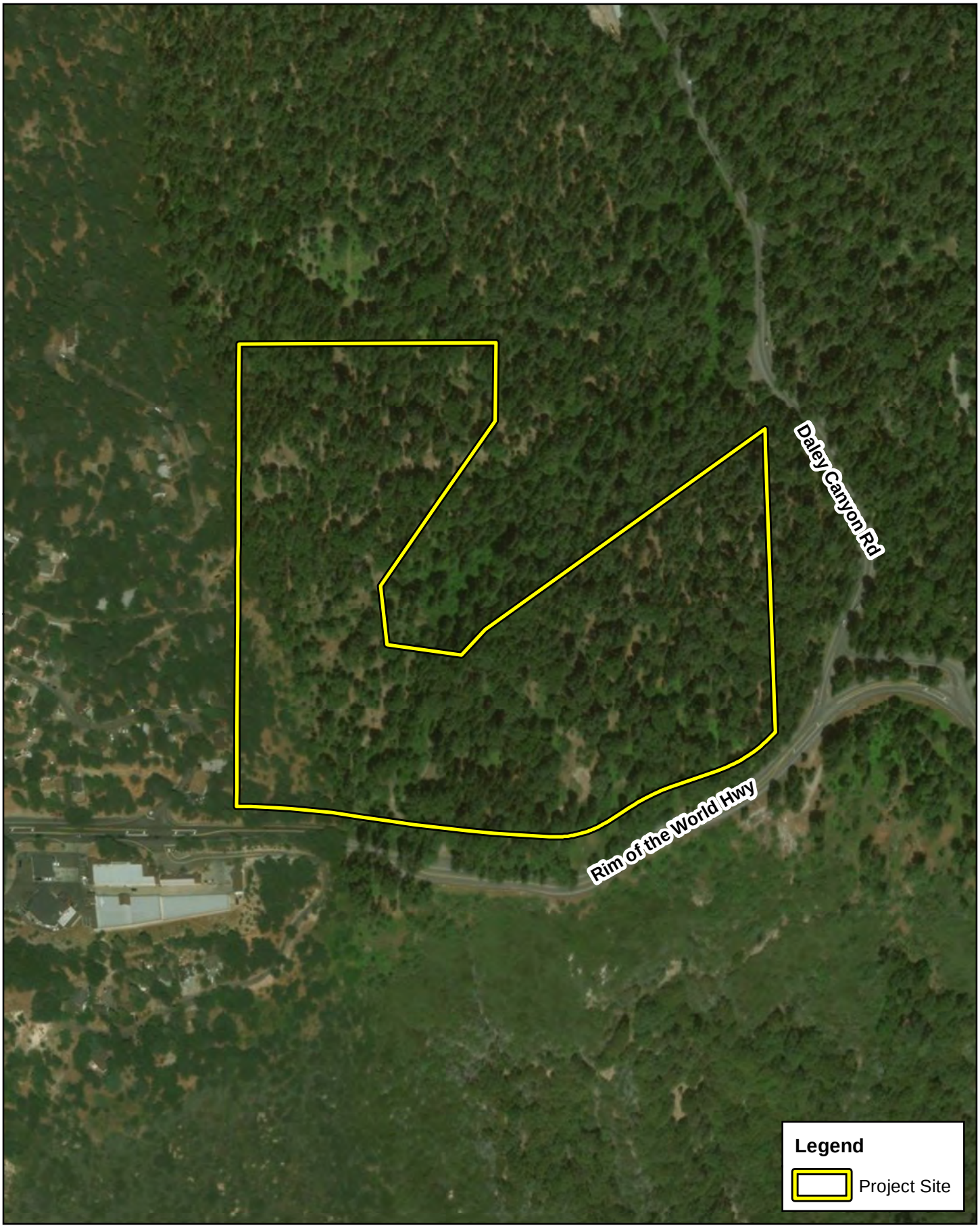
Site Vicinity

ELMT CONSULTING

0 1,250 2,500 5,000 Feet

Source:USA Topographic Maps

Exhibit 2



ELMT CONSULTING

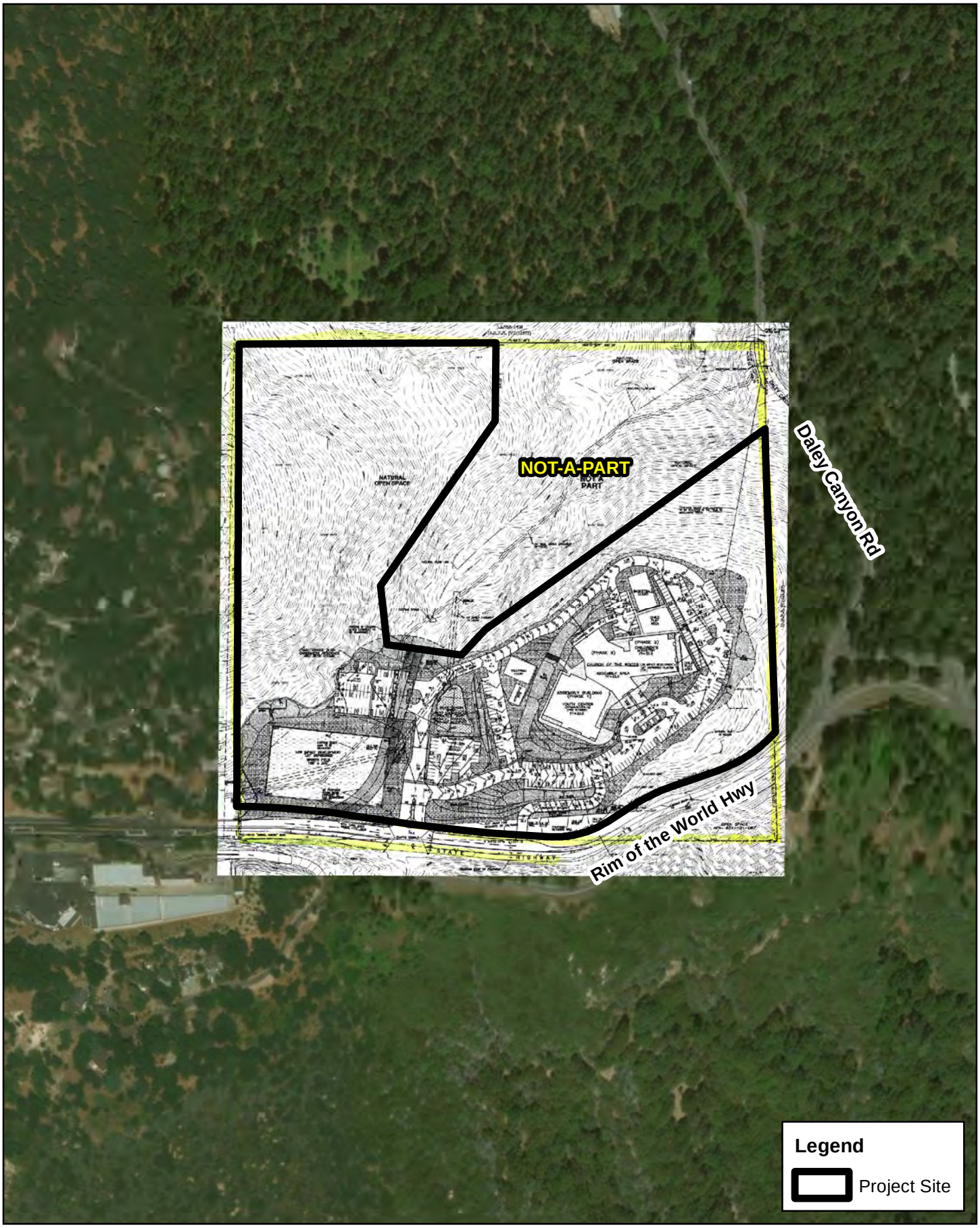
0 125 250 500 Feet

Source: Google Imagery, San Bernardino County

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Project Site

Exhibit 3



ELMT CONSULTING

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Project Depiction

Exhibit 4

Section 2 Methodology

ELMT conducted a thorough literature review and records search to determine which special-status plant and wildlife species have the potential to occur on or within the general vicinity of the project site. In addition, a general habitat assessment and field survey was conducted to document existing conditions on the project site and reassess the potential for special-status plant and wildlife species to occur.

2.1 LITERATURE REVIEW

Prior to conducting the field surveys, an initial literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the California Department of Fish and Wildlife's (CDFW) QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDB Rarefind 5, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the U.S. Fish and Wildlife Service (USFWS) species listings.

In addition, all available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand site conditions and to document the extent of disturbances that have occurred on the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1994 - 2017);
- Habitat requirements for southern rubber boa, San Bernardino flying squirrel, southern mountain California yellow-legged frog, and California spotted owl;
- San Bernardino County General Plan;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey; and
- USFWS Critical Habitat designations for Threatened and Endangered Species.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the project site. Additional recorded occurrences of those species that have been documented on or near the project site were derived from database queries. The CNDDB database was used, in conjunction with ArcGIS software, to locate the occurrence records and determine the distance from the project site.

2.2 HABITAT ASSESSMENT

ELMT biologists Travis J. McGill and Thomas J. McGill, Ph.D. conducted a field survey and evaluated the condition of the habitat within the project site on November 29, 2017. In addition, a second field survey was conducted on February 8, 2018. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. In addition, aerial photography was reviewed prior to the field survey to locate potential natural wildlife corridors and linkages that may support the movement of wildlife through the area. These areas identified on aerial photography were then verified during the field survey.

Special attention was given to any special-status habitats and/or undeveloped, natural areas, which have a potential to support special-status plant and wildlife species. All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded.

2.3 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field visit using the USDA NRCS Web Soil Survey for San Bernardino County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes and disturbances that have occurred on the project site.

2.4 PLANT COMMUNITIES

Plant communities were mapped using USGS 7.5-minute topographic maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), CDFW (2010) and Holland (1986), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

2.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual. In this report, scientific names are provided immediately following common names of plant species (first reference only).

A sensitive plant survey was conducted during the 2018 blooming season. The surveys followed the methodology described in CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Communities* (2009), CNPS's *Botanical Survey Guidelines* (2001), and USFWS's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996). Emphasis was placed on the potential for Palmer's mariposa-lily, lemon lily, and Parish's yampah

to be present based on a suitability assessment which determined that these three species have a low potential to occur.

2.6 WILDLIFE

Wildlife species detected during the field survey by sight, calls, tracks, scat, or other sign were recorded in a field notebook. Field guides used to assist with identification of species during the field survey included The Sibley Guide to Birds (Sibley 2014) for birds, A Field Guide to Western Reptiles and Amphibians (Stebbins 2003) for herpetofauna, and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are standardized, scientific names are provided immediately following common names in this report (first reference only).

In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted. Due to their regional significance and a moderate or higher potential to occur onsite, habitat suitability assessments were conducted for southern rubber boa, San Bernardino flying squirrel, and California spotted owl and is described in further detail in Section 4.7.2 below.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

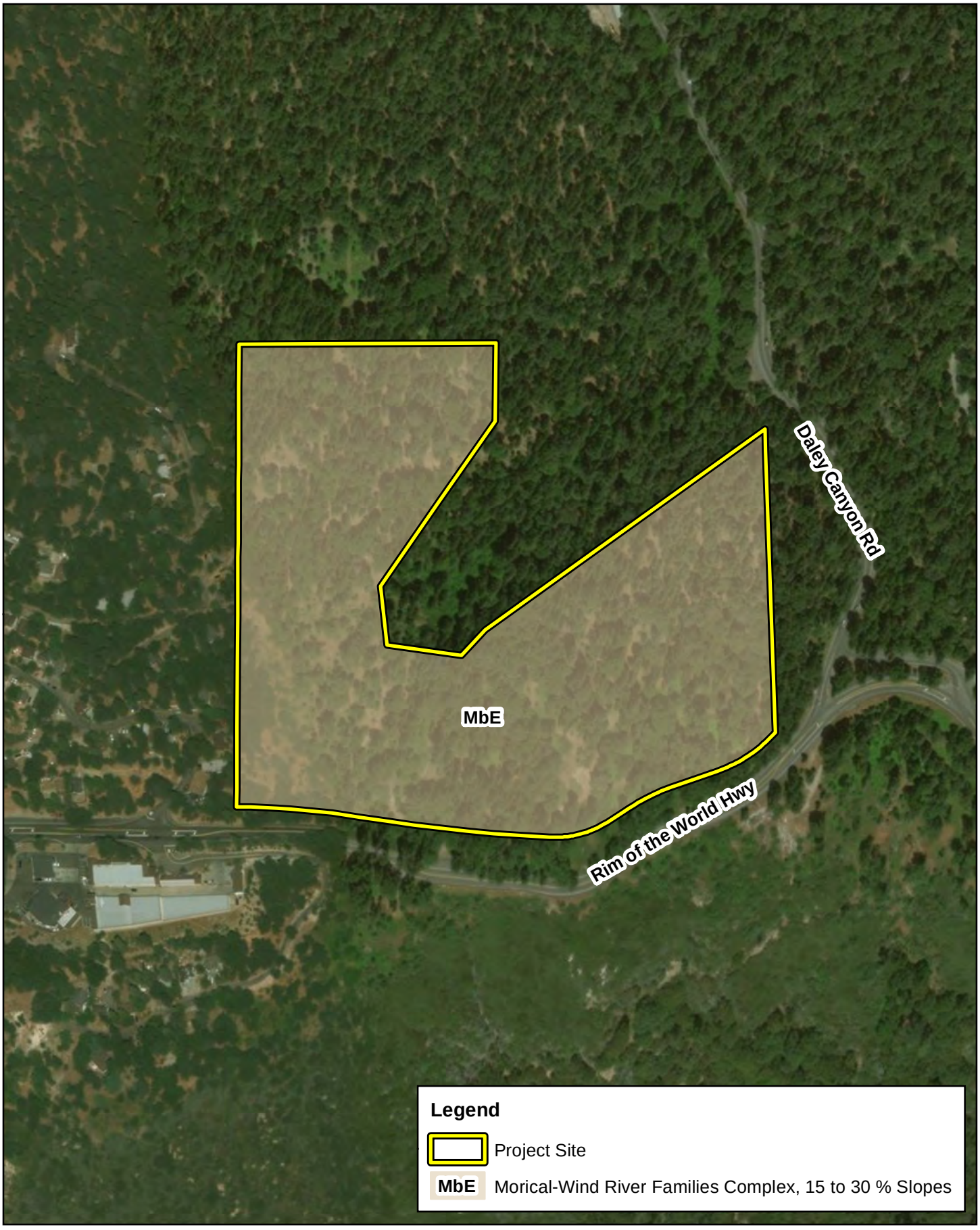
San Bernardino County is characterized by cool winter temperatures and warm summer temperatures, with its rainfall occurring almost entirely in the winter. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures common. Climatological data obtained for the City of Lake Arrowhead indicates the annual precipitation averages 3.47 inches per year. Precipitation occurs mainly between December and March. The wettest month is February, with a monthly average total precipitation of 8.99 inches. The average maximum and minimum temperatures for the region are 62 and 40 degrees Fahrenheit (°F) respectively with July and August (monthly average 81° F) being the hottest months and December and January (monthly average 29°F) being the coldest. Temperatures during the site visits ranged from 49 to 55 (°F) with light winds and 50-100% cloud cover.

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 5,513 to 5,763 feet above mean sea level and generally slopes to the northeast. Topography within the project site consists of moderate to steep slopes. The western portion of the project site is higher in elevation with the project site sloping in a northwest to south/southeast direction. Based on the USDA NRCS Web Soil Survey, the entire project site is underlain by Morical-Wind River Families Complex, 15 to 30 Percent Slopes (Exhibit 5, *Soils*).

3.3 SURROUNDING LAND USES

The project site occurs in an undeveloped area northwest of the intersection of State Route 18 and Daley Canyon Road in the Community of Rimforest. The Community of Lake Arrowhead is located approximately 1.63 miles northeast and Rim of the World High School is located approximately 0.30 miles to the east. Surrounding land uses include vacant/undeveloped parcels and a mix of residential and commercial land uses to the north, south, east and west. Approximately ten acres (9.81-ac) of the property, starting at the northeast corner and continue to the central portion of the site (see Exhibit 4, *Project Depiction*), were deeded to San Bernardino County Flood Control (SBCFCD) and will be utilized by SBCFCD as part of their Rimforest Flood Control Project. These 9.81 acres support a natural drainage that is a tributary to Little Bear Creek.



ELMT CONSULTING

0 125 250 500 Feet

Source: Google Imagery, San Bernardino County

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Soils

Exhibit 5

Section 4 Discussion

4.1 SITE CONDITIONS

The project site consists of a vacant, undeveloped parcel with naturally occurring habitats throughout. Daley Canyon Road bisects the northeast portion of the project site. One (1) drainage feature transverses the project site along the southern boundary to the center of the site and then turning north before existing the site and continuing in a northeast direction. Riparian habitat occurs in association with the drainage feature. Exposed rocks and surface boulders occur within the western and eastern portions of the project site and sporadically along the drainage feature. Additionally, unimproved trails and access roads were observed throughout the project site. Refer to Appendix A for representative photographs taken throughout the project site.

4.2 PLANT COMMUNITIES

The project site is relatively undisturbed and supports natural plant communities. Two (2) natural plant communities were observed on-site: mixed conifer forest and riparian scrub (Exhibit 6, *Vegetation*). These natural plant communities are described in further detail below. Please refer to Table 1 below for a summary of the on-site plant communities and anticipated impacts. Additionally, refer to Appendix B for a complete list of plant species observed during previous and current surveys.

Table 1: Plant Communities

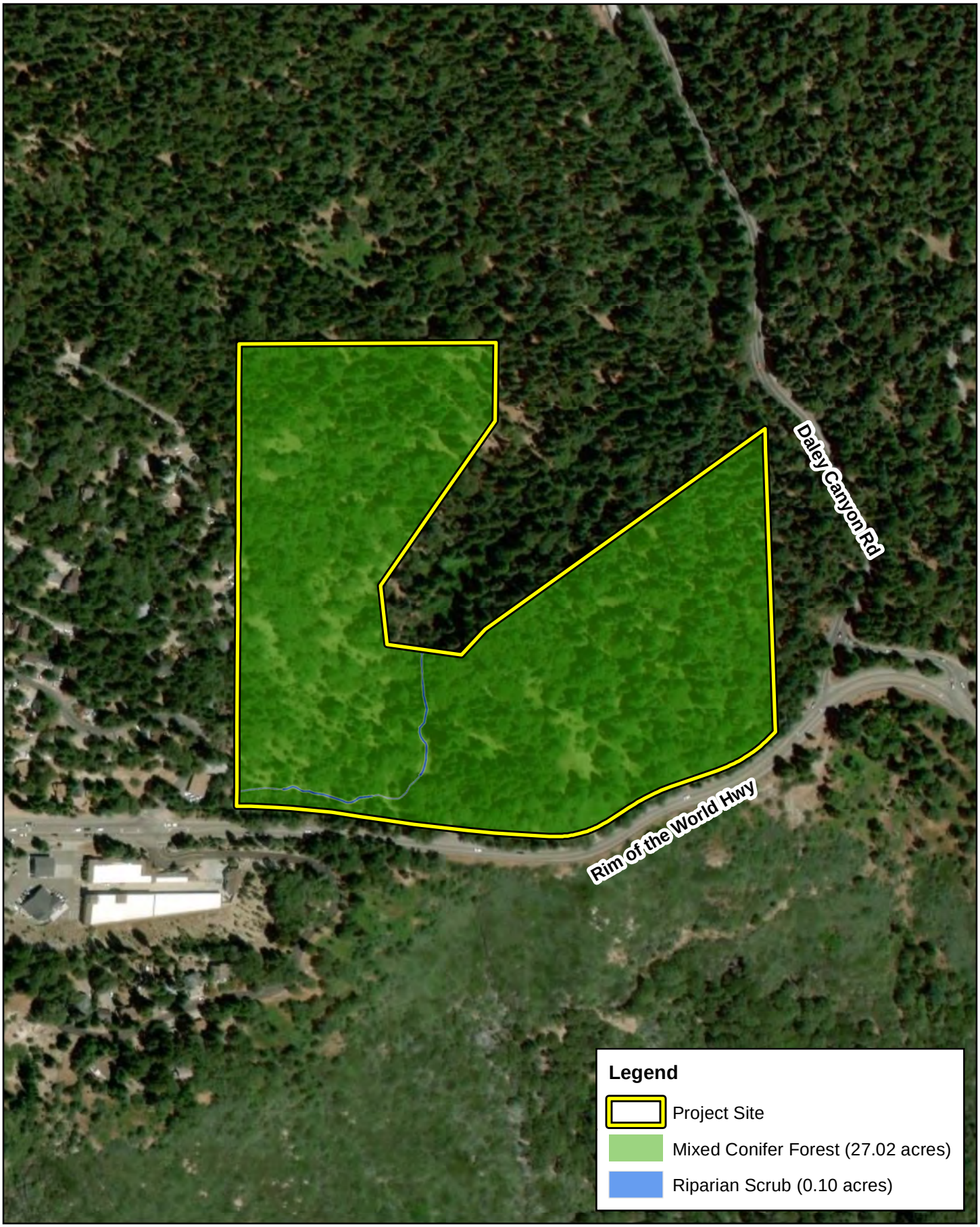
Natural Plant Community	On-Site Acreage	Project Impact Acreage
Mixed Conifer Forest	27.02	13.50
Riparian Scrub	0.10	0.10
TOTAL	**27.12**	**13.60**

4.2.1 Mixed Conifer Forest (27.02 Acres)

The project site primarily supports a mixed conifer forest plant community. Common tree species present within this forest community include white fir (*Abies concolor*), big cone pine (*Pinus coulteri*), Jeffery pine (*Pinus jeffreyi*), incense cedar (*Calocedrus decurrens*), sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*), and California black oak (*Quercus kelloggii*). Shrub species found within the understory consists of California coffeeberry (*Frangula californica*) and California bay (*Umbellularia californica*).

4.2.1 Riparian Scrub (0.10 Acres)

Riparian scrub plant community is found along the drainage feature that traverses the project site and is dominated by arroyo willow (*Salix lasiolepis*), mountain dogwood (*Cornus nuttallii*), California mugwort (*Artemisia douglasiana*), tarragon (*Artemisia dracunculus*), and Mountain pink currant (*Ribes nevadense*).



ELMT CONSULTING

0 125 250 500 Feet

Source: Google Imagery, San Bernardino County

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Vegetation

Exhibit 6

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that have been observed or are expected to occur within the project site. The discussion is to be used a general reference and is limited by the season, time of day, and weather conditions in which the field surveys were conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. Refer to Appendix B for a complete list of wildlife species observed during previous and current surveys.

4.3.1 Fish

No fish were observed on the project site during the field surveys. The drainage feature located within the project site contained a small amount of flowing water, however, the on-site drainage feature likely does not support standing water for long periods of time that would be sufficient to support populations of fish. Fish may be present within the perennial sections of adjacent creeks downstream of the site. Therefore, no fish are expected to occur and are presumed absent from the project site.

4.3.2 Amphibians

No amphibians were observed within the project site during the field surveys. The ephemeral drainage features located within the boundaries of the project site contained a small amount of flowing water and has the potential to provide marginal habitat for amphibians that do not need large bodies of water. Additionally, amphibians have the potential to occur under leaf litter or aestivating underneath the surface within the vicinity of the drainage features. Additionally, when surface water is present, amphibians may be present. Amphibian species most likely to occur when water is present, or to aestivate in the area when water is not, include Baja California treefrog (*Pseudacris hypochondriaca*), California treefrog (*Pseudacris cadaverina*), and garden slender salamander (*Batrachoseps major major*). Other amphibian species detected or observed on-site during previous field surveys include Monterey ensatina (*Ensatina eschscholtzii eschscholtzii*).

4.3.3 Reptiles

The project site is undeveloped and has the potential support a wide variety of reptilian species adapted to the natural habitats on-site. Common reptilian species that have the potential to occur on-site include California kingsnake (*Lampropeltis californiae*), western fence lizard (*Sceloporus occidentalis*), and Great Basin gopher snake (*Pituophis catenifer deserticola*). Reptilian species detected or observed on-site during previous field surveys include alligator lizard (*Elgaria multicarinata*), western side-blotched lizard (*Uta stansburiana elegans*), southern sagebrush lizard (*Sceloporus graciosus vandenburgianus*), and Skilton's skink (*Plestiodon skiltonianus skiltonianus*).

4.3.4 Birds

The project site provides suitable nesting and foraging habitat for a variety of resident and migrant bird species. Bird species detected during the field surveys included California scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), Steller's jay (*Cyanocitta stelleri*), mourning dove (*Zenaida macroura*), mountain chickadee (*Poecile gambeli*), northern flicker (*Colaptes auratus*), and western bluebird (*Sialia mexicana*). Other common bird species that are expected to occur on-site include red-tailed hawk (*Buteo jamaicensis*), western wood-pewee (*Contopus sordidulus*), and Nuttall's woodpecker (*Picoides nuttallii*). It should also be noted that California spotted owl was observed within the project site during surveys conducted by Tanner Environmental Services in 2007 but has not observed since 2007. Other bird species detected or observed on-site during previous field surveys include brown creeper (*Certhia americana*), dark-eyed junco (*Junco hyemalis*), acorn woodpecker (*Melanerpes formicivorus*), band-tailed pigeon (*Patagioenas fasciata*), black-headed grosbeak (*Pheucticus melanocephalus*), spotted towhee (*Pipilo maculatus*), American robin (*Turdus migratorius*), yellow-rumped warbler (*Setophaga coronata*), red-breasted nuthatch (*Sitta canadensis*), and white-breasted nuthatch (*Sitta carolinensis*).

4.3.5 Mammals

The project site and surrounding habitat has the potential to support a variety of mammalian species. However, most mammal species are nocturnal and are difficult to observe during a diurnal field survey. Mammals and/or sign detected during the field surveys and previous surveys include mule deer (*Odocoileus hemionus*), western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), and California black bear (*Ursus americanus*). Other common mammalian species that are expected to occur on-site include opossum (*Didelphis virginiana*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and Audubon's cottontail (*Sylvilagus audubonii*). Other mammalian species detected or observed on-site during previous field surveys include striped skunk (*Mephitis mephitis*), deer mouse (*Peromyscus maniculatus*), and Botta's pocket gopher (*Thomomys bottae*).

4.4 NESTING BIRDS

No active nests or birds displaying nesting behavior were observed during the field surveys. The plant communities within the project site provide foraging and nesting habitat for a variety of year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area. The project site contains abundant arboreal nesting habitat throughout, with minimal shrub or ground nesting habitat.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a

wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site is surrounded by natural plant communities and forest habitat and abuts a wildlife movement corridor along its western boundary, as designated by the San Bernardino County General Plan Open Space Element (Exhibit 7, *Wildlife Corridors*). This corridor, designated as "Strawberry Creek Corridor," provides movement opportunities between the San Bernardino National Forest and the Mojave River. Additionally, this corridor provides an area for wildlife to utilize for traversing the San Bernardino Mountains from the north (Mojave River) end to the south (City Creek), and vice versa.

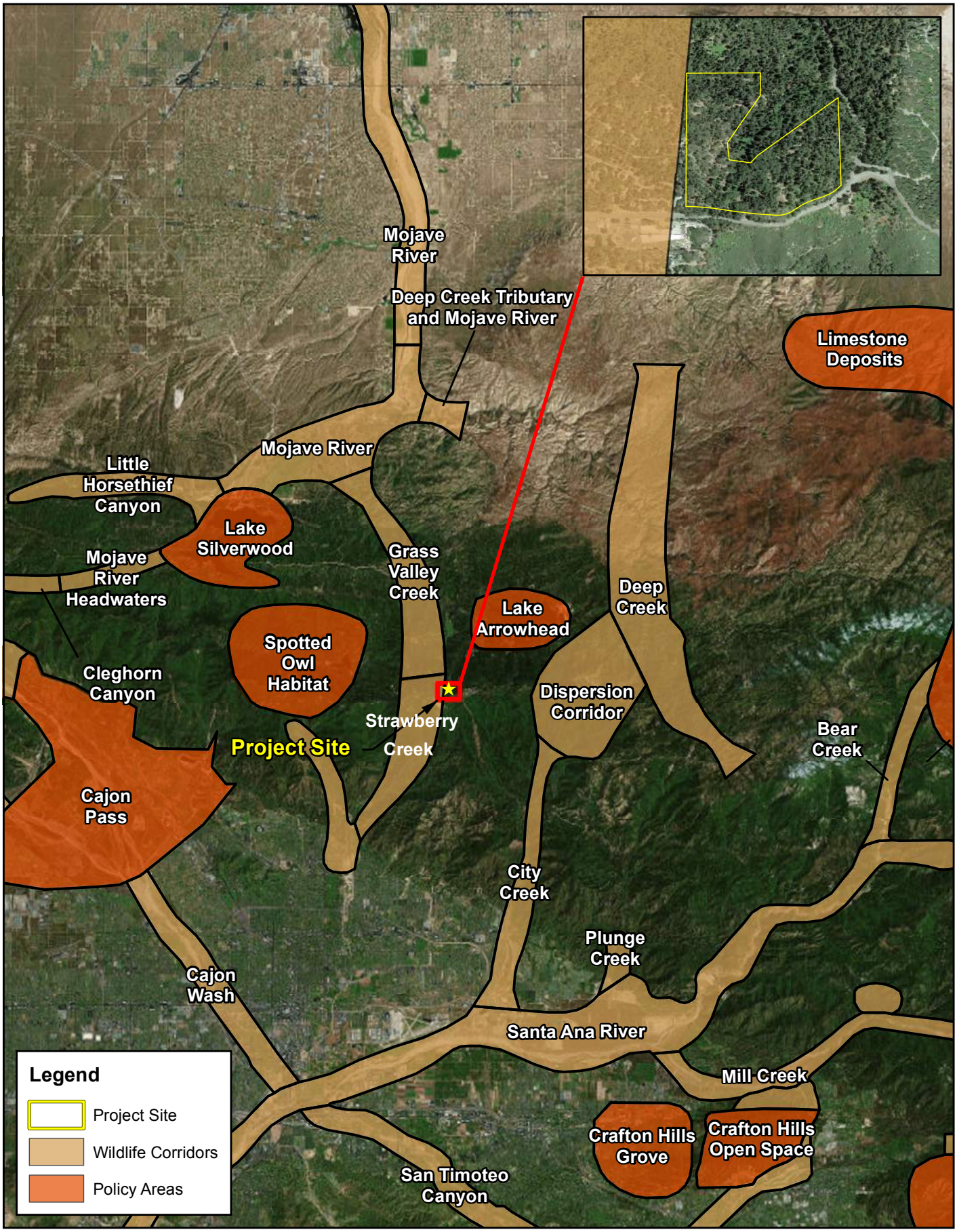
The project site has the potential to support the movement of mule deer, bobcat, coyote, and black bear through the project site and surrounding areas. Wildlife movement through these areas will be impeded by project-related disturbance. However, the northern portions of the project site and adjacent habitats will remain undisturbed and should continue to provide movement opportunities for wildlife. As a result, the project site and the surrounding open space will continue to provide opportunities for local wildlife movement and will remain as a corridor for highly mobile wildlife species.

4.6 JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Board regulates discharges to surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and CDFW regulates alterations to streambed and associated plant communities under Section 1600 *et seq.* of the California Fish and Game Code.

A single drainage features were observed within the southwest corner of the project site during the field surveys. This drainage feature flows offsite to the north into the 9.81-acre area that was recently deeded to San Bernardino County Flood Control (SBCFCD) for their Rimforest Flood Control Project. This onsite drainage is tributary to Little Bear Creek and ultimately Lake Arrowhead (Traditional Navigable Water). Since this drainage feature possesses a surface hydrologic connection to downstream "waters of the United States/waters of the State" and fall under the regulatory authority of the Corps, Regional Board, and CDFW.

Based on a review of the conceptual site plan, approximately 0.05 acre (852 linear feet) of Corps/Regional Board jurisdiction (non-wetland waters) and approximately 0.10 acre (852 linear feet) of CDFW jurisdiction (streambed/riparian) will be permanently impacted by development. However, the Rimforest Flood Control Project is projected to be installed prior to the proposed development of the Church of the



Source: San Bernardino County, ESRI World Imagery Basemap

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Wildlife Corridors

Exhibit 7

Woods site and would include the jurisdictional waters found on the proposed project site. Permitting for impacts to jurisdictional waters would be covered by the County's Rimforest Flood Control Project.

However, if the County's planned Rimforest Flood Control Project is not completed prior in the initiation of the Church of the World's site development, impacts to jurisdictional waters have been included in the CEQA analysis for the Church of the Woods proposed project site. This will help avoid unnecessary delays for the Church of the Woods, if it necessary to acquire project-specific regulatory approvals. The proposed Church of the Woods project includes a proposed alternative pipeline route to accommodate a project specific flood control facility. The requirements for acquiring the necessary regulatory approvals is discussed below in Section 5.3.1. under Mitigation Measure 2.

Impacts, if undertaken by the Church of the Woods, will require the following regulatory approvals prior to project implementation: CWA Section 404 Nationwide Permit No. 39: *Commercial and Institutional Developments,* CWA Section 401 Water Quality Certification, and CDFW Section 1602 Lake or Streambed Alteration Agreement. Preliminary plans developed by the County calls for the onsite waters to be included in County's Rimforest Flood Control Project that is scheduled to be in place prior to the development of the Church of the Woods project. This will necessitate that the County acquired the above-mentioned permits. An alternative pipeline is included in the Church's site plans if the County is unable to process and implement the Rimforest Flood Control Project prior to the initiation of the Church of the Woods project.

4.7 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDB Rarefind 5, the Quickview Tool in BIOS, and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California was queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified twenty-one (21) special-status plant species, forty-seven (47) special-status wildlife species, and seven (7) special-status plant communities as having the potential to occur within the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity of the project site are presented in *Table C-1: Potentially Occurring Special-Status Biological Resources*, provided in Appendix C. Refer to Table C-1 for a detailed analysis regarding the potential occurrence of special-status plant and wildlife species within the project site.

4.7.1 Special-Status Plants

Twenty-one (21) special-status plant species have been recorded in the CNDDB and CNPS in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles (refer to Appendix C). Thomas Leslie Corporation (TLC) conducted twenty-five (25) botanical surveys within the project site over a three-year period from 2001 to 2003. Eight surveys were conducted in 2001 during the months of August, September, and October. In 2002, nine surveys were conducted during the months of April, June, and July. Eight surveys were conducted in 2003 during the months of June and July. No special-status plant species were observed on-site during the twenty-five surveys. No special-status plant species were observed on-site during the recent field surveys conducted by ELMT in 2017 and 2018. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site has a low potential to support two non-listed but CNPS List 1B plant species: Palmer's mariposa-lily (*Calochortus palmeri* var. *palmeri*) and lemon lily (*Lilium parryi*). Both species occur within mesic soils associated with montane coniferous forest. While the site support montane meadow along the shoreline of Big Bear Lake, the habitat is highly disturbed. Neither species were observed on the project site by sensitive plant surveys during the 2018 blooming season. All remaining special-status plant species are presumed to be absent from the project site based on habitat requirements, availability/quality of habitat needed by each species, and known distributions.

4.7.2 Special-Status Wildlife

Forty-seven (47) special-status wildlife species have been reported in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles (refer to Appendix C). No special-status wildlife species were observed during the field surveys. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a low to moderate potential to support San Bernardino flying squirrel, southern rubber boa, and California spotted owl; and; and a low potential to support olive-sided flycatcher (*Contopus cooperi*), purple martin (*Progne subis*), long-eared owl (*Asio otus*), bald eagle (*Haliaeetus leucocephalus*) California mountain kingsnake (San Bernardino population) (*Lampropeltis zonata* [*parvirubra*]), and white-eared pocket mouse (*Perognathus alticolus alticolus*).

All remaining special-status wildlife species identified in the CNDDB are presumed to be absent from the project site based on habitat requirements, availability/quality of habitat needed by each species, and known distributions. Due to their regional significance and their potential occurrence on the project site, habitat suitability assessments were conducted for southern rubber boa, San Bernardino flying squirrel, and California spotted owl, as well as southern mountain yellow-legged frog. The results of the habitat suitability assessments are described in detail below for each species.

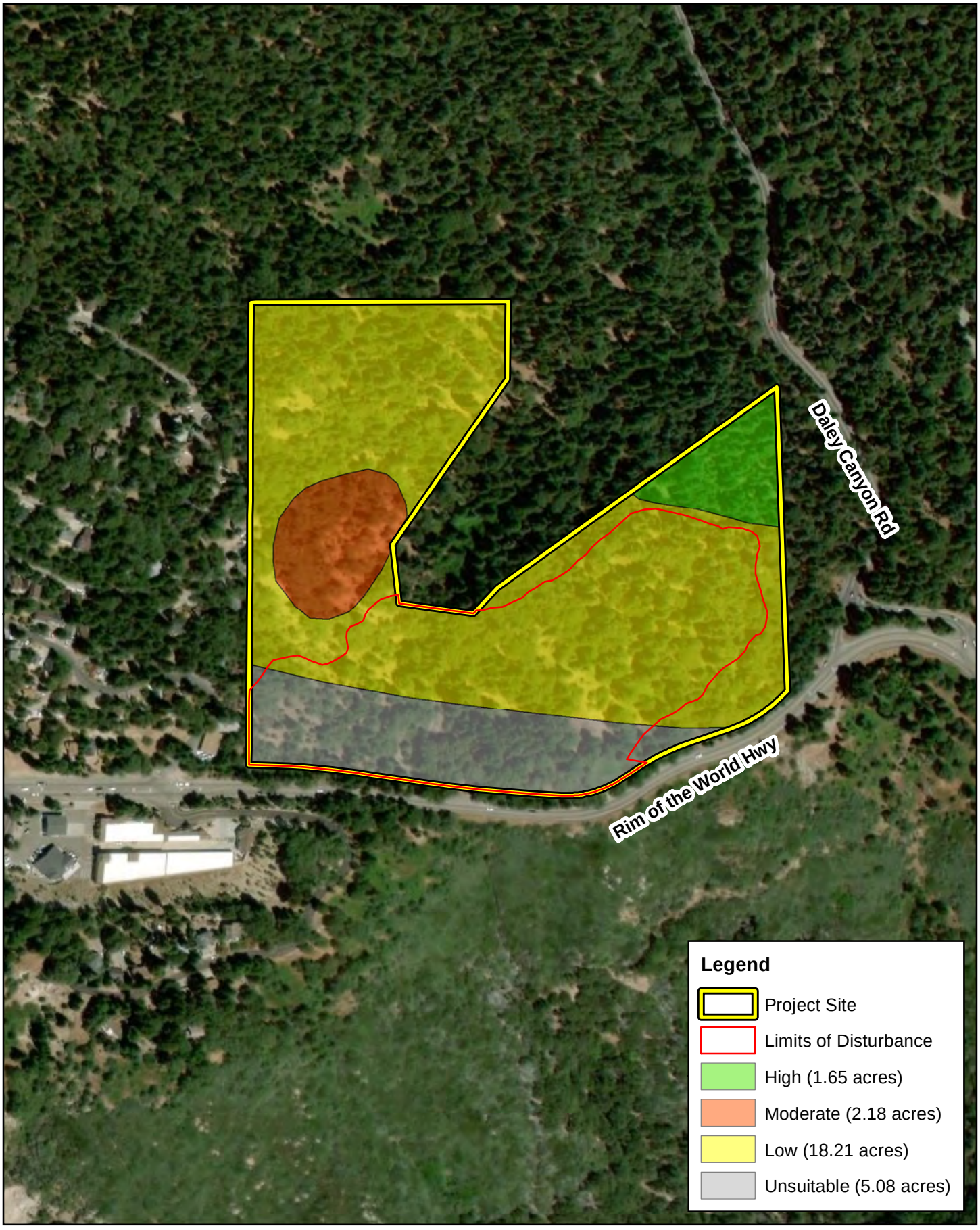
4.7.2.1 Southern Rubber Boa

The southern rubber boa (SRB) has been designated by the CDFW as a threatened species under the California Endangered Species Act and is also considered a sensitive species in the San Bernardino National Forest by the U.S. Forest Service. SRB inhabits oak-conifer and mixed-conifer forests at elevations between 5,000 to 8,200 feet where rocks and logs or other debris provide shelter. It is semi-fossorial with either nocturnal or crepuscular tendencies, making it difficult to find in a general diurnal field survey. It is restricted to the San Bernardino and San Jacinto Mountains. They emerge from hibernation in April and general disappear during the summer months though they can appear after rains or periods of high humidity (Stewart et. al. 2005). Hoyer and Stewart (2000), found that almost all collections of SRB were on or around small to large rock outcrops which are important for hibernacula.

According to the CNDDB, there are seventeen (17) records of southern rubber boa within the Harrison Mountain USGS 7.5-minute quadrangle, however, none occur on the project site. Focused surveys for southern rubber boa were conducted in 2002 within the project site, but no southern rubber boa was detected.

An updated habitat suitability assessment for southern rubber boa was conducted on January 25, 2018 by Leatherman BioConsulting, Inc. Mr. Brain Leatherman has been a wildlife biologist for over 25 years including extensive specific experience conducting habitat assessments and focused surveys for SRB in the San Bernardino Mountains. His survey consisted of walking widely meandering transects. The location of surface rocks and rock outcrops were recorded using GPS. The extent and quality of rock outcrops and other suitable microhabitat features used as refugia, included downed logs and trees, were assessed and recorded.

Topography consists of moderate to steep slopes largely covered with mixed coniferous forests. A natural drainage runs from the northeast corner to the southwest corner through the center of the project site. Dense riparian scrub occurs along both banks of the creek in southern half of the site. Soils onsite appear to be moderately deep, well drained sandy loams and gravels. However, rocky outcrops, needed for hibernacula, are generally lacking on the site. A few areas of high quality rocky outside were noted by Brian Leatherman on Figure 4 of his report (see Appendix D). Surface boulders do occur sporadically across the site and along the streambed. The general lack of rocky outcrops and only a scattered presence of surface rocks reduces the likelihood that SRB would use the site on a consistent basis. The west side of the project site, west of the stream, consists of south facing slopes, a relatively open forest with sparse trees and little to no shrub cover or surface debris (decaying logs, trees stumps, bark, etc.) and is generally low-quality habitat. (Exhibit 8, *Southern Rubber Boa Habitat Suitability*). There are 18.21 acres of low quality habitat on the site. The areas of moderate and high-quality habitat for SRB occurs along the western boundary and in the northeast portion of the site, respectively (see Exhibit 8). Approximately 1.65 acres of high quality habitat occurs on north-facing slopes, supporting relatively dense mixed conifers with substantial surface debris (decaying logs, bark, fallen tree, leaf litter, and woody debris). The 2.18 acres of moderate quality habitat is associated with rocky outcrops along the western boundary. The 5.08-acre strip of habitat north of Highway 18, along



ELMT CONSULTING

0 75 150 300 Feet

Source: Google Imagery, San Bernardino County

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Southern Rubber Boa Habitat Suitability

Exhibit 8

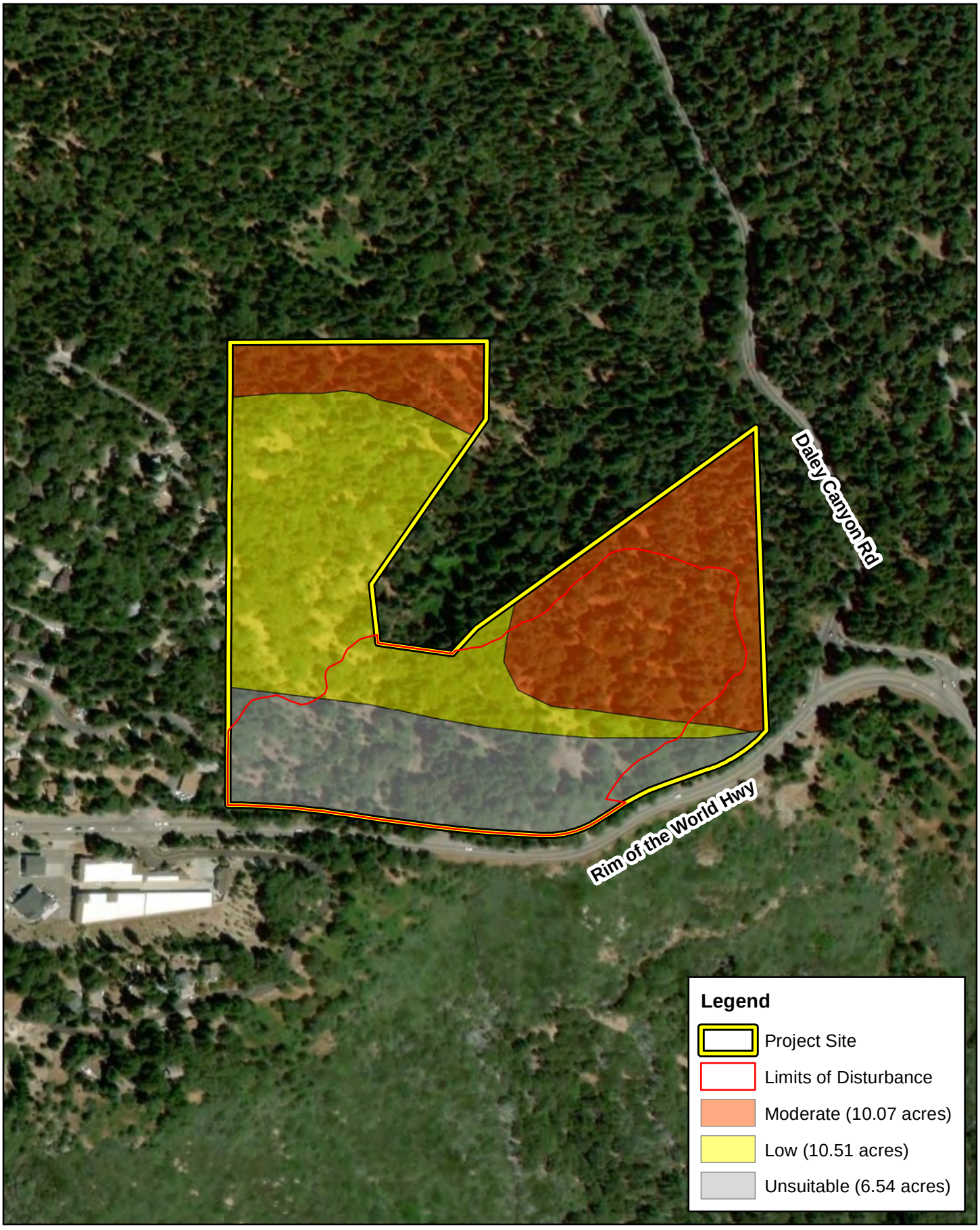
the site's southern boundary of the site is disturbed, open habitat that was determined to be unsuitable for SRB.

SRB are not expected in unsuitable or areas of low-quality habitat but could occur in the northeast portion of the project site that supports high quality habitat or along the western boundary in the area with moderate quality habitat.

4.7.2.2 San Bernardino Flying Squirrel

The San Bernardino flying squirrel is not a listed species by USFWS or CDFW. However, CDFW has designated San Bernardino flying squirrel a species of special concern. It is also considered a sensitive species in the San Bernardino National Forest by the U.S. Forest Service. The historic distribution of the San Bernardino flying squirrel includes both the San Bernardino and San Jacinto Mountains. Recent data analysis suggests that this subspecies may now only be extant in the San Bernardino Mountains. The San Bernardino flying squirrel is nocturnal and is rarely observed. It occurs in a range of coniferous and deciduous forests, including riparian forests and mixed conifer forests. They are usually found in mature old-growth forests, although forests with second-growth stands may also suffice. Occupied habitat tends to have an open understory with a heavy duff (organic debris) layer and a somewhat closed canopy. For locomotion/gliding purposes, they require somewhat dense tree cover (less than 120 feet between tall trees and preferably around 65 feet). Trees with snags and cavities suitable for nesting and denning are required, and trees that are greater than 100 feet tall and greater than 30 inches diameter at breast height are preferred. The San Bernardino flying squirrel depends strongly on truffles and arboreal moss for food, as well as to a much lesser degree seeds, nuts, insects, fruit, bird eggs, and even tree sap. Larger, older trees with associated woody debris and decaying logs tend to indicate a higher potential for healthy truffle growth in the underlying soil.

According to the CNDDB, there has been six (6) recorded occurrences of San Bernardino flying squirrel in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles. The most recent occurrence within the vicinity of the project site was documented in 2005 approximately two-mile northwest of the project site along Dart Creek (CNDDB 2005). A single San Bernardino flying squirrel was documented on the project site in 2003 during a trapping study (TLC 2003). However, a trapping study in 2007 by PCR Services Corporation was negative for this species. The project site supports low quality habitat on the western and central portions of the project site (10.51 acres) and generally consists of a mixture of young and old trees, with most of the trees widely spaced, over 150 feet (Exhibit 9, *San Bernardino Flying Squirrel Habitat Suitability*). The canopy is generally very open with few areas of closed canopy and most younger trees that lack the habitat requirements for this species that includes nesting/denning opportunities, gliding needs and the development of an understory with adequate woody debris. The eastern portion of the project site supports 10.07 acres of moderate quality habitat consisting of a mixture of young and old trees with canopy that varies from closed to open. Woody debris is present but with an understory is reasonably open. The eastern area was determined to provide moderate quality habitat. The southern boundary (7.10 acres), due to its proximity to Highway 18 and moderate level of disturbance, is considered unsuitable. San Bernardino flying squirrel has a moderate potential to occur



CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

ELMT CONSULTING

0 75 150 300 Feet

San Bernardino Flying Squirrel Habitat Suitability

Source: Google Imagery, San Bernardino County

Exhibit 9

along the northern boundary and within the eastern portion of the project site but is not expected to occur within the remainder of the project site.

4.7.2.3 Southern Mountain Yellow-legged Frog

The southern mountain yellow-legged frog has been designated by the CDFW and the USFWS as endangered under the California Endangered Species Act and the federal Endangered Species Act, respectively. It is also considered a sensitive species by the U.S. Forest Service in the San Bernardino National Forest. The only known remaining populations of southern mountain yellow-legged frog include one (1) location in the San Bernardino Mountains.

Southern mountain yellow-legged frog is strongly associated with high-elevation creeks, meadows, and ponds that are fed by springs and/or snowmelt. It is not uncommon for portions of occupied southern mountain yellow-legged frog aquatic habitat to freeze over on the surface in the winter. While sections of creeks may dry up, at least some perennial water is required for southern mountain yellow-legged frog to persist in an area due to reproductive, larval growth, and hydration needs. Ideal creek habitat for southern mountain yellow-legged frog includes numerous pools and may include both rapid and slow flows as well with small waterfalls. Substrate within and surrounding the creek generally includes bedrock, fine sand, rubble, rocks, or boulders. Southern mountain yellow-legged frog is diurnal and requires suitable basking habitat during the day. Downed logs are common elements of southern mountain yellow-legged frog habitat and, along with rocks, function as basking sites and refugia.

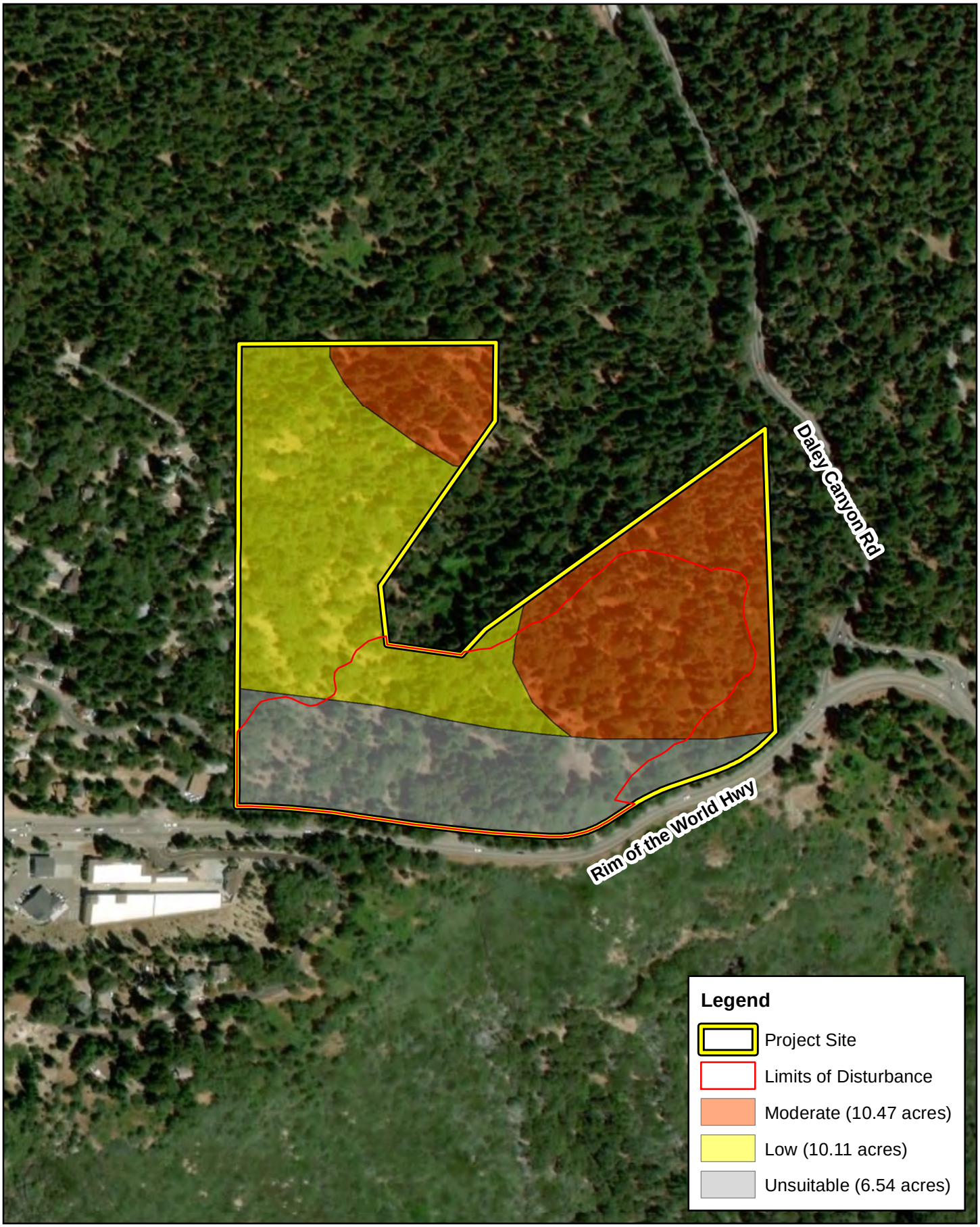
According to the CNDDB, there are six (6) recorded occurrences of southern mountain yellow-legged frog in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles. However, four of these occurrences are historic and are now extirpated and the remaining two are of the same population in East Fork City Creek. This population, the only population in the San Bernardino Mountains, is approximately 3.80 miles southeast of the project site. It was once estimated at 50 individuals based on USGS surveys in 2002 and 2003. However, this site was disturbed by a wildfire and later flooding in 2003, resulting in a lack of observations until 2006, when frogs were again found by USGS for the next six years. In 2011, all detected southern mountain yellow-legged frog were salvaged from East Fork City Creek as a means of rescuing the population through captive breeding and reintroduction. The southern mountain yellow-legged frog has not been detected during recent surveys over the last several years until September 2015, when a single adult male was found by USGS.

ELMT's 2018 habitat suitability assessment for southern mountain yellow-legged frog determined that no suitable habitat is present within the project site. The drainage features within the project site are generally too narrow, too shaded, and provide little, if any, perennial aquatic habitat for this species. Additionally, basking habitat is very limited within the project site due to the dense surrounding vegetation. This species was not detected or observed on-site during previous field surveys conducted in 2001 and 2003 by Thomas Leslie Corporation (TLC). As a result, southern mountain yellow-legged frog is presumed absent from the project site and no additional surveys are recommended.

4.7.2.4 California Spotted Owl

The California spotted owl has been designated by the CDFW as a species of special concern and is also considered a sensitive species in the San Bernardino National Forest by the U.S. Forest Service. The California spotted owl is distributed across the Sierra Nevada from Shasta County to Kern County, and along coastal southern California mountain ranges from Monterey County to San Diego County. In the San Bernardino Mountains, California spotted owl nests in mixed conifer habitat, oak/ Douglas-fir habitat, and hardwood/conifer habitat. In the San Bernardino Mountains the average elevation of occupied nest habitat is at 6,000 feet. Home ranges in the San Bernardino Mountains vary from approximately 800 acres to 2,200 acres. Eighty percent of nesting trees have canopy cover greater than 70 percent, with surrounding nesting habitat having at least two canopy layers. Nest trees often contain large cavities, broken tops, and/or dwarf mistletoe brooms. In southern California conifer forest, stick nests placed on platforms built by other species are most common. In coniferous forests, such as that on-site, large snags and fallen logs are typically present in nesting habitat; this appears to be less important in lower-elevation nesting habitat. Nesting trees are on average 37 inches diameter at breast height in the San Bernardino Mountains and are typically on north-facing slopes where temperatures tend to be cooler. While California spotted owls may forage in the same habitat that they use for nesting and roosting, foraging habitat is often much more open, with canopy cover as low as 40 percent to provide large amounts of open space for flying. Although the California spotted owl will forage opportunistically on a variety of different prey species, their primary prey (79 to 97 percent) is woodrats (typically dusky-footed woodrat [*Neotoma fuscipes*]).

There are no recorded occurrences of California spotted owl in the CNDDB in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles. Tanner Environmental Services performed presence/absence and reproductive surveys for California spotted owl between March 30 and June 6, 2007. One male California spotted owl was observed foraging within the along the site's eastern boundary during the surveys; however, it was not found to be either roosting or nesting on the project site. ELMT's 2018 habitat suitability assessment for California spotted owl determined that while some areas of moderate quality habitat (10.47 acres) are present along the northern boundary and eastern portion of the project site, habitats in the western and central portions of the project site (10.11 acres) provide low quality habitat for California spotted owl (Exhibit 10, California *Spotted Owl Habitat Suitability*). The moderate quality habitat consists of an equal mixture of young and old trees with a canopy that varies from closed to open and a dense understory of new trees. Woody debris is still present in the area. Low quality habitat consists of a mixture of young and old trees, with most of the trees young and widely spaced, over 150 feet. The canopy is generally open with few areas of closed canopy needed for cover and only a few trees that are tall and mature enough to provide nesting cavities and hunting perches for this species. The understory varies open duff layers with woody debris to areas of dense forbs or new trees. As a result, California spotted owl has a moderate potential to occur along the northern boundary and in the eastern portion of the project site but is not expected to occur within the remainder of the project site.



ELMT CONSULTING

0 75 150 300 Feet

Source: Google Imagery, San Bernardino County

CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

California Spotted Owl Habitat Suitability

Exhibit 10

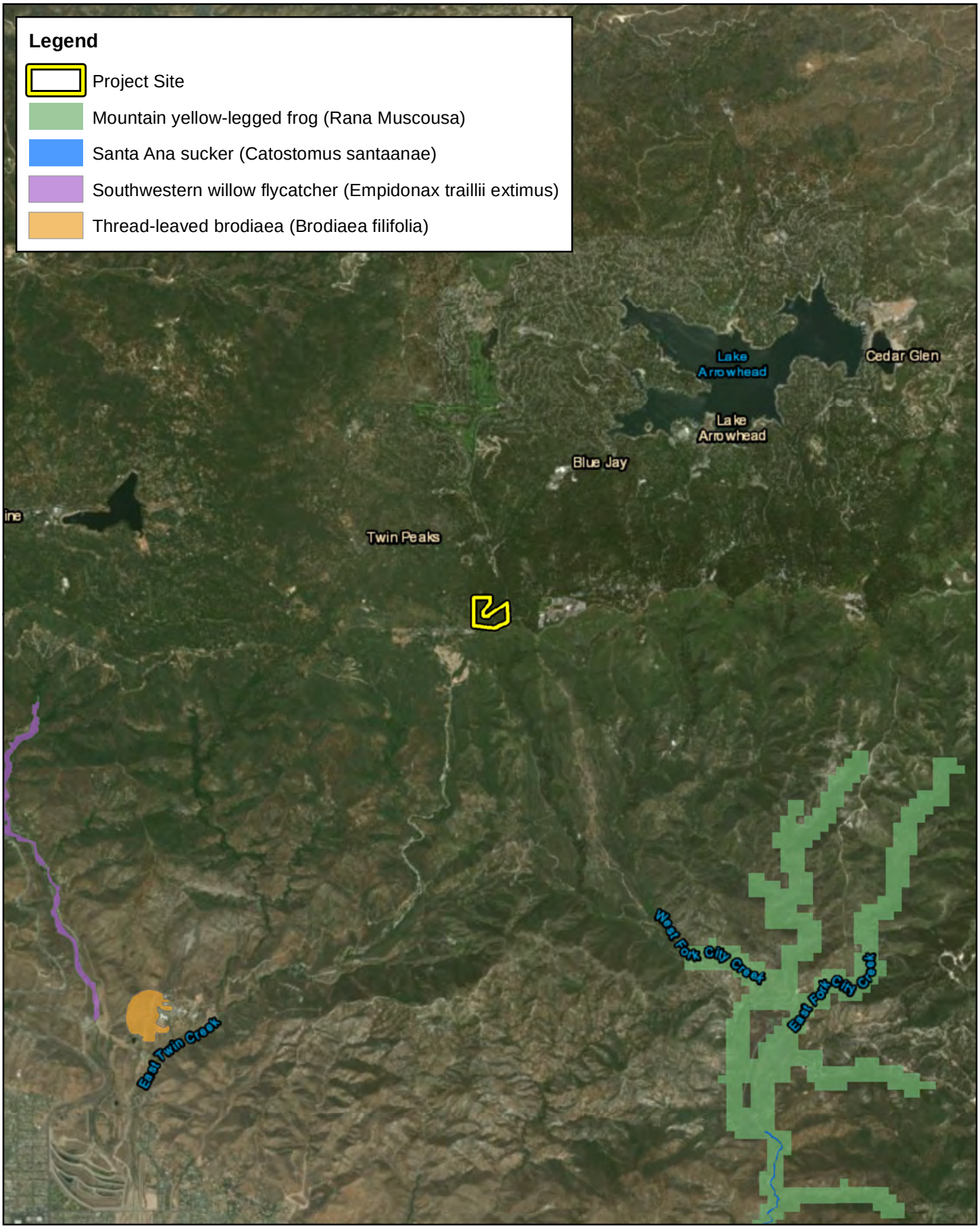
4.7.3 Special-Status Plant Communities

According to the CNDDB, seven (7) special-status plant communities have been reported in the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake USGS 7.5-minute quadrangles: Mixed Montane Chaparral, Riversidean Alluvial Fan Sage Scrub, Semi Desert Chaparral, Southern Mixed Riparian Forest, Southern Sycamore Alder Riparian Woodland, Southern Willow Scrub, and Westside Ponderosa Pine Forest (refer to Appendix C). There were no special-status plant communities observed on the project site during the habitat assessment.

4.8 CRITICAL HABITAT

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. In the event that a project may result in take or adverse modification to a species' designated Critical Habitat, a project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus. This may include projects that occur on federal lands, require federal permits (e.g., CWA Section 404 permit), or receive any federal oversight or funding. If there is a federal nexus, then the federal agency that is responsible for issuing funds or permits would be required to consult with the USFWS under the federal Endangered Species Act.

The project site is not located with federally designated Critical Habitat (Exhibit 11, *Critical Habitat*). Therefore, the loss or adverse modification of Critical Habitat will not occur and consultation with the USFWS under the federal Endangered Species Act will not be required.



CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Critical Habitat

ELMT CONSULTING

0 0.5 1 2 Miles

Source: Google Imagery, San Bernardino County

Exhibit 11

Section 5 Project Impact Analysis and Mitigation Measures

The discussion below provides a summary of survey results; project related impacts; avoidance and minimization measures.

5.1 SPECIAL-STATUS PLANTS

No special-status plant species were observed on-site during a 2018 blooming season surveys. The surveys followed the methodology described in CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Communities* (2009), CNPS's *Botanical Survey Guidelines* (2001), and USFWS's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996). Emphasis was placed on the potential for Palmer's mariposa-lily, lemon lily, and Parish's yampah to be present based on a suitability assessment which determined that these three species have a low potential to occur. All remaining special-status plant species identified in the CNDDB or CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California are presumed to be absent from the project site based on habitat requirements, availability/quality of habitat needed by each species, and known distributions. It should also be noted that no special-status plant species were observed on-site during twenty-five surveys conducted by TLC in 2001, 2002, and 2003.

5.1.1 Special-Status Plant Species Mitigation

Since no special-status species occur onsite and are presumed to be absent, mitigation for impacts to special-status plants is not required.

5.2 SPECIAL-STATUS WILDLIFE

No special-status wildlife species observed during the field survey. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a high potential to support olive-sided flycatcher, San Bernardino flying squirrel, southern rubber boa, bald eagle, osprey, and California spotted owl; a moderate potential to support purple martin; and a low potential to support long-eared owl, California mountain kingsnake (San Bernardino population), and white-eared pocket mouse.

A habitat suitability assessment for southern rubber boa was conducted on January 25, 2018 by Leatherman BioConsulting, Inc. (refer to Appendix D). Based on the habitat suitability assessment, high quality habitat for the southern rubber boa occurs at the northeast end of the site in association with the surface rocks, rotten logs, leaf litter, and the mesic habitat on the forested slopes east of the central drainage. Some surface rocks also occur on the slopes west of the drainage below the residential area west of the project site but the area does not provide rotten logs, leaf litter, and the mesic habitat on the forested slopes east of the

central drainage. This western area was determined to support moderate quality southern rubber boa habitat. Based on these conditions, the potential occurrence of the southern rubber boa is high (approximately 1.65 acres) to moderate (approximately 2.18 acres) in those areas, respectively. The remaining portions of the project site were determined to have a low (approximately 18.21 acres) potential or are considered unsuitable (approximately 5.08 acres) for this species. Southern rubber boa is not likely to be present within the designated footprint based on the results of the updated habitat suitability assessment and known occurrences within the vicinity of the project site. Development of the project site will result in approximately 8.64 acres of impacts to low quality southern rubber boa habitat. Therefore, consultation with CDFW is recommended to discuss compensation for impacts to low quality habitat. Compensation for the loss of low-quality habitat will be mitigated onsite by setting aside in perpetuity and permanently managing the 3.83 acres of moderate and high quality southern rubber boa habitat, as well as the remaining 9.57 acres of low quality southern rubber boa habitat.

San Bernardino flying squirrel was observed within the boundaries of the project site during trapping surveys conducted in 2003. However, the most recent trapping surveys conducted in 2007 by PCR Services Corporation were negative for this species. ELMT conducted a habitat suitability assessment for San Bernardino flying squirrel February 2018 and determined that there is no area onsite that was determined to provide high quality San Bernardino flying squirrel habitat, while approximately 10.07 acres of moderate quality habitat were found in the northern and eastern portions of the project site. The remainder of the project site supports low quality habitat (approximately 10.51 acres) or is considered unsuitable (6.54 acres) for this species and does not provide for adequate foraging, nesting/denning, and gliding needs due to open canopy cover and lack of any downed woody debris on the forest floor. Existing development surrounding the site and an abundance of newer tree growth throughout this general area, has resulted in habitat fragmentation further reducing the chances of occurrences due to the lack of recolonization opportunities. San Bernardino flying squirrel, based on the results of the updated habitat suitability assessment and known occurrences within the general vicinity, is not expected to occur within the proposed project footprint. Development of the project site would result in approximately 2.56 acres of impacts to low quality and 4.61 acres if impacts to moderate quality San Bernardino flying squirrel habitat. Compensation for the loss of moderate and low-quality habitat will be mitigated onsite by setting aside in perpetuity and permanently managing the 5.46 acres of moderate quality San Bernardino flying squirrel habitat, as well as the remaining 7.95 acres of low-quality San Bernardino flying squirrel habitat.

Tanner Environmental Services performed presence/absence and reproductive surveys for California spotted owl between March 30 and June 6, 2007. One male California spotted owl was observed foraging within the southeast portion of the project site during the surveys; however, it was not found to be either roosting or nesting on the project site. ELMT conducted a habitat suitability assessment in February 2018 for California spotted owl and determined that suitable habitat is present on the project site, with moderate quality habitat located in the northeastern portion of the project site (approximately 10.47 acres). The remainder of the project site supports low quality habitat (approximately 10.11 acres) or is considered unsuitable (7.10 acres) due to its proximity to Highway 18 and the heavy level of disturbance adjacent to the highway. California spotted owl is not likely to be present within the proposed project footprint based

on the results of the updated habitat suitability assessment and known occurrences within the vicinity of the project site. Development of the project site would result in approximately 2.56 acres of impacts to low quality and 4.61 acres of impacts to moderate quality California spotted owl habitat. Compensation for the loss of moderate and low-quality habitats will be mitigated onsite by setting aside in perpetuity and permanently managing the 5.86 acres of moderate quality California spotted owl habitat, as well as the remaining 7.55 acres of low-quality California spotted owl habitat.

The project site and surrounding area has the potential to provide refuge/cover from predators, perching sites, and favorable conditions for avian nesting that could be impacted by construction activities associated with the Project. Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey should be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season (February 1st to August 31st). Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.

5.2.1 Special-Status Wildlife Mitigation

Three special-status wildlife species were found to have a moderate or higher potential to occur on the project site. A suitability assessment of the onsite habitats was conducted for each of these three species. Based on these assessments, the project is expected to affect 8.64 acres of low quality southern rubber boa habitat. No moderate quality or high-quality southern rubber boa habitat will be impacted. No offsite areas will be impacted by the project.

The project is expected to affect 4.61 acres of moderate-quality and 2.56 acres of low-quality San Bernardino flying squirrel habitat. No high-quality habitat was found onsite. No offsite areas will be impacted by the project.

The project is also expected to affect 4.61 acres of moderate-quality and 2.56 acres of low-quality California spotted owl habitat. No high-quality habitat was found onsite. No offsite areas will be impacted by the project.

Avoidance and Minimization Measures for Special-Status Wildlife Species. Three special-status wildlife species were determined to have a moderate or higher potential to occur: southern rubber boa, San Bernardino flying squirrel and California spotted owl. Due to their potential presence, the following avoidance measures was implemented:

- Based on the presence of moderate or higher quality habitat for all three species occurring on the project site, the development footprint was re-designed.

- Areas of moderate (2.18 acres) and high quality (1.65 acres) southern rubber boa habitat will be completely avoided, limiting impacts to low quality habitat that is presumed not to be occupied.
- Similarly, 5.45 acres of moderate quality San Bernardino flying squirrel and 5.85 acres of California spotted owl will be completely avoided, limiting impacts to low quality habitat that is presumed not to be occupied. No high-quality habitat was identified on the project site for either species.
- The 13.40 acres of onsite areas of southern rubber boa habitat, San Bernardino flying squirrel habitat and California spotted owl habitat that are avoided (61% of all available habitat identified as suitable for these three species) will be permanently preserved and managed in perpetuity as onsite conservation.

The following minimization measures will be implemented prior to implementing any ground disturbing activities:

- Clearance surveys for southern rubber boa, San Bernardino flying squirrel and California spotted owl by an approved biologist prior to any ground disturbing activities. CDFW will be notified immediately if one or more of these three species are found onsite during the clearance surveys.
- The approved biologist will be onsite during all vegetation clearing and rough grading.
- The preserved habitats will be contiguous, where possible, with other areas of offsite suitable habitats with the potential to support these three special-status wildlife species.

Unavoidable impacts to special-status wildlife species will be compensated through the implementation of the following mitigation measure:

Mitigation Measure 1. These three habitat types largely overlap with each other. The following mitigation is proposed to address all three species (southern rubber boa, San Bernardino flying squirrel and California spotted owl). While none of these species have been observed onsite since 2007, there is a moderate or lower potential for them to occur. Southern rubber boa, although unlikely, could occur in the 8.64 acres of low quality habitat that will be loss through site develop. These same 8.64 acres were considered to provide 4.61 acres of moderate-quality habitat and 2.56 acres of low-quality for both San Bernardino flying squirrel and California spotted owl. As compensation for the loss of 8.64 acres of low-quality southern rubber boa habitat which was also determined to provide 2.56 acres of low-quality San Bernardino flying squirrel and California spotted owl habitat and 4.61 acres of moderate-quality San Bernardino flying squirrel and California spotted owl habitat, the project will permanently preserve and manage in perpetuity 13.40 acres of onsite habitat, approximately 61% of the available. These 13.40 acres supports a total of 1.65 available onsite acres of high-quality southern rubber boa habitat, 2.18 acres of moderate quality southern rubber boa habitat and 9.57 acres of low quality southern rubber boa habitat, 5.45 acres of moderate quality San Bernardino flying squirrel habitat and 7.95 acres of low-quality San Bernardino flying squirrel habitat; and 5.85 acres of moderate-quality California spotted owl habitat and 7.55 acres of low-quality California spotted owl habitat. The onsite habitat will be permanently protected through the recordation of a CDFW approved conservation easement, the selection of a CDFW approved conservation

management entity and by funding a non-wasting endowment set up to cover the costs of all upfront improvements and management actions as defined in a Long-term Management Plan. The long-term management plan will be submitted to CDFW for review and approval.

5.3 RIPARIAN HABITAT AND WETLANDS

A single drainage feature was observed within the southwest portion of the project site during the field surveys. This drainage feature is tributary to Little Bear Creek and ultimately Lake Arrowhead (Traditional Navigable Water). Therefore, this drainage feature possesses a surface hydrologic connection to downstream "waters of the United States" and fall under the regulatory authority of the Corps, Regional Board, and CDFW. There are no wetland features on the project site. Based on a review of the conceptual site plan, approximately 0.05 acre (852 linear feet) of Corps/Regional Board jurisdiction (non-wetland waters) and approximately 0.10 acre (852 linear feet) of CDFW jurisdiction (streambed/riparian) will be permanently impacted by development.

5.3.1 Riparian Habitat and Mitigation

As noted, impacts to the 0.05 acre of Corps/Regional Board jurisdictional non-wetland waters and 0.10 acre of CDFW jurisdiction streambed are expected to occur with the proposed project footprint during the construction of the Rimforest Flood Control Project by the County. Given this scenario, the County will have applied for the necessary permits that would include the above listed 0.05 acre of Corps/Regional Board jurisdictional non-wetland waters and 0.10 acre of CDFW jurisdiction streambed as part of their permit requirements. The County would have provided the necessary compensation to offset the loss of these jurisdictional waters. However, if the Rimforest Flood Control Project does not proceed the Church of the Woods project, the following mitigation measure will be implemented.

Mitigation Measure 2. Impacts to the on-site drainage feature will require the following regulatory approvals prior to project implementation: CWA Section 404 Nationwide Permit No. 39: *Commercial and Institutional Developments*, CWA Section 401 Water Quality Certification, and CDFW Section 1602 Lake or Streambed Alteration Agreement.

5.4 WILDLIFE CORRIDORS

The project site is located just east of the "Strawberry Creek" corridor designated by the San Bernardino County General Plan Open Space Element. This wildlife movement corridor in combination with the "Grass Valley" corridor provides movement opportunities from the in City of San Bernardino north through the San Bernardino National Forest o the Mojave River. The corridor, although physically represented on maps as a defined corridor, encompasses the broad expanse of open mountain habitats, including riparian zones and open forest habitats, which is abundant in this area. Further, it is acknowledged that this corridor is constrained in areas by private ownership. Wildlife movement through privately owned areas, including the project site, will be impeded by project-related disturbance. However, the northern and western portions of the project site will remain undisturbed and will continue to provide movement opportunities for wildlife.

As a result, the project site and the surrounding open space will continue to provide opportunities for local wildlife movement and will continue to function as a corridor for highly mobile wildlife species.

5.4.1 Wildlife Corridor Mitigation

Since conditions on the site with development will allow wildlife movement across the site and within adjoining large blocks of habitat, wildlife movement will not be significantly effected by the project, and no mitigation is warranted.

5.5 LOCAL POLICIES AND ORDINANCES

The Community of Rimforest does not have a tree preservation policy or ordinance. Therefore, impacts to local policies and ordinances are not expected to occur and mitigation is not required.

5.6 LOCAL, REGIONAL, AND STATE HABITAT CONSERVATION PLANS

The project site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. Therefore, impacts to any local, regional, or state habitat conservation plans are not expected to occur, and mitigation is not required.

5.6.1 Habitat Conservation Planning Mitigation

No habitat conservation plans have been approved or none are currently in process for lands within the San Bernardino Mountains and, therefore, development of the project site would not conflict with an existing plan. No mitigation is required.

Section 6 Conclusion and Recommendations

The project site consists of a vacant, undeveloped parcel with naturally occurring habitats throughout. Two plant communities were observed on-site: mixed conifer forest and riparian scrub.

A single drainage feature was observed within the southwest portion of the project site during the field surveys. This drainage feature is tributary to Little Bear Creek and ultimately Lake Arrowhead (Traditional Navigable Water). Therefore, this drainage feature possesses a surface hydrologic connection to downstream "waters of the United States" and fall under the regulatory authority of the Corps, Regional Board, and CDFW. Based on a review of the conceptual site plan, approximately 0.05 acres (882 linear feet) of Corps/Regional Board jurisdiction (non-wetland waters) and approximately 0.10 acres (882 linear feet) of CDFW jurisdiction (streambed/riparian) will be permanently impacted by development. Impacts to the on-site drainage feature, if required as part of this project, would require the following regulatory approvals prior to project implementation: CWA Section 404 Nationwide Permit No. 39: *Commercial and Institutional Developments*, CWA Section 401 Water Quality Certification, and Section 1602 Lake or Streambed Alteration Agreement. However, San Bernardino County Flood Control's is currently processing the Rimforest Flood Control Project which incorporates the onsite drainage. It is anticipated that the one of the County's conditions of approval will be the acquisition of the regulatory permits, as described above, which will include the Church of the Woods onsite drainage and will be the County's responsibility.

No special-status plant species were observed on-site during an initial survey. A subsequent sensittive plant survey during the 2018 blooming season determine that the site does not supprt any special status plant species, in particular Palmer's mariposa-lily, lemon lily, and Parish's yampah which had been determined to have a low potential to occur on the project site. The 2018 sensitive plant survey followed the methodology described in CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Communities* (2009), CNPS's *Botanical Survey Guidelines* (2001), and USFWS's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996).

No special-status wildlife species observed during the field survey. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a moderate potential to support San Bernardino flying squirrel, southern rubber boa, and California spotted owl. All remaining special-status wildlife species identified in the CNDDB are presumed to be absent from the project site based on habitat requirements, availability/quality of habitat needed by each species, and known distributions.

Southern rubber boa is not likely present within the proposed project footprint based on the results of the updated habitat suitability. Development of the project site will result in approximately 8.64 acres of impacts to low quality southern rubber boa habitat. Compensation for the loss of 8.64 acres of low-quality habitat will be mitigated onsite by setting aside in perpetuity and permanently managing the 3.83 acres of

moderate and high quality southern rubber boa habitat, as well as 9.57 acres of low-quality southern rubber boa habitat, a total of 13.40 acres.

San Bernardino flying squirrel has a moderate potential to occur in the eastern portion of the project site, based on the results of the habitat suitability assessment. Development of the project site will result in 7.17 acres of impacts to moderate (4.61 acres) and low-quality (2.56 acres) San Bernardino flying squirrel habitat. Compensation for the loss of moderate and low-quality San Bernardino flying squirrel habitat will be accomplished onsite by setting aside in perpetuity and permanently managing 13.40 acres of moderate (5.45 areas) and low-quality (7.95 acres) San Bernardino flying squirrel habitat.

California spotted owl has a moderate potential to occur in the eastern portion of the project site, based on the results of the habitat suitability assessment and known occurrences within the vicinity of the project site. Development of the project site will result in approximately 7.17 acres of impacts to moderate (4.61 acres) and low-quality (2.56 acres) California spotted owl habitat. Compensation for the loss of moderate and low quality California spotted owl habitat will be accomplished by setting aside in perpetuity and permanently managing 13.40 acres of moderate (5.85 areas) and low-quality (7.55 acres) California spotted owl habitat.

Nesting birds are protected pursuant to the MBTA and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For listed and raptor species, this buffer should be expanded to 500 feet. A biological monitor should be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Section 7 References

Aspen Environmental Group. 2015. *Preliminary Jurisdictional Waters/Wetlands Delineation Report for the Rimforest Storm Drain Project.* July 2015.

BioResource Consultants. 2005. *California Spotted Owl Surveys on APN 336-101-006, San Bernardino County, California*. July 22, 2005.

California Department of Fish and Wildlife. 2017. RareFind 5, California Natural Diversity Data Base, California. Data Base report on threatened, endangered, rare or otherwise sensitive species and communities for the Harrison Mountain, Lake Arrowhead, San Bernardino North, and Silverwood Lake 7.5-minute USGS quadrangles.

California Native Plant Society (CNPS). 2017. Inventory of Rare and Endangered Plants of California. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California. Available at: http://www.cnps.org/inventory.

Hatcher, J. and James Bridges. 2003. *Foresters Report for Church of the Woods Lake Arrowhead Christian School*. March 2003.

Hickman, J.C., ed. 2012. *The Jepson Manual: Higher Plants of California*. University of California Press.

Holland, R. F. 1986. Preliminary descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA.

Intellicast. 2017. Historical Weather Averages for Lake Arrowhead, California. Available online at http://www.intellicast.com/Local/History.aspx?location=USCA0578.

Munz, P.A. 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.

PCR Services Corporation (PCR). *Results of a Habitat Re-Assessment for the Southern Rubber Boa (Charina bottae umbratical) on the Church of the Woods Project Site, City of Rimforest, San Bernardino County, California*. August 20, 2007

PCR. 2007. *Results of a Trapping Program for the San Bernardino Flying Squirrel (Glaucomys saubrinus californicus) on the Church of the Woods Project Site, City of Rimforest, San Bernardino County, California*. July 27, 2007.

Reid, F.A. 2006. *A Field Guide to Mammals of North America, Fourth Edition*. Houghton Mifflin Company, New York, New York.

Sibley, D.A. 2014. *The Sibley Guide to Birds, Second Edition*. Alfred A. Knopf, Inc., New York, New York.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians, Third Edition*. Houghton Mifflin Company, New York, New York.

Tanner Environmental Services. 2007. *Results of Presence-Absence and Reproductive Surveys for California Spotted Owl*. July 9, 2007.

Thomas Leslie Corporation (TLC). 2001. *Completion of White-eared Pocket Mouse Trapping Survey*. December 27, 2001.

TLC. 2001. *Results of a Biological Constraints Analysis of APN 336-101-006 and APN 336-101-007*. September 19, 2001.

TLC. 2001. *Results of an Andrew's Marble Butterfly Habitat Assessment*. December 26, 2001.

TLC. 2001. *Results of California Spotted Owl Protocol Surveys*. November 23, 2001.

TLC. 2002. *Results of Focused Southern Rubber Boa Surveys*. June 10, 2002.

TLC. 2002. *Results of a Mountain Yellow-legged Frog Habitat Assessment*. January 10, 2002.

TLC. 2003. *2003 Results of an Andrew's Marble Butterfly Habitat Assessment*. October 7, 2003.

TLC. 2003. *Completion of a 2003 White-eared Pocket Mouse Trapping Survey*. October 2, 2003.

TLC. 2003. *Results of 2003 California Spotted Owl Protocol Surveys*. October 7, 2003.

TLC. 2003. *Results of a 2003 Mountain Yellow-legged Frog Habitat Assessment*. October 7, 2003.

TLC. 2003. *Results of Focused 2003 Botanical Surveys performed on Tentative Parcel Map No. 16155*. October 7, 2003.

TLC. 2005. *Results of a Wetland/Jurisdictional Delineation Study for Tentative Parcel Map No. 16155 (TPM 16155), a 38-Acre San Bernardino County Property*. August 15, 2005.

U.S. Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey*. Available online at http://websoilsurvey.nrcs.usda.gov/app/.

Appendix A Site Photographs

Photograph 1: Standing within the western portion of the project site looking west. The southern portion of the main drainage can be seen in the foreground.

Photograph 2: Photo of the riparian scrub vegetation located within the main drainage feature on-site.

Photograph 3: Standing within the southern portion of the project site looking southeast. Westside Ponderosa Pine Forest dominates the project site.

Photograph 4: Looking north across the central portion of the project site.

Photograph 5: Standing within the northern portion of the project site looking west. The topography within this area is steep.

Photograph 6: Standing within the northeast corner of the project site looking north. Daley Canyon Road bisects the project site within this area.

Photograph 7: Standing within the western portion of the project site looking east. The topography within this area is steep.

Photograph 8: Looking east across the southeastern portion of the project site. State Route 18 can be seen in the distance.

Photograph 9: Looking east at State Route 18 which abuts the southern boundary of the project site.

Photograph 10: Looking west at State Route 18 which abuts the southern boundary of the project site.

Appendix B Flora and Fauna Compendium

Table B – 1: Plant Species

Scientific Name	**Common Name**
Abies concolor	white fir
Achillea millefolium	common yarrow
*Ambrosia artemisiifolia**	common ragweed
Arctostaphylos sp.	manzanita
Artemisia douglasiana	California mugwort
Artemisia dracunculus	tarragon
Bloomeria crocea	common goldenstar
Bromus carinatus	California brome grass
Bromus ciliatus	fringed bromegrass
*Bromus diandrus**	ripgut brome
Bromus madritensis ssp. *rubens**	foxtail chess
*Bromus tectorum**	cheatgrass
Calocedrus decurrens	incense cedar
Calystegia occidentalis ssp. *fulcrata*	Sonora morning glory
Carex sp.	sedge
Castilleja applegatei	pine Indian paintbrush
Ceanothus cordulatus	mountain whitethorn
Ceanothus integerrimus	deerbrush
Circaea alpina ssp. *pacifica*	Pacific enchanter's nightshade
Clarkia rhomboidea	diamond clarkia
Claytonia parviflora	miner's lettuce
Convolvulus arvensis	field bindweed
Cornus nuttallii	mountain dogwood
Croton setiger	Turkey-mullein
Deinandra paniculate	paniculate tarplant
Dichelostemma capitatum	blue dicks
Drymocallis glandulosa	sticky cinquefoil
*Elymus hispidus**	wheatgrass
Epilobium brachycarpum	autumn willowweed
Epilobium canum	California fuchsia
Erigeron divergens	diffuse daisy
Eriogonum fascicultum	California buckwheat
Eriogonum saxatile	hoary buckwheat
Eriophyllum lanatum	common woolly sunflower
Erysimum capitatum	western wallflower
*Fallopia convolvulus**	black bindweed
*Festuca myuros**	rattail sixweeks grass
Fragaria vesca	California strawberry

Scientific Name	**Common Name**
Frangula californica	California coffeeberry
Galium aparine	cleavers
Hieracium albiflorum	white hawkweed
*Hirschfeldia incana**	short-podded mustard
*Hordeum murinum**	foxtail barley
Hosackia crassifolia	broad leaved lotus
Iris hartwegii ssp. *australis*	rainbow iris
*Lactuca serriola**	prickly lettuce
Lepidium sp.	peppergrass
*Lunaria annua**	annual moonwort
Lupinus microcarpus	chick lupine
Lupinus latifolius	broad leaf lupine
Lupinus luteolus	butter lupine
Madia elegans	common madia
Malacothrix saxatilis	cliff aster
Nemophila menziesii	baby blue eyes
Osmorhiza berteroi	sweetcicely
Penstemon centranthifolius	scarlet bugler
Penstemon spectabilis	showy penstemon
Phacelia sp.	phacelia
Phalaris minor	little seed canarygrass
Phoradendron leucarpum	big leaf mistletoe
Pinus coulteri	big cone pine
Pinus jeffreyi	Jeffrey pine
Pinus lambertiana	sugar pine
Pinus ponderosa	ponderosa pine
Piperia cooperi	Cooper's rein orchid
Polemonium occidentale	western polemonium
Pseudognaphalium beneolens	cudweed
Pteridium aquilinum var. *pubescens*	western bracken fern
Pterospora andromedea	pine drops
Quercus chrysolepis	canyon live oak
Quercus kelloggii	California black oak
Ribes cereum	wax currant
Ribes nevadense	mountain pink currant
Rubus parviflorus	western thimbleberry
Salix lasiolepis	arroyo willow
Sambucus nigra ssp. *caerulea*	blue elderberry
Sanicula graveolens	northern sanicle

Scientific Name	**Common Name**
Sarcodes sanguinea	snowplant
Silene lemmonii	Lemmon's catchfly
*Sisymbrium altissimum**	tumble mustard
Solidago velutina ssp. *californica*	California goldenrod
*Tanacetum parthenium**	Feverfew
*Taraxacum officinale**	common dandelion
Umbellularia californica	California bay
Urtica dioica	stinging nettle
Urtica urens	dwarf nettle
Vicia americana	American vetch
*Vinca major**	greater periwinkle

Table B – 2: Wildlife Species

Scientific Name	**Common Name**
Aves	**Birds**
Aphelocoma californica	California scrub jay
Certhia americana	brown creeper
Colaptes auratus	northern flicker
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Cyanocitta stelleri	Steller's jay
Haemorhous mexicanus	house finch
Junco hyemalis	dark-eyed junco
Melanerpes formicivorus	acorn woodpecker
Patagioenas fasciata	band-tailed pigeon
Pheucticus melanocephalus	black-headed grosbeak
Pipilo maculatus	spotted towhee
Poecile gambeli	mountain chickadee
Setophaga coronata	yellow-rumped warbler
Sialia mexicana	western bluebird
Sitta carolinensis	white-breasted nuthatch
Turdus migratorius	American robin
Zenaida macroura	mourning dove
Mammalia	**Mammals**
Mephitis mephitis	striped skunk
Odocoileus hemionus	mule deer
Peromyscus maniculatus	deer mouse
Procyon lotor	raccoon

Scientific Name	**Common Name**
Sciurus griseus	western gray squirrel
Thomomys umbrinus	southern pocket gopher
Reptilia	**Reptiles**
Elgaria multicarinata	alligator lizard
Plestiodon skiltonianus skiltonianus	Skilton's skink
Sceloporus graciosus vandenburgianus	southern sagebrush lizard
Uta stansburiana elegans	western side-blotched lizard

*Non-native/invasive

Appendix C Potentially Occurring Special-Status Biological Resources

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	Fed: None CA: WL	Generally, found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Presumed Absent:** The project site is out of the elevation range for this species.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Anaxyrus californicus arroyo toad	Fed: END CA: SSC	Occurs in semi-arid regions near washes or intermittent streams, including valley-foothill grasslands, desert riparian, desert washes, and oak woodlands. Breeding habitat consists of shallow streams with a mixture of sandy and gravelly substrate and sandy terraces. Generally requires mulefat (*Baccharis salicifolia*) and willow (Salix sp.) in the streambed for vegetative canopy for breeding areas and forages for insects primarily under oak (*Quercus* sp.), cottonwood (*Populus fremontii*), and sycamore (*Platanus racemosa*) trees. Occurs at elevations from near sea level to about 4,600 feet above msl.	No	**Presumed Absent:** The project site is out of the elevation range for this species.
Anniella stebbinsi southern California legless lizard	Fed: None CA: SSC	Locally abundant specimens are found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. A large protected population persists in the remnant of the once extensive El Segundo Dunes at Los Angeles International Airport.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Aquila chrysaetos golden eagle	Fed: None CA: FP;WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Arizona elegans occidentalis California glossy snake	Fed: None CA: SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral habitats.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Asio otus long-eared owl	Fed: None CA: SSC	Nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. Key habitat components are some dense cover for nesting and roosting, suitable nest platforms, and open foraging areas.	No	**Low:** The project site provides suitable nesting and cover habitat for this species; however, it lacks the open foraging areas.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Aspidoscelis hyperythra orange-throated whiptail	Fed: None CA: WL	Inhabits low-elevations coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats. Semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, and coastal chaparral.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Aspidoscelis tigris stejnegeri coastal whiptail	Fed: None CA: SSC	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Athene cunicularia burrowing owl	Fed: None CA: SSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Buteo regalis ferruginous hawk	Fed: None CA: WL	Required large, open tracts of grasslands, sparse shrub, or desert habitats with elevated structures for nesting. Roosts in open areas, usually in a lone tree or utility pole. Tolerant of heat; nest often unshaded.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Catostomus santaanae Santa Ana sucker	Fed: THR CA: None	Occur in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Steams that Santa Ana Sucker inhabit are generally perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: None CA: SSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 4,596 feet above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Charina umbratica southern rubber boa	Fed: None CA: THR	Found in a variety of montane forest habitats, particularly in the vicinity of streams or wet meadows. Requires loose, moist soil for burrowing and seeks cover in rotting logs. Restricted to the San Bernardino and San Jacinto Mountains.	No	**High:** Suitable habitat is present within the northeast end of the project site and slopes to the west in association with rock outcrops, rotten logs, leaf litter, and the mesic habitat on the forested slopes and drainage.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Fed: THR CA: END	In California, the breeding distrution is now thought to be restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Obligate riparian species with a primary habitat association of willow-cottonwood riparian forest.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Contopus cooperi olive-sided flycatcher	Fed: None CA: SSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 9,000 feet throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins. Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine.	No	**High:** The project site provides suitable nesting habitat for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Crotalus ruber red-diamond rattlesnake	Fed: None CA: SSC	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: END CA: SSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Empidonax traillii willow flycatcher	Fed: None CA: END	A rare to locally uncommon, summer resident in wet meadow and montane riparian habitats (2,000 to 8,000 feet) in the Sierra Nevada and Cascade Range. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Empidonax traillii extimus southwestern willow flycatcher	Fed: END CA: END	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Emys marmorata western pond turtle	Fed: None CA: SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet.	No	**Presumed Absent:** No suitable habitat is present within the project site. The main drainage feature on-site is too shallow for this species.
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Generally found in shortgrass prairies, grasslands, disturbed fields, or similar habitat types. Flocks in groups.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Eumops perotis californicus western mastiff bat	Fed: None CA: SSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Euphydryas editha quino quino checkerspot butterfly	Fed: END CA: None	Can be found in meadows and upland sage scrub/chaparral habitat. The larvae may either feed on dwarf plantain (*Plantago erecta*) or exserted Indian paintbrush (*Castilleja exserta* spp. *exerta*).	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Falco columbarius merlin	Fed: None CA: WL	Nest in forested openings, edges, and along rivers across northern North America. Found in open forests, grasslands, and especially coastal areas with flocks of small songbirds or shorebirds. Occurs at elevations below 3,900 feet above msl.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Gila orcuttii arroyo chub	Fed: None CA: SSC	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 40 cm.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Glaucomys sabrinus californicus San Bernardino flying squirrel	Fed: None CA: SSC	Occurs in white fir (*Abies concolor*) and Jeffrey pine (*Pinus jeffreyi*) mixed conifer forests with black oak (*Quercus kelloggii*) components at higher elevations. Use cavities in large trees, snags, and logs for cover. Habitats are typically mature, dense conifer forest in close proximity to riparian areas.	No	**High:** Suitable habitat can be found throughout the project site. Additionally, this species was observed on-site during trapping surveys in 2003.
Gymnogyps californianus California condor	Fed: END CA: END/FP	Permanent resident of the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara Co. south to Los Angeles Co., the Transverse Ranges, Tehachapi Mts., and southern Sierra Nevada. Forages over wide areas of open rangelands, roots on cliffs and in large trees and snags.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Haliaeetus leucocephalus bald eagle	Fed: Delisted CA: END/FP	Found along the ocean shore, lake margins, and on rivers, where it both nests and winters, typically within one mile of water. Nests in large, old-growth, or dominant live trees with open branches, favoring ponderosa pines. Roosts communally in winter.	No	**High:** Suitable nesting habitat can be found throughout the project site. Additionally, this species has been observed nesting and foraging within the vicinity of Lake Arrowhead.
Icteria virens yellow-breasted chat	Fed: None CA: SSC	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America. Found at elevations ranging from 820 to 2,625 feet above msl.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Lampropeltis zonata (parvirubra) California mountain kingsnake (San Bernardino population)	Fed: None CA: WL	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, Manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	No	**Low:** The project site provides suitable habitat for this species.
Lanius ludovicianus loggerhead shrike	Fed: None CA: SSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Lasiurus xanthinus western yellow bat	Fed: None CA: SSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: None CA: SSC	Occurs in diverse habitats, but primarily is found in arid regions supporting shortgrass habitats. Openness of open scrub habitat is preferred over dense chaparral.	No	**Presumed Absent:** No suitable habitat is present within the project site
Neotoma lepida intermedia San Diego desert woodrat	Fed: None CA: SSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: None CA: SSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Pandion haliaetus osprey	Fed: None CA: WL	Associated strictly with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitats. Uses large trees, snags, and dead-topped trees in open forest habitats for cover and nesting. Requires open, clear waters for foraging and uses rivers, lakes, reservoirs, bays, estuaries, and surf zones.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Perognathus alticolus alticolus white-eared pocket mouse	Fed: None CA: SSC	Inhabits ponderosa and Jeffrey pine forests, mixed chaparral, and sagebrush in the San Bernardino Mountains, constructing burrows in loose soil.	No	**Low:** The project site provides suitable habitat for this species; however, it has not been documented in the vicinity of the project site since 1938. Additionally, this species was not found during previous trapping surveys (2001 and 2003)
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: None CA: SSC	Occurs in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, but instead will seek refuge under weeds and dead leaves instead.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: SSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Piranga rubra summer tanager	Fed: None CA: SSC	Breeds primarily in mature riparian woodland with an extensive canopy of Fremont cottonwood (*Populus fremontii*).	No	**Presumed Absent:** No suitable habitat is present within the project site.
Polioptila californica californica coastal California gnatcatcher	Fed: THR CA: SSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It prefers habitat with more low-growing vegetation.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Progne subis purple martin	Fed: None CA: SSC	Summer resident in a variety of wooded, low-elevation habitats throughout the state. Uses valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, and riparian habitats. Also occurs in coniferous habitats, including closed-cone pine-cypress, ponderosa pine, Douglas-fir, and redwood. Requires areas with a concentration of nesting cavities.	No	**Moderate:** The project site provides suitable nesting habitat for this species.
Rana draytonii California red-legged frog	Fed: THR CA: SSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Rana muscosa southern mountain yellow-legged frog	Fed: END CA: END/WL	Occurs in lower elevation habitats characterized by rocky streambeds and wet meadows, while higher elevation habitats include lakes, ponds, and streams. Occupy well lit, streams in narrow, rock-walled canyons. Often found along rock walls or vegetated banks and always within a few feet of the water.	No	**Presumed Absent:** No suitable habitat is present within the project site due to the closed forest canopy and lack of rocky stream courses with open margins within the project site. Additionally, this species was not observed during previous field surveys (2001 and 2003).
***Rhinichthys osculus* ssp. 3** Santa Ana speckled dace	Fed: None CA: SSC	Requires permanent flowing streams within summer water temperatures of 17 – 20 degrees Celsius. Inhabits shallow cobble and gravel riffles and small streams that flow through steep, rocky canyons with chaparral covered walls.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Salvadora hexalepis virgultea coast patch-nosed snake	Fed: None CA: SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. Requires friable soils for burrowing.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Setophaga petechia yellow warbler	Fed: None CA: SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Siphateles bicolor mohavensis Mohave tui chub	Fed: END CA: FP	Endemic to the Mojave River Basin and adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas and needs vegetation for spawning	No	**Presumed Absent:** No suitable habitat is present within the project site.
Spea hammondii western spadefoot	Fed: None CA: SSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Strix occidentalis occidentalis California spotted owl	Fed: None CA: SSC	Primarily associated with oak and oak-conifer habitats and uses dense, multi-layered canopy cover for roost seclusion. Requires mature forest with permanent water and suitable nesting trees and snags.	No	**High:** Suitable habitat can be found throughout the project site. Additionally, this species was observed foraging on-site during surveys in 2007. However, there are no known historic roost or nest sites within the project site.
Taricha torosa Coast Range newt	Fed: None CA: SSC	Found in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, drier chaparral, oak woodland, and grasslands are used.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Taxidea taxus American badger	Fed: None CA: SSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Thamnophis hammondii two-striped gartersnake	Fed: None CA: SSC	Utilizes a variety of habitats including forests, mixed woodlands, grassland, chaparral, and farmlands. Often found near ponds, marshes, or streams.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Vireo bellii pusillus least Bell's vireo	Fed: END CA: END	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	**Presumed Absent:** No suitable habitat is present within the project site. The site does not contain the large sections of riparian forest that this species prefers.
SPECIAL-STATUS PLANT SPECIES				
Acanthoscyphus parishii* var. *parishii Parish's oxytheca	Fed: None CA: None CNPS: 4.2	Habitats include sandy or shale chaparral. Found at elevations ranging from 3,750 to 6,748 feet above mean sea level (msl). Blooming period is from June to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Allium howellii* var. *clokeyi Mt. Pinos onion	Fed: None CA: None CNPS: 1B.3	Grows in Great Basin scrub, meadows and seeps (edges), and pinyon and juniper woodland habitats. Found at elevations ranging from 4,265 to 6,070 feet above msl. Blooming period is from April to June.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Allium parishii Parish's onion	Fed: None CA: None CNPS: 4.3	Found in rocky soils within Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats. Found at elevations ranging from 2,953 to 5,692 feet above msl. Blooming period is from April to May.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Androsace elongata* ssp. *acuta California androsace	Fed: None CA: None CNPS: 4.2	Habitats include chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland. Found at elevations ranging from 492 to 4,281 feet above msl. Blooming period is from March to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Arenaria paludicola marsh sandwort	Fed: END CA: END CNPS: 1B.1	Grows mainly in wetlands and freshwater marshes in arid climates. The plant can grow in saturated acidic bog soils and soils that are sandy with a high organic content. Found at elevations ranging from 33 to 558 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Azolla microphylla Mexican mosquito fern	Fed: None CA: None CNPS: 4.2	Found in marshes and swamps (ponds, slow water). Found at elevations ranging from 38 to 328 feet above msl. Blooming period is August.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Berberis nevinii Nevin's barberry	Fed: END CA: END CNPS: 1B.1	Occurs on steep, north-facing slopes or in low-grade sandy washes in chaparral, cismontane woodland, coastal scrub, and riparian scrub. Found at elevations ranging from 951 to 5,167 feet above msl. Blooming period is from March to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Brodiaea filifolia thread-leaved brodiaea	Fed: THR CA: END CNPS: 1B.1	Often found in clay soils within openings of chaparral, cismontane woodland, coastal scrub, playas, vernal pools, valley and foothill grassland habitats. Found at elevations ranging from 82 to 3,675 feet above msl. Blooming period ranges from March to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Calochortus catalinae Catalina mariposa-lily	Fed: None CA: None CNPS: 4.2	Grows in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Found at elevations ranging from 49 to 2,297 feet above msl. Blooming period is from February to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Calochortus palmeri* var. *palmeri Palmer's mariposa-lily	Fed: None CA: None CNPS: 1B.2	Grows in mesic soils within chaparral, lower montane coniferous forest, and meadows and seeps. Found at elevations ranging from 2,329 to 7,841 feet above msl. Blooming period is from April to July.	No	**Low:** Some suitable habitat is present within the project site.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. Found at elevations ranging from 459 to 6,299 feet above msl. Blooming period is from May to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Canbya candida white pygmy-poppy	Fed: None CA: None CNPS: 4.2	Grows in gravelly, sandy, and granitic soils within Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats. Grows in elevation ranging from 1,969 to 4,790 feet above msl. Blooming period is from March to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	Fed: None CA: None CNPS: 1B.2	Occurs in mesic or drying sites along the edges of streams, meadows, and vernal pools. Found in meadows and seeps, pebble plains, upper montane coniferous forest, chaparral, and riparian woodland. Found at elevations ranging from 4,265 to 7,841 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Castilleja plagiotoma Mojave paintbrush	Fed: None CA: None CNPS: 4.3	Found in Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, and pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 8,202 feet above msl. Blooming period is from April to June.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Centromadia pungens* ssp. *laevis smooth tarplant	Fed: None CA: None CNPS: 1B.1	Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats. Grows in elevation ranging from 0 to 2,100 feet above msl. Blooming period ranges from April to September.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Chloropyron maritimum* ssp. *maritimum salt marsh bird's-beak	Fed: END CA: END CNPS: 1B.2	Upper terraces and higher edges of coastal salt marshes where tidal inundation is periodic. Found at elevations ranging from 0 to 99 feet above msl. Blooming period is from May to October.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Chorizanthe parryi* var. *parryi Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet above msl. Blooming period is from April to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Deinandra mohavensis Mojave tarplant	Fed: None CA: END CNPS: 1B.3	Occurs in mesic soils within chaparral, coastal scrub, and riparian scrub habitats. Found at elevations ranging from 2,789 to 5,249 feet above msl. Blooming period is June to October.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Dodecahema leptoceras slender-horned spineflower	Fed: END CA: END CNPS: 1B.1	Chaparral, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes. Found at elevations ranging from 1,181 to 2,690 feet above msl. Blooming period is from April to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Dudleya abramsii* ssp. *affinis San Bernardino Mountains dudleya	Fed: None CA: None CNPS: 1B.2	Found in pebble plain, upper montane coniferous forest, and pinyon-juniper woodland in granite or quartzite outcrops. It is rarely found on limestone. Found at elevations ranging from 4,101 to 8,530 feet above msl. Blooming period is from April to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Eremothera boothii* ssp. *boothii Booth's evening-primrose	Fed: None CA: None CNPS: 2B.3	Found in Joshua tree woodland and pinyon-juniper woodland habitats. Found at elevations ranging from 2,953 feet to 7,874 feet above msl. Blooming period is from April to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Eriastrum densifolium* ssp. *sanctorum Santa Ana River woollystar	Fed: END CA: END CNPS: 1B.1	Grows in coastal scrub and chaparral habitats within sandy soils on river floodplains or terraces fluvial deposits. Found at elevations ranging from 295 to 2,001 feet above msl. Blooming period is from April to September.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Eriophyllum lanatum* var. *obovatum southern Sierra woolly sunflower	Fed: None CA: None CNPS: 4.3	Prefers sandy loam soils within lower montane coniferous forest and upper montane coniferous forest habitats. Found at elevations ranging from 3,655 to 8,202 feet above msl. Blooming period is from June to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Fimbristylis thermalis hot springs fimbristylis	Fed: None CA: None CNPS: 2B.2	Habitat includes meadows and seeps (alkaline, near hot springs). Found at elevations ranging from 361 to 4,396 feet above msl. Blooming period is from July to September.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Frasera neglecta pine green-gentian	Fed: None CA: None CNPS: 4.3	Occurs in lower montane coniferous forest, pinyon and juniper woodland and upper montane coniferous forest habitats. Found at elevations ranging from 4,593 to 8,202 feet above msl. Blooming period is from May to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Fritillaria pinetorum pine fritillary	Fed: None CA: None CNPS: 4.3	Associated with granitic and metamorphic soils within chaparral, lower montane coniferous forest, upper montane coniferous forest, subalpine coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 5,692 to 10,826 feet above msl. Blooming period is from May to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Galium johnstonii Johnston's bedstraw	Fed: None CA: None CNPS: 4.3	Preferred habitats include chaparral, riparian woodland, lower montane coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 4,003 to 7,546 feet above msl. Blooming period is from June to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Heuchera caespitosa urn-flowered alumroot	Fed: None CA: None CNPS: 4.3	Grows in rocky soils within cismontane woodland, lower montane coniferous forest, riparian forest, and upper montane coniferous forest. Found at elevations ranging from 3,789 to 8,694 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Heuchera parishii Parish's alumroot	Fed: None CA: None CNPS: 1B.3	Found in lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest, and alpine boulder and rock fields in rocky places. It sometimes occurs on carbonate. Found at elevations ranging from 4,921 to 12,467 feet above msl. Blooming period is from June to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Hulsea vestita* ssp. *parryi Parry's hulsea	Fed: None CA: None CNPS: 4.3	Grows in granitic or carbonate, rocky openings within lower montane coniferous forest, pinyon and juniper woodland and upper montane coniferous forest habitats. Found at elevations ranging from 4,495 to 9,498 feet above msl. Blooming period is from April to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Imperata brevifolia California satintail	Fed: None CA: None CNPS: 2B.1	Occurs in mesic sites, alkali seeps, and riparian areas within coastal scrub, chaparral, riparian scrub, Mojavean scrub, and alkali meadows and seeps. Found at elevations ranging from 0 to 1,640 feet above msl. Blooming period is from September to May.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Ivesia argyrocoma* var. *argyrocoma silver-haired ivesia	Fed: None CA: None CNPS: 1B.2	Found in meadows, pebble plains, and upper montane coniferous forest, often with other rare plants. Found at elevations ranging from 4,790 to 9,711 feet above msl. Blooming period is from June to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Juglans californica southern California black walnut	Fed: None CA: None CNPS: 4.2	Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet above msl. Blooming period is from March to August.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Juncus duranii Duran's rush	Fed: None CA: None CNPS: 4.3	Habitats include lower and upper montane coniferous forests, meadows and seeps. Found at elevations ranging from 5,801 to 9,199 feet above msl. Blooming period is from July to August.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Lilium humboldtii* ssp. *ocellatum ocellated humboldt lily	Fed: None CA: None CNPS: 4.2	Found in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 98 to 5,906 feet above msl. Blooming period is from March to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Lilium parryi lemon lily	Fed: None CA: None CNPS: 1B.2	Occurs in lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest habitats. Generally occurs in wet, mountainous terrain; forested areas; on the shady edges of streams; or in open, boggy meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet above msl. Blooming period is from July to August.	No	**Low:** Some suitable habitat is present within the project site.
Lycium parishii Parish's desert-thorn	Fed: None CA: None CNPS: 2B.3	Habitats include coastal scrub and Sonoran Desert scrub. Found at elevations ranging from 443 to 3,281 feet above msl. Blooming period is from March to April.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Malacothamnus parishii Parish's bush-mallow	Fed: None CA: None CNPS: 1A	Occurs within chaparral and coastal scrub habitats. Found at elevations ranging from 1,001 to 1,493 feet above msl. Blooming period is from June to July.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Monardella macrantha* ssp. *hallii Hall's monardella	Fed: None CA: None CNPS: 1B.3	Occurs in broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland along dry slopes and ridges. Found at elevations ranging from 2,395 to 7,201 feet above msl. Blooming period is from June to October.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Muhlenbergia californica California muhly	Fed: None CA: None CNPS: 4.3	Found in chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. Only known to occur in the San Bernardino Mountains. Found at elevations ranging from 328 to 6,562 feet above msl. Blooming period is from June to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Opuntia basilaris* var. *brachyclada short-joint beavertail	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands. Found at elevations ranging from 1,394 to 5,906 feet above msl. Blooming period is from April to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Packera ionophylla Tehachapi ragwort	Fed: None CA: None CNPS: 4.3	Grows in lower montane coniferous forest and upper montane coniferous forest habitats. Found at elevations ranging from 4,921 to 8,858 feet above msl. Blooming period is from June to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Pediomelum castoreum Beaver Dam breadroot	Fed: None CA: None CNPS: 1B.2	Occurs in Joshua tree woodland and Mojavean desert scrub in sandy soils and in washes and roadcuts. Found at elevations ranging from 2,001 to 2,707 feet above msl. Blooming period is from April to May.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Perideridia parishii* ssp. *parishii Parish's yampah	Fed: None CA: None CNPS: 2B.2	Found in lower montane coniferous forest, meadows, and upper montane coniferous forest in damp meadows or along streambeds. It often grows in areas with an open pine canopy. Found at elevations ranging from 4,806 to 9,843 feet above msl. Blooming period is from June to August.	No	**Low:** Some suitable habitat is present within the project site.
Phacelia exilis Transverse Range phacelia	Fed: None CA: None CNPS: 4.3	Grows in sandy or gravelly soils within lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, and upper montane coniferous forest habitats. Found at elevations ranging from 3,609 to 8,858 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Phacelia mohavensis Mojave phacelia	Fed: None CA: None CNPS: 4.3	Occurs in sandy or gravelly soils within cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Found at elevations ranging from 4,593 to 8,202 feet above msl. Blooming period is from April to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Piperia leptopetala narrow-petaled rein orchid	Fed: None CA: None CNPS: 4.3	Found in cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest habitats. Found at elevations ranging from 1,247 and 7,300 feet above msl. Blooming period is from May to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Schoenus nigricans black bog-rush	Fed: None CA: None CNPS: 2B.2	Grows within marches and swamps (often alkaline). Found at elevations ranging from 492 to 6,562 feet above msl. Blooming period is from August to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Scutellaria bolanderi* ssp. *austromontana southern mountains skullcap	Fed: None CA: None CNPS: 1B.2	Occurs in mesic soils within chaparral, cismontane woodland, and lower montane coniferous forest habitats. Found at elevations ranging from 1,394 to 6,562 feet above msl. Blooming period is from June to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Sidalcea malviflora* ssp. *dolosa Bear Valley checkerbloom	Fed: None CA: None CNPS: 1B.2	Found in meadows and seeps, riparian woodland, lower montane coniferous forest, and upper montane coniferous forest in wet areas. It is highly affected by hydrological changes in its environment. Found at elevations ranging from 4,905 to 8,809 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Sidalcea neomexicana Salt Spring checkerbloom	Fed: None CA: None CNPS: 2B.2	Habitat includes chaparral, coastal scrub, lower montane coniferous forest, plays, and mojavean desert scrub. Found at elevations ranging from 49 to 5,020 feet above msl. Blooming period is from March to June.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Sidotheca caryophylloides chickweed oxytheca	Fed: None CA: None CNPS: 4.3	Grows in sandy soils within lower montane coniferous forest. Found at elevations ranging from 3,655 to 8,530 feet above msl. Blooming period is from July to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Streptanthus bernardinus Laguna Mountains jewelflower	Fed: None CA: None CNPS: 4.3	Grows in chaparral and lower montane coniferous forest on clay or decomposed granite soils. It is sometimes found in disturbed areas such as streamsides or roadcuts. Found at elevations ranging from 4,724 to 8,202 feet above msl. Blooming period is from May to August.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Streptanthus campestris southern jewelflower	Fed: None CA: None CNPS: 1B.3	Occurs in open, rocky areas in chaparral, lower montane coniferous forest, and pinyon-juniper woodland. Found at elevations ranging from 1,969 to 9,154 feet above msl. Blooming period is from May to July.	No	**Presumed Absent:** No suitable habitat is present within the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Symphyotrichum defoliatum San Bernardino aster	Fed: None CA: None CNPS: 1B.2	Grows in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). Can be found growing near ditches, streams, and springs within these habitats. Found at elevations ranging from 7 to 6,693 feet above msl. Blooming period is from July to November.	No	**Presumed Absent:** No suitable habitat is present within the project site.
Syntrichopappus lemmonii Lemmon's syntrichopappus	Fed: None CA: None CNPS: 4.3	Occurs in sandy or gravelly soils within chaparral, Joshua tree woodland, and Pinyon and juniper woodland habitats. Found at elevations ranging from 1,640 to 6,004 feet above msl. Blooming period is from April to May (June).	No	**Presumed Absent:** No suitable habitat is present within the project site.
Thelypteris puberula* var. *sonorensis Sonoran maiden fern	Fed: None CA: None CNPS: 2B.2	Found in meadows and seeps along streams and other seepage areas. Found at elevations ranging from 164 to 2,001 feet above msl. Blooming period is from January to September.	No	**Presumed Absent:** No suitable habitat is present within the project site and the project site is out of the elevation range for this species.
Trichostema micranthum small-flowered bluecurls	Fed: None CA: None CNPS: 4.3	Occurs in mesic soils within lower montane coniferous forest and meadows and seeps. Found at elevations ranging from 5,003 to 7,546 feet above msl. Blooming period is from June to September.	No	**Presumed Absent:** No suitable habitat is present within the project site.
SPECIAL-STATUS PLANT COMMUNITIES				
Mixed Montane Chaparral	CDFW Sensitive Habitat	Associated with mountainous terrain from mid to high elevation at 3000 to 10,000 feet above msl. In southern California, it occurs above 7000 feet above msl. Mixed montane chaparral is characterized by a mixture of evergreen species; however, deciduous or partially deciduous species may also be present. When mature, it is often impenetrable to large mammals. Species composition of mixed montane chaparral varies throughout California and is dependent on changes with elevation, geographical range, and soil type. Examples of species occurring within this plant community include mountain whitehorn (*Ceanothus cordulatus*), various species of manzanita (*Arctostaphylos* sp.) mountain mahogany (*Cercocarpus betuloides*), and toyon (*Heteromeles arbutifolia*).	No	**Absent**
Riversidian Alluvial Fan Sage Scrub	CDFW Sensitive Habitat	Occur within broad washes of sandy alluvial drainages that carry rainfall runoff sporadically in winter and spring, but remain relatively dry through the remainder of the year. Is restricted to drainages and floodplains with very sandy substrates that have a dearth of decomposed plant material. These areas do not develop into riparian woodland or scrub due to the limited water resources and scouring by occasional floods.	No	**Absent**
Semi Desert Chaparral	CDFW Sensitive Habitat	A combination of the desert shrubland habitat and chaparral habitat. Found on the eastern slopes of the San Bernardino and San Gabriel Mountains, in the Mojave Desert north and northeast of the Los Angeles basin and Inland Empire, and the northern Peninsular Ranges.	No	**Absent**
Southern Mixed Riparian Forest	CDFW Sensitive Habitat	Typically a younger successional stage of riparian forest, due to disturbance or more frequent flooding. Plant species include willow (*Salix* sp.) species, elderberry (*Sambucus* sp.), oak species, sycamore (*Platanus racemosa*), cottonwood (*Populus* sp.), and smaller shrubs.	No	**Absent**

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive Habitat	Occurs below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows are also often present. Poison oak, mugwort, elderberry and wild raspberry may be present in understory.	No	**Absent**
Southern Willow Scrub	CDFW Sensitive Habitat	Dense, broadleaved, winter-deciduous riparian thickets dominated by several willow species, with scattered emergent Fremont's cottonwood and California sycamore. Most stands are too dense to allow much understory development. Loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type required repeated flooding to prevent succession to Southern Cottonwood-Sycamore Riparian Forest.	No	**Absent**
Westside Ponderosa Pine Forest	CDFW Sensitive Habitat	The Westside Ponderosa Pine Forest is found on suitable mountain and foothill sites throughout California except in the immediate area of San Francisco Bay, in the north coast area, south of Kern County in the Sierra Nevada and east of the Sierra Nevada Crest. It consists of pure stands of ponderosa pine as well as stands of mixed species in which at least 50% of the canopy area is ponderosa pine. Associated species varies depending on location in the state and site conditions.	No	**Absent**

U.S. Fish and Wildlife Service (USFWS) - Federal
END - Federal Endangered
THR - Federal Threatened

California Department of Fish and Wildlife (CDFW) - California
END- California Endangered
THR - California Threatened
SSC - California Species of Concern
WL - Watch List
FP - California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1 - Seriously threatened in California
0.2 - Moderately threatened in California
0.3 - Not very threatened in California

Appendix D Southern Rubber Boa Habitat Suitability Assessment

LEATHERMAN BIOCONSULTING, INC.
Biological Surveys, Management & Monitoring

February 22, 2018

Dr. Thomas McGill
MICHAEL BAKER INTERNATIONAL
3536 Concours Street, Suite 100
Ontario, California 91746

Subject: Biological Assessment for Southern Rubber Boa at the Church of the Wood's Project Site, Rim Forest, San Bernardino County

Dear Dr. McGill:

This letter reports the results of a habitat assessment to evaluate the potential for occurrence and extent of suitable habitat for the southern rubber boa (*Charina bottae umbratica*) on the approximately 27-acre Church of the Woods project site east of Rim Forest off State Route (SR) 18 in the San Bernardino Mountains, San Bernardino County, California (Figure 1). Specifically, the site is located on the northwest corner of SR 18 and Daley Canyon Road, near the northwest corner the Harrison Mountain USGS 7.5 minute series quadrangle map, in section 29 of Township 2 North, Range 3 West (Figure 2). Elevation ranges from approximately 5,740 feet at the west boundary to 5,410 feet at the northeast end of the site.

The southern rubber boa is a state-listed Threatened species, is on the U.S. Forest Service sensitive species list, and is currently being reviewed to determine if it warrants listing under the federal Endangered Species Act. Mr. Brian Leatherman, who conducted the habitat assessment, holds a current Memorandum of Understanding with the California Department of Fish and Wildlife to conduct surveys for the southern rubber boa.

Southern Rubber Boa

The southern rubber boa is state-listed as a Threatened species under the California Endangered Species Act (CDFW 2017a). It is also considered a sensitive species by the U.S. Forest Service in the San Bernardino National Forest (Stephenson and Calcarone 1999), but currently has no status under the federal Endangered Species Act (USFWS 2015a). However, the U.S. Fish and Wildlife (2015b) published a 90-day finding on a petition to list the southern rubber boa as an Endangered or Threatened species and found that the petition presented substantial information indicating that the action may be warranted, thus initiating a 12-month review period. No final rule has been published as of the date of this report. Potential threats to the species include development (the majority of known locations are on private lands) (Stewart 1988, 1991), off-road activity,

commercial timber sales, personal fuelwood harvesting (Stewart et al. 2005), and habitat destruction by collectors (Steinhart 1990).

The southern rubber boa is semi-fossorial (living underground most of the time), nocturnal (active at night) or crepuscular (active early morning or late evening), and highly secretive, so individuals are rarely encountered and their seasonal activity and habitat use are difficult to determine. Rubber boas begin to emerge from hibernation in early April but most emerge in late April depending on climatic conditions (Hoyer and Stewart 2000a). Boas generally disappear during the summer months though may emerge after rains or periods of high humidity (Stewart et. al 2005). It is likely that some individuals remain in rock outcrops during the summer and retreat deeper into crevices (Stewart et al. 2005), but others apparently move into cooler, moister forest and riparian habitats (Loe 1985, Stewart 1988). Boas have been observed on the surface as late as October (Hoyer and Stewart 2000a).

Habitat for the rubber boa includes mixed conifer-oak forest and woodland habitats at higher elevations in the San Bernardino and San Jacinto Mountains, at elevations between approximately 5,000 to 8,000 feet (Stewart 1988, 1991). In the San Bernardino Mountains, most of the records occur in a roughly 10-mile stretch of habitat between Twin Peaks on the west and Green Valley on the east, including the Running Springs and Lake Arrowhead areas (Stewart 1988, 2005). Dominant trees in occupied areas include Jeffrey pine (*Pinus jeffreyi*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), and black oak (*Quercus kelloggii*)(Stewart 1988). However, snakes are regularly encountered in open areas that contain few conifers (Hoyer 2015a). In a multi-year study of the southern rubber boa in the San Bernardino Mountains, Hoyer and Stewart (2000a) found southern rubber boas in a variety of vegetation types and slope aspects, but all collection sites were on or around small to large rock outcrops, which are apparently important as hibernacula (Keasler 1982, Stewart 1988).

Stuart (1988) suggested that southern rubber boa populations appear to be isolated, with tracts of apparently suitable habitat unoccupied; however, with the exception two extended surveys, large areas of potential boa habitat have never been surveyed due to a lack of road access and seasonal constraints (Hoyer 2015a). In addition, based on the concept of habitat association, when two known localities are connected with suitable habitat, it is not unreasonable to assume that the species occurs between them. As such, the southern rubber boa may not be as rare as it is widely accepted to be. In fact, Hoyer (2015b) cites several studies that suggest the boa is likely the one of the most abundant snakes above 5,500 feet in the San Bernardino Mountains.

(Stewart 1988) suggests that rock outcrops on southern exposures tend to be favored in the spring and that as the weather becomes warmer and dryer the snakes may move into cooler and moister habitats such as riparian areas and forest, but acknowledges that there is practically no data on their seasonal movements. Hoyer and Stewart's (2000a) 5-year study produced evidence of high site fidelity by boas, with 19 of 21 recaptures being within 26 feet of their original capture location, and the two farthest recaptures being

approximately 231-247 feet from their original capture location. One southern rubber boa is reported as moving up to 300 yards in a single season (Loe 1985).

Methods

Prior to conducting the habitat assessment, a search was conducted of the relevant literature for known records of the southern rubber boa in the vicinity of the site. The literature search included a review of CDFW's California Natural Diversity Database (CDFG 2017b), the U.S. Forest Service's Southern California Mountains and Foothills Assessment (Stephenson and Calcerone 1999), the San Bernardino County Official Land Use Plan Biotic Resource Overlay map (San Bernardino County 2000), the Natural Resources Conservation Service's database, unpublished records, and reference books and research articles as appropriate.

The habitat assessment was conducted on January 25, 2018 by Mr. Brian Leatherman (Leatherman BioConsulting, Inc.), a wildlife biologist with over 25 years of experience throughout southern California, including specific experience conducting habitat assessments and focused surveys for the southern rubber boa in the San Bernardino Mountains. The survey consisted of walking widely meandering transects approximately 30 meters apart throughout the site in a north – south direction. The locations of surface rock and rock outcrops were recorded as waypoints using GPS technology and downloaded for transfer to Google Earth™ for mapping purposes. The extent and quality of rock outcrops and other suitable mircrohabitat features used as refugia, including downed logs and trees, were assessed and recorded. Weather during the survey was fair with partly cloudy skies that became dense fog by the end of the survey, a light-moderate breeze (4-7 mph), and cold temperatures (high 30's °F). During the assessment, several rotten logs and other surface objects were lifted and replaced opportunistically to evaluate potential use by southern rubber boa individuals.

Existing Conditions and Habitats

The Church of the Woods site is located on the crest of the San Bernardino Mountains at the east end of Rim Forest. Topography consists of moderate to steep slopes largely covered with mixed coniferous forest. A natural drainage running from the southwest to the northeast corner roughly bisects the site in half. Dense riparian scrub occurs along both banks of the creek along the lower half of its length. Surface water was present in the lower reaches but not at the upstream end. State Route 18 forms the southern boundary of the site and Daley Canyon Road forms the eastern boundary. A single family residential development occurs west of the site, and undeveloped open forest occurs to the north.

Soils appear to be moderately deep to deep, well-drained sandy loams and gravels from deposits and weathered (decomposed) granite. Rock outcrops are few but exposed rocks and surface boulders occur generally at the west and east sides of the site and sporadically along the drainage.

The site is currently undeveloped. Several dirt access roads and trails were observed on the site, and a sewer line traverses the site generally parallel to and upslope of the drainage. Surface disturbance from the construction of the underground sewer line is no longer visible. Discarded wood and other debris were observed along the western boundary of the site adjacent to the single family homes.

Vegetation communities on the site include willow riparian scrub and mixed conifer forest. Most of the habitat on the site consists of mixed conifer forest consisting of Jeffrey pine (*Pinus jeffreyi*), ponderosa pine (*Pinus ponderosa*), incense cedar (*Calocedrus decurrens*), California black oak (*Quercus kelloggii*), and white fir (*Abies concolor*). The canopy of the forest varied from relatively open in some areas (west of the drainage) and nearly closed in others (on the north-facing slope and hilltop east of the drainage). The understory was relatively open with little shrub cover, although some forest openings in the southeast quadrant of the site supported stands of sapling trees, including a stand of incense cedars in one area and yellow pines (*P. jeffreyi* or *P. ponderosa*) in another. Dried (possibly dead) bracken ferns (*Pteridium aquilinum*) formed a common ground cover in the relatively open forest in the area north of SR 18.

Riparian habitat along the drainage consisted of shrubby willows, which were sparse at the south end of the drainage but became increasingly dense in the downstream direction. The willows were dormant at the time of the survey, but have been identified as arroyo willows (*Salix lasiolepis*) in previous reports (Leslie 2002, PCR 2007). Likewise, mountain dogwood (*Cornus nuttallii*) dominates the shrub layer throughout the riparian habitat.

Results of Literature Search

San Bernardino County's Biotic Resource Overlay map identifies the distribution of southern rubber boa habitat in the San Bernardino Mountains (San Bernardino County 2000). The Church of the Woods site is mapped within the area delineated as Rubber Boa Habitat.

Seventeen records for the southern rubber boa were found in a search of the CNDDB (CDFW 2017b) for the Harrison Mountain quadrangle, on which the site occurs. The exact location of each occurrence is suppressed in the CNDDB for this species (to inhibit illegal collecting), so the proximity of these occurrences relative to the site is unknown. However, the site is near Twin Peaks, which is widely reported as an area occupied by the southern rubber boa in the San Bernardino Mountains (Stewart 1988, 2005).

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) recently compiled data for southern rubber boa habitat and sightings (Figure 3 depicts the NRCS data). That exhibit shows the site within a swath of occupied habitat, and one southern rubber boa sighting at the eastern boundary of the site. It also shows eight records within approximately one and a half miles, all but one being to the east. The occupied swath of habitat in Figure 3 likely depicts the same information from San Bernardino County's Biotic Resource Overlay map (San Bernardino County 2000), and

the reliable sightings likely represent the suppressed locality data in the CNDDB (described in the preceding two paragraphs).

Focused surveys were conducted on the Church of the Woods project site in 2002 but no southern rubber boas were detected (TLC 2002). Surveys at that time were conducted on six different days, and on one day (April 27, 2002) the surveys were conducted at two different times (in the morning and evening) and were counted as independent surveys. The report does not specify if it took all seven surveys to cover the entire site once, or if the entire site was covered during each survey.

In 2003, TLC (2003) prepared a one-page letter repeating that no southern rubber boas were observed during focused surveys in 2002, and reporting that no southern rubber boas were detected during sixteen surveys of the site in 2003. It was therefore the opinion of TLC that the southern rubber boas was absent from the site. However, the letter acknowledges that protocol surveys were not conducted because a Memorandum of Understanding was not issued to the surveyors by the California Dept. of Fish and Wildlife. In addition, no information on the survey methods, dates of the surveys, the hours spent on site, or the area covered was included in the letter. The adequacy of the surveys is therefore unknown.

Results of Habitat Assessment

Surface rocks and rock outcrops were observed primarily on the upper slopes on the west side of the site, and on the north-facings slope on the east half of the site (Figure 4). The quality of habitat provided by rocks and rock outcrops vary. Rock outcrops that consist of multiple layers of rock with fissures, crevices, and cracks that provide access to underground retreats and hidden refugia are of the highest quality. Piles of boulders and rocks with irregular edges and spaces under which boas can crawl provide moderate quality habitat, and exposed rock with no obvious access to underground retreats or room to crawl under provide limited habitat. The quality of the rocks and rock outcrops as habitat to the southern rubber boa is identified in Figure 4.

Habitat in the northeast corner of the site, including the hilltop and north-facing slope east of and along the drainage, consist of relatively dense mixed conifer forest with substantial surface debris composed primarily of rotten logs, bark, fallen trees, leaf litter, and woody debris. These habitat features, coupled with the scattered high and moderate quality rock outcrops in the area provide the highest quality habitat observed on the site. This area is adjacent to the location of the reliable sighting shown in Figure 3.

The slope west of the drainage immediately below the single family residential development consists of relatively open forest with sparse trees and little to no shrub cover or surface debris (rotten logs, tree stumps, bark etc). This is likely an area where the removal of trees and logs due to bark beetle (*Dendroctonus* spp.) infestation (in the mid-2000's) occurred prior to 2007, as described in the habitat assessment conducted by PCR (2007). However, there are wood scraps and rock piles associated with the adjacent

houses and scattered surface rocks and rock outcrops of varying quality on the project site that provide potentially suitable refugia for boas that might remain in the area.

The remainder of the area west and north of the drainage also consists of relatively open forest with sparse trees and little to no shrub cover or surface debris. The lack of rock outcrops in these areas further reduces the likelihood that southern rubber boas use this area on a consistent basis, and the overall habitat quality is considered to be low.

The use of mesic habitats and the seasonal movement of rubber boas to cooler streamside environments are often repeated in descriptions of habitat use in the literature (Loe 1985, Stewart 1988). However, there is no empirical data to support these claims, and subsequent work by Hoyer and Stewart (2000a) suggest that boas are relatively sedentary and are likely to stay deep in nearby rock outcrops during hot dry periods (Stewart 2005). The potential use of the habitat along the drainage through the site is therefore difficult to assess. At a minimum, the leaf litter, exposed rock, and undercut banks along the lower sections of the drainage may provide potentially suitable but low quality habitat at least some of the year.

The open forest in the southeast corner of the site contains no rock outcrops and few fallen trees, rotten logs and tree stumps, and leaf litter that provide potentially suitable habitat. Some of this area supports hundreds of sapling conifers (including yellow pines and incense cedars) but very little refugia. The strip of habitat north of SR 18 is similarly open and somewhat disturbed by an old access road and dead bracken fern. Habitat in this area therefore is judged to be of low quality or is likely unsuitable for the southern rubber boa at the present time.

Representative photographs with a brief description of the habitat on the project site are in Appendix A.

Conclusion

Records for the extremely secretive southern rubber boa occur on the Harrison Mountain quadrangle and in the vicinity of the Church of the Woods site to the east and the west. One record labeled as a reliable sighting appears to be on the eastern boundary of the site. Suitable habitat occurs for the southern rubber boa in the mixed conifer forest at the northeast end of the site in association with the rock outcrops, rotten logs, leaf litter, and the mesic habitat on the forested slopes and drainage. Suitable rock outcrops also occurs on the slopes west of the drainage below the residential area. Based on these conditions, the potential occurrence of the southern rubber boa is high to moderate in those areas, respectively. Surveys for the boa on the site in 2002 and 2003, although negative, were largely disregarded for the purposes of this assessment based on the lack of detail regarding the methods used and the intensity of the surveys.

A substantial portion of the site either does not contain rock outcrops, the primary indicator of potential presence and habitat quality used in this assessment, or other features that provide suitable refugia, including rotten logs and stumps, fallen trees,

scattered bark and other woody debris, and leaf litter. At least some of the downed trees and rotten logs and tree stumps have been removed from the site, apparently during management activities associated with the bark beetle infestation years ago. Regardless of the reason, the lack of surface objects that provide habitat severely limits the suitability for the boa, and the potential for occurrence in these areas is low. The strip of habitat north of SR 18 is largely unsuitable for the boas as the habitat shows signs of past disturbance, is relatively open, and contains few surface objects. Southern rubber boas are not expected in the low and unsuitable areas but may rarely be found as they move from adjacent areas with better habitat (if they occur there). An estimate of the extent and quality of suitable habitat is provided in Figure 5.

* * *

Leatherman BioConsulting, Inc. appreciates the opportunity to provide these services. Figures 1 through 5, the references cited herein, and representative photographs are enclosed. Please contact us by phone at (714) 701-0863 or by email at bleathermanwlb@aol.com if you have any questions.

Sincerely,

LEATHERMAN BIOCONSULTING, INC.

Brian Leatherman
Principal Biologist

Enclosures

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LITERATURE CITED

California Department of Fish and Wildlife. 2017a. Special Animals List. Unpublished report available from the Natural Diversity Database, Sacramento. 65 pp.

California Department of Fish and Wildlife. 2017b. Rarefind electronic data base search for the Harrison Mountain USGS 7.5 minute series quadrangles. California Department of Fish and Wildlife, Sacramento, California.

Hoyer, R.F. 2015a. Public Comments for the USFWS Status Review of the Southern Rubber Boa, *Charina bottae umbratica*. November 7, 2015.

Hoyer, R.F. 2015b. Thoughts on the Southern Rubber Boa, *Charina bottae umbratica*. (Serpentes: Boidae) SWHCR Bulletin 5(3):27-38.

Hoyer, R.F., and G. R. Stewart. 2000a. Biology of the Rubber Boa (*Charina bottae*), with emphasis on *C.b. umbratica*. Part I: Capture, Size, Sexual Dimorphism, and Reproduction. Journal of Herpetology 34:348-354.

Hoyer, R.F., and G. R. Stewart. 2000b. Biology of the Rubber Boa (*Charina bottae*), with emphasis on *C.b. umbratica*. Part II: Diet, Antagonists, and Predators. Journal of Herpetology 34:354-360.

Keasler, Gary L. 1982. Eastern San Bernardino Mountain southern rubber boa survey. Report prepared for the U.S. Department of Agriculture, Forest Service, San Bernardino National Forest, San Bernardino, California. 22 pp.

Loe, S. A. 1985. Habitat management guide for southern rubber boa (Charina bottae umbratica) on the San Bernardino National Forest. San Bernardino National Forest, San Bernardino, California. 9 pp.

PCR Services Corporation. 2007. Results of a Habitat Re-Assessment for the Southern Rubber Boa (Charina bottae umbratica) on the Church of the Woods Project Site, City of Rim Forest, San Bernardino County, California. Prepared for Mr. Matt Slowik, County of San Bernardino. August 20.

San Bernardino County. 2000. San Bernardino County Official Land Use Plan. General Plan Biotic Resource Overlay. March 24.

Steinhart, P. 1990. California's Wild Heritage: Threatened and Endangered Animals of the Golden State. California Department of Fish and Game.

Stephenson, J. R. and G. M. Calcarone. 1999. Southern California Mountains and Foothills Assessment: Habitat and Species Conservation Issues. PSW-GTR-172.

Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. Albany, CA

Stewart, Glenn R. 1988. The rubber boa (*Charina bottae*) in California, with particular reference to southern subspecies (*C.b. umbratica*). Proceedings of the Conference on California Herpetology. Southwestern Herpetologists Society: 131-138. H. DeLisle, P. Brown, B. Kaufman, and B. McGurty (eds.)

Stewart, Glenn R. 1991. Status of the southern rubber boa (*Charina bottae* umbratica) in the San Bernardino Mountains of southern California. Report prepared for the U.S. Fish and Wildlife Service, Laguna Niguel, California, under Contract (10120-87-00342). 32 pp. + appendices.

Stewart, Glenn R., M.R. Jennings and R.H.Goodman, Jr. 2005. Sensitive species of snakes, frogs, and salamanders in Southern California Conifer Forest Areas: Status and Management. USDA Forest Service General Technical Report PSW-GTR-195

Thomas Leslie Corporation (TLC). 2002. Results of Focused Southern Rubber Boa Surveys. Prepared for Mr. Raul Rodriguez, California Department of Fish and Game, Chino Hills, California. June 10.

Thomas Leslie Corporation (TLC). 2003. Opinion Regarding the Absence of Southern Rubber Boa from TPM 16155. Prepared for Mr. Patrick Hopkins, ICON Inc., San Bernardino, California. October 8.

U.S.Fish and Wildlife Service. 2015a. Endangered and threatened wildlife and plants; review of plant and animal taxa that are candidates or proposed for listing as endangered or threatened. Federal Register 69:24876-24904.

U.S.Fish and Wildlife Service. 2015b. Endangered and threatened wildlife and plants; 90-Day Findings on 25 Petitions. Federal Register 80:56423-56432.

Appendix A. Photographs of Representative Habitat Features on Church of the Woods

High quality rock outcrops and woody debris at northeast end of site that appear to provide access to potentially suitable refugia under surface objects, and in crevices and underground retreats. Potential for occurrence in this area is High.

High quality rock outcrop west of the drainage near the center of site that appears to provide access to potentially suitable refugia under surface objects, and in crevices and underground retreats. Potential for occurrence in this area is Moderate due to relative isolation of this rock outcrop relative to other surface debris and identifiable refugia.

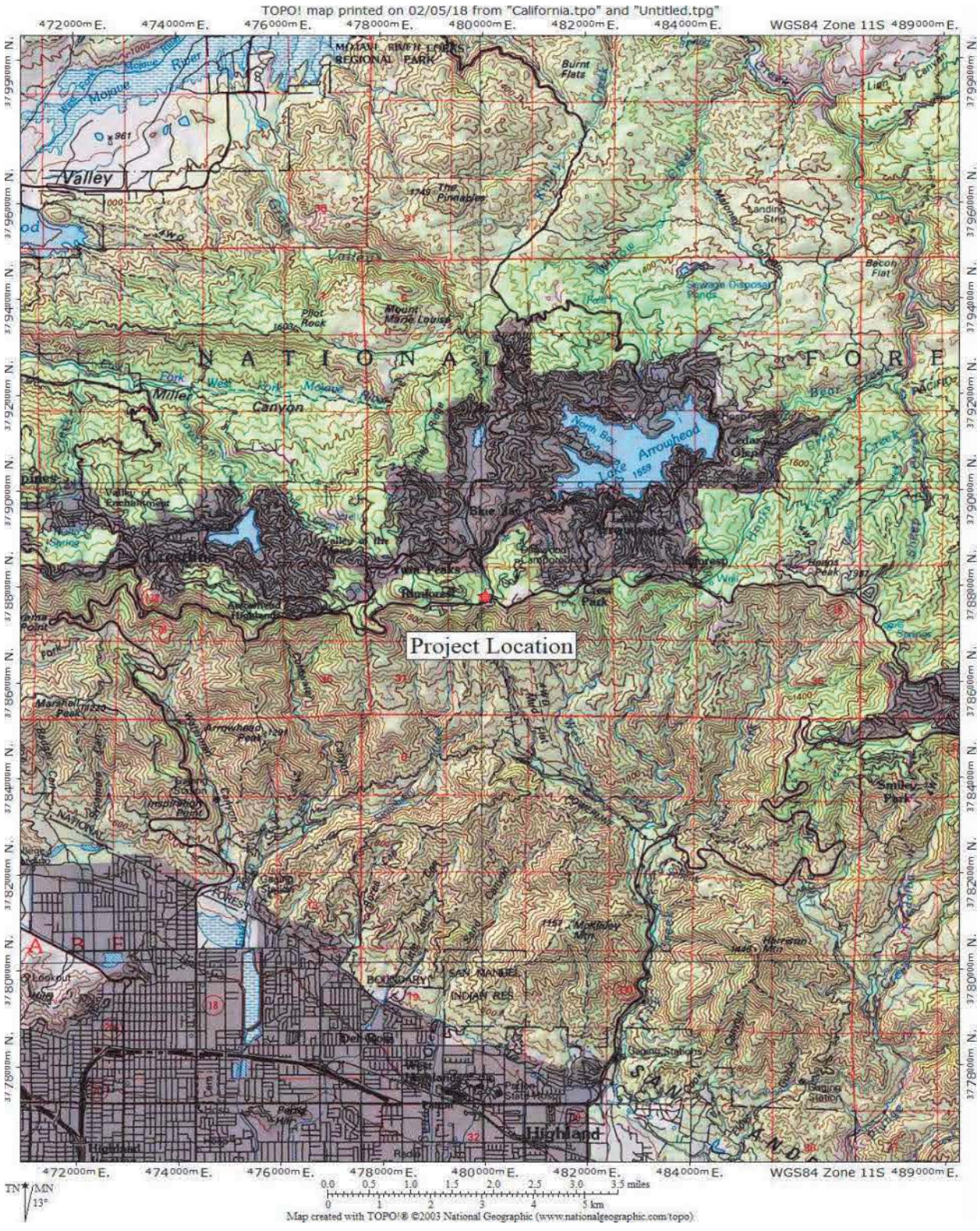
Rotten logs and multiple fallen trees at the east end of site providing suitable refugia habitat under surface debris and within the rotten logs where potential for occurrence is High.

Scattered surface boulders in open conifer forest on west end of site where potential for occurrence is Moderate even though downed logs and other surface debris largely have been removed.

Rock piles, discarded wood, and other suitable refugia along the single family homes at the west boundary of the site provide habitat where potential for occurrence is Moderate.

Habitat in conifer forest in southwest portion of site where downed logs have been removed and potential for occurrence is Low.

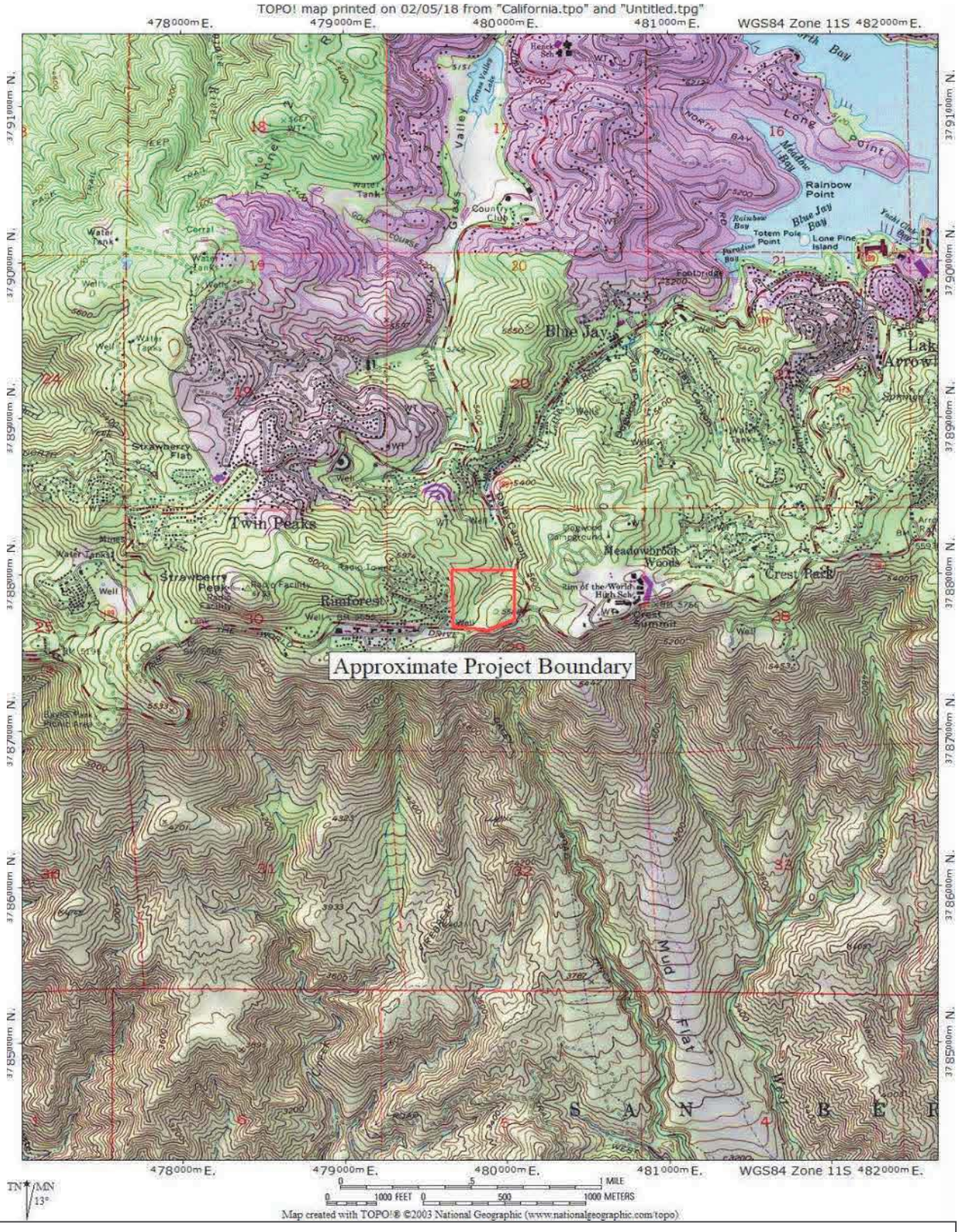
Habitat in southeast portion of site north of State Route 18 where saplings are abundant in open area and habitat for southern rubber boas is largely Unsuitable.



Church of the Woods

Project Location Map
Figure 1

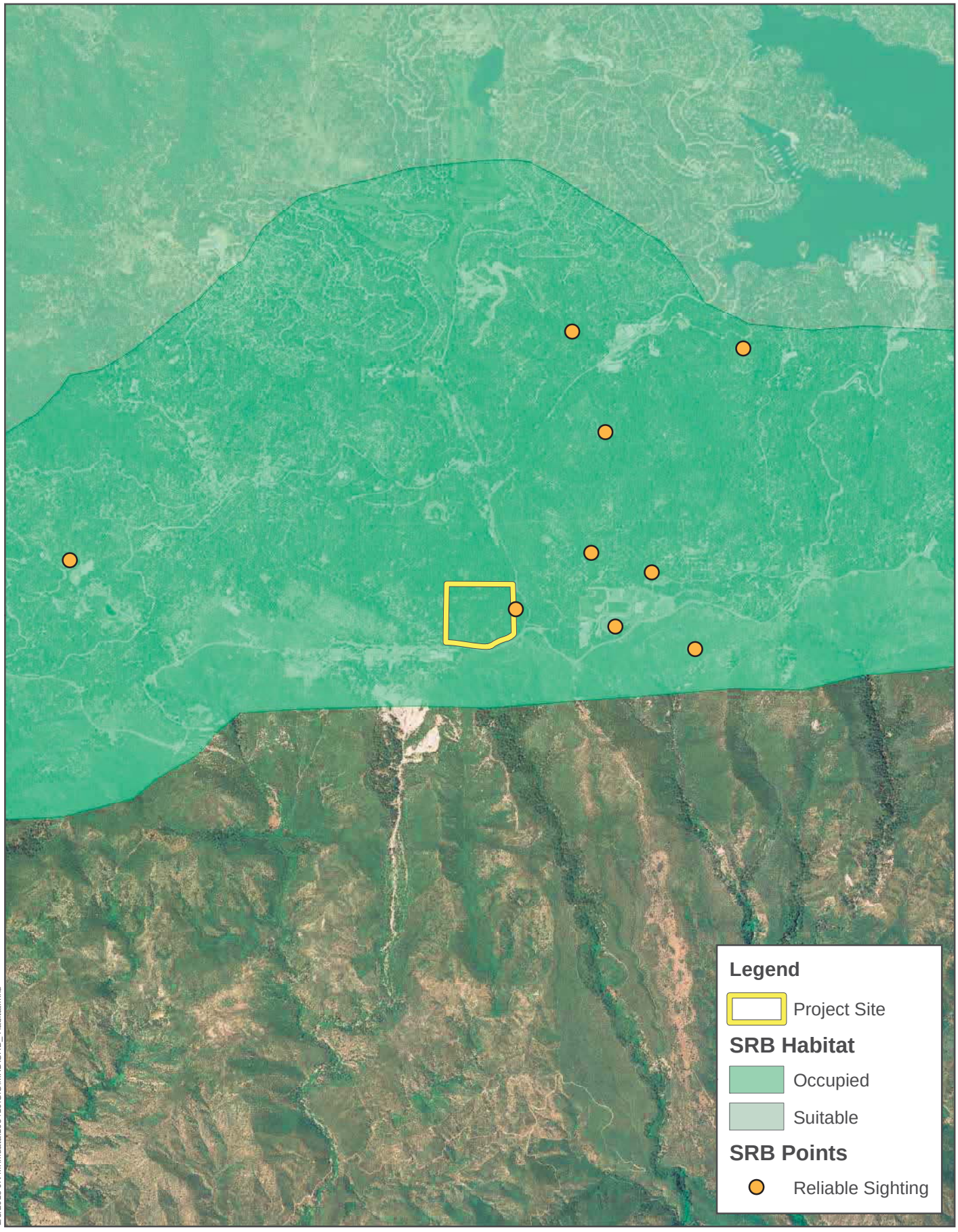
Leatherman BioConsulting, Inc.
Source: TOPO!



Church of the Woods

Project Boundary Map
Figure 2

Leatherman BioConsulting, Inc.
Source: TOPO! Mt. Harrison Quadrangle



2/5/2018 JN M:\Mdata\163410\GIS\MXD\SRB_Habitat.mxd

Michael Baker INTERNATIONAL

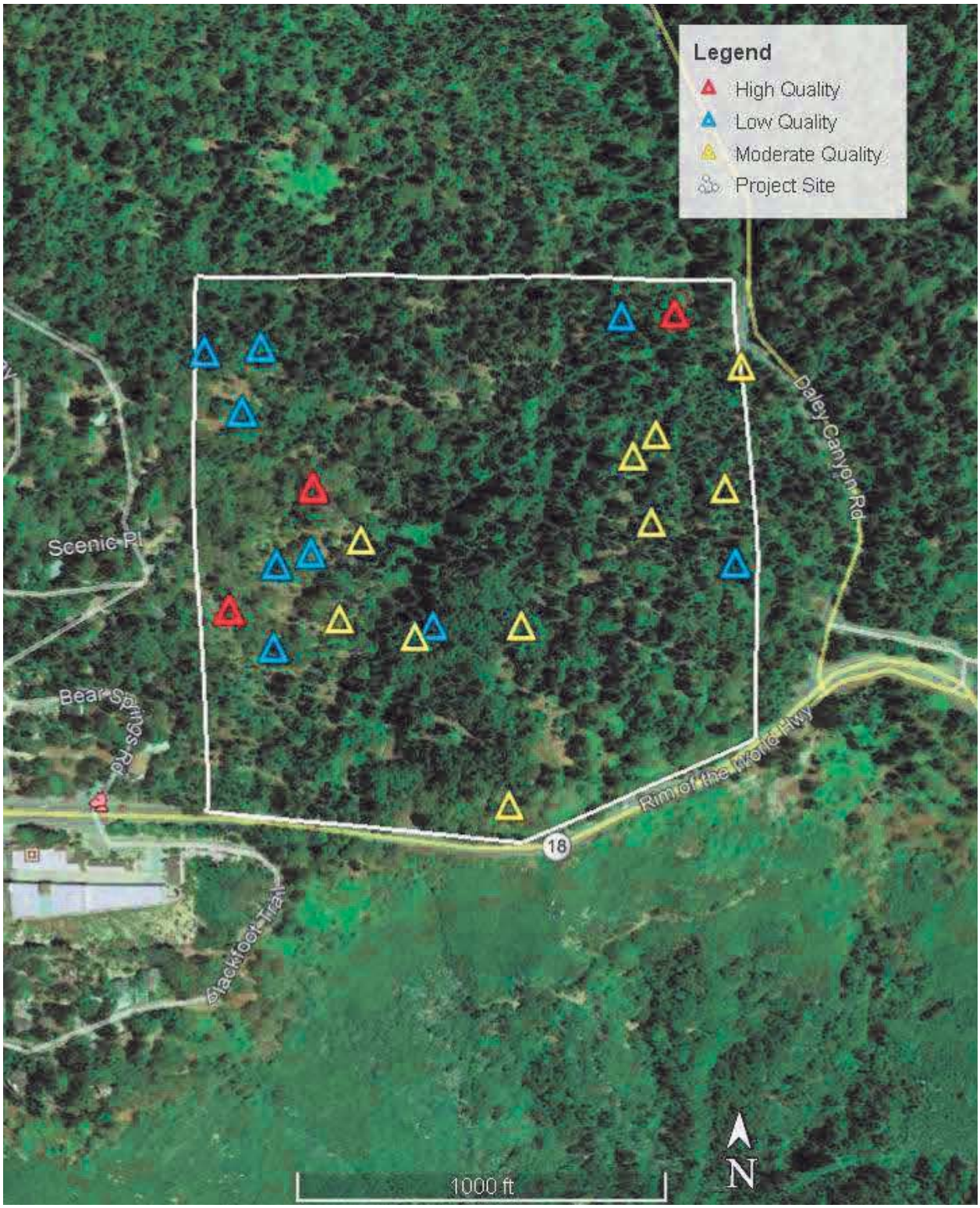
0 0.25 0.5 1 Miles

Source: San Bernardino County, Eagle Aerial 2013, NRCS

CHURCH OF THE WOODS

NRCS Data

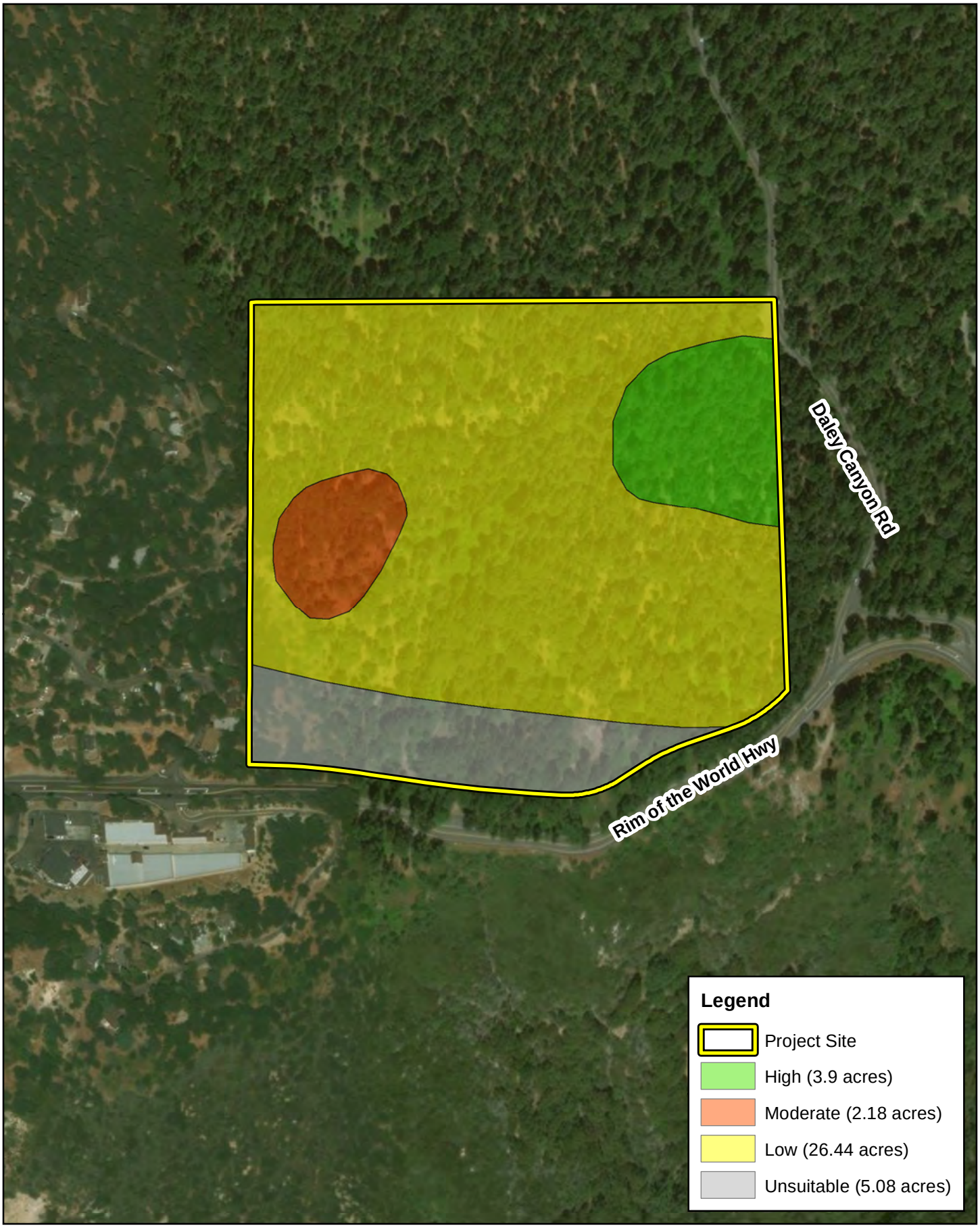
Figure 3



Church of the Woods

Location and Quality of Rock Outcrops
Figure 4

Leatherman BioConsulting, Inc.
Source: GPS data on Google Earth



CHURCH OF THE WOODS PROJECT
HABITAT ASSESSMENT

Southern Rubber Boa Habitat Suitability

ELMT CONSULTING

0 75 150 300 Feet

Source: Google Imagery, San Bernardino County

Exhibit 8