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November 10, 2020

George Cunningham
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Subject: Biological Resources Assessment for the Brookside Golf Course Improvement Project

Dear Mr. Cunningham :

This letter report documents the results of biological resources assessment at the proposed Brookside Golf Course Improvement Project site. The project site and 100-foot survey buffer area constitute the survey area. This report provides an overview of the survey area, methodology used for the assessment, results, conclusions, and recommended minimization measures.

Project Location

The survey area is located within the U.S. Geological Survey (USGS) Pasadena, California 7.5-minute topographic quadrangles (quad) in the City of Pasadena, Los Angeles County, California, at the base of the San Rafael Hills (**Figure 1 – Regional Location**). More specifically, it is situated within the Brookside Golf Course; bound to the north, south and west by associated golf course amenities and to the east by Rosemont Avenue and Rose Bowl Drive (**Figure 2 – Project Location**). A concrete channelized portion of the Arroyo Seco traverses the western boundary of the survey area, located immediately adjacent to the project site. Interstate 210 is located within 1 mile to the north and east, and the California State Route 134 is situated within 1 mile to the south.

Topography within the survey area has been heavily modified through the development and maintenance of the Brookside Golf Course and is relatively flat. Elevation ranges from approximately 860 feet above mean sea level (amsl) in the northwest corner of the survey area and 840 feet amsl in the southeast corner of the survey area.

Project Description

The Rose Bowl Operating Company (RBOC) proposes to relocate and expand the existing driving range and construct a new miniature golf facility within the Brookside Golf Course. The expanded driving range and new miniature golf course would remain in the same general location as the existing driving range that is between the Arroyo Seco and the Brookside Clubhouse.

The proposed expansion of the driving range would include an increase from 20 to 60 hitting bays and the miniature golf course would include 36 holes. The proposed project would remain a championship layout and the reduction in size would be designed to improve the pace of play. In order to accommodate the expanded driving range and new miniature golf course, tree removal and relocation and surficial grading would be required.



SOURCE: ESRI, 2020; ESA, 2020

Brookside Golf Course Improvements Project

Figure 1
Regional Location





SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 2
Project Location



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Methods

The following resources were queried to reveal special-status plants and wildlife to that have been reported within the Pasadena United States Geological Survey (USGS) Quadrangle map and surrounding eight (8) quadrangles that include Burbank, Chilao Flat, Condor Peak, El Monte, Hollywood, Los Angeles, Mt. Wilson and Sunland:

- California Department of Fish and Wildlife (CDFW). 2020a. California Natural Diversity Data Base (CNDDDB). Accessed October 22, 2020.
- California Department of Fish and Wildlife (CDFW). 2020b. California Natural Community List. Sacramento, CA: CDFW, Natural Heritage Division, November 8, 2019. Accessed October 22, 2020. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline>
- California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Vascular Plants of California. Accessed October 22, 2020.
- U.S. Fish and Wildlife Service (USFWS). 2020a. Critical Habitat Portal. Accessed October 22, 2020. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265_ad4fe09893cf75b8dbfb77
- U.S. Fish and Wildlife Service (USFWS). 2020b. Accessed October 22, 2020. <https://ecos.fws.gov/ipac/location/HEJJ2LUXB5EBVO3TDFU4UHPFXI/resources>

A field visit was conducted to verify the conditions of the survey area. In addition, a detailed desktop analysis of aerial imagery and review of the available database information was completed to verify adjacent land uses (Google Earth Pro 2020). The information that was gathered was used to determine the potential for special-status species and other sensitive biological resources to occur within the project site and survey area.

All native and non-native plant communities and land uses were characterized and delineated on aerial photographs and then digitized on aerial maps using a Geographic Information System software (ArcGIS). The plant communities and land use within the survey area were described based on vegetation type and/or other visual characteristics. The Manual of California Vegetation, Second Edition (Sawyer 2009), a common tool used to characterize vegetation, was merely used as a guide, because alliances listed in the publication did not accurately describe the communities present within the survey area. A detailed description of each plant community and land use is provided below. Representative photos were taken during the field assessment conducted on September 23, 2020 and are provided at the end of this report (**Attachment A – Photographic Exhibit**).

Results

Plant Communities and Land Use

Three distinct areas were identified within the survey area that include landscaped vegetation, developed land use and unvegetated concrete-lined channel (**Figure 3 – Plant Communities and Land Use**), each of which are described in detail below.

Landscaped Vegetation. Landscaped vegetation is present throughout the majority of the project site and survey area. This community is characterized by a collection of common (non-native) turf grasses planted along course fairway and putting greens, that may include bent grass (*Agrostis* sp.), Bermuda grass (*Cynodon dactylon*), perennial ryegrass (*Lolium perenne*) and Zoysia grass (*Zoysia japonica*), among others, interspersed with various ornamental trees and landscaping. Trees within the project site are documented within a protected tree report (ESA 2020). As indicated in the protected tree report, the trees located within the survey area include native species such as coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), California bay laurel (*Umbellularia californica*) and white alder (*Alnus rhombifolia*); and non-native species such as Chinese elm (*Ulmus parvifolia*), carob (*Ceratonia siliqua*), red ironbark (*Eucalyptus sideroxylon*) American sweetgum (*Liquidambar styraciflua*).

Unvegetated Concrete-Lined Channel. The Arroyo Seco traverses the western portion of the survey, immediately adjacent to the project site. This portion of the drainage consists of concrete-lined channel and is entirely devoid of vegetation.

Developed. Developed land use generally includes the golf course facilities, that includes the golf course and the paved golf cart/pedestrian pathways, driving range platform and the club house.

Common Fish and Wildlife

Avian species expected to forage and breed within the landscaped vegetation located in the survey area include, but are not limited to, Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), American kestrel (*Falco sparverius*), California towhee (*Melospiza crissalis*), Northern mockingbird (*Mimus polyglottos*), spotted towhee (*Pipilo maculatus*), bushtit (*Psaltiriparus minimus*), lesser goldfinch (*Spinus psaltria*), Bewick's wren (*Thryomanes bewickii*) and mourning dove (*Zenaidura macroura*). No evidence of raptor nesting was observed within the tree located in the survey area; however, it should be noted that a specific search of predated nest material was not conducted.

California ground squirrels (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) could burrow within friable soil available within the survey area and utilize it to forage and breed; however, it is expected that the golf course maintenance staff control these ground dwellers on the golf course and driving range. Various other mammal species that include coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), mule deer (*Odocoileus hemionus*) and raccoon (*Procyon lotor*) are expected to utilize the Arroyo Seco for local movement and to a limited degree, may forage within the landscaped vegetation of the golf course during nighttime hours when it is closed.



SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 3
Plant Communities and Land Use



Sensitive Biological Resources

Special-status Wildlife. Special-status wildlife is defined as those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, state, or other agencies to be under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status on the basis of adopted local policies (e.g., city and county) or the educated opinion of respected resource interest groups (e.g., Western Bat Working Group). Special-status wildlife is defined as any of the following:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380.
- Wildlife designated by CDFW as species of special concern, included on the Watch List or considered “Special Animals.”
- Wildlife fully protected in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Bird species protected by the Migratory Bird Treaty Act (MBTA).
- Bat species considered priority by the Western Bat Working Group (WBWG).

Special-status Plants. Special-status plants are defined as those plants that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as Counties, Cities, and special districts to meet local conservation objectives. Special-status plants are defined as any of the following:

- Plants listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under FESA or CESA.
- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California.
- Plants listed by the CNPS as plants for which more information is needed to determine their status and plants of limited distribution (Rank 3 and 4 plants).

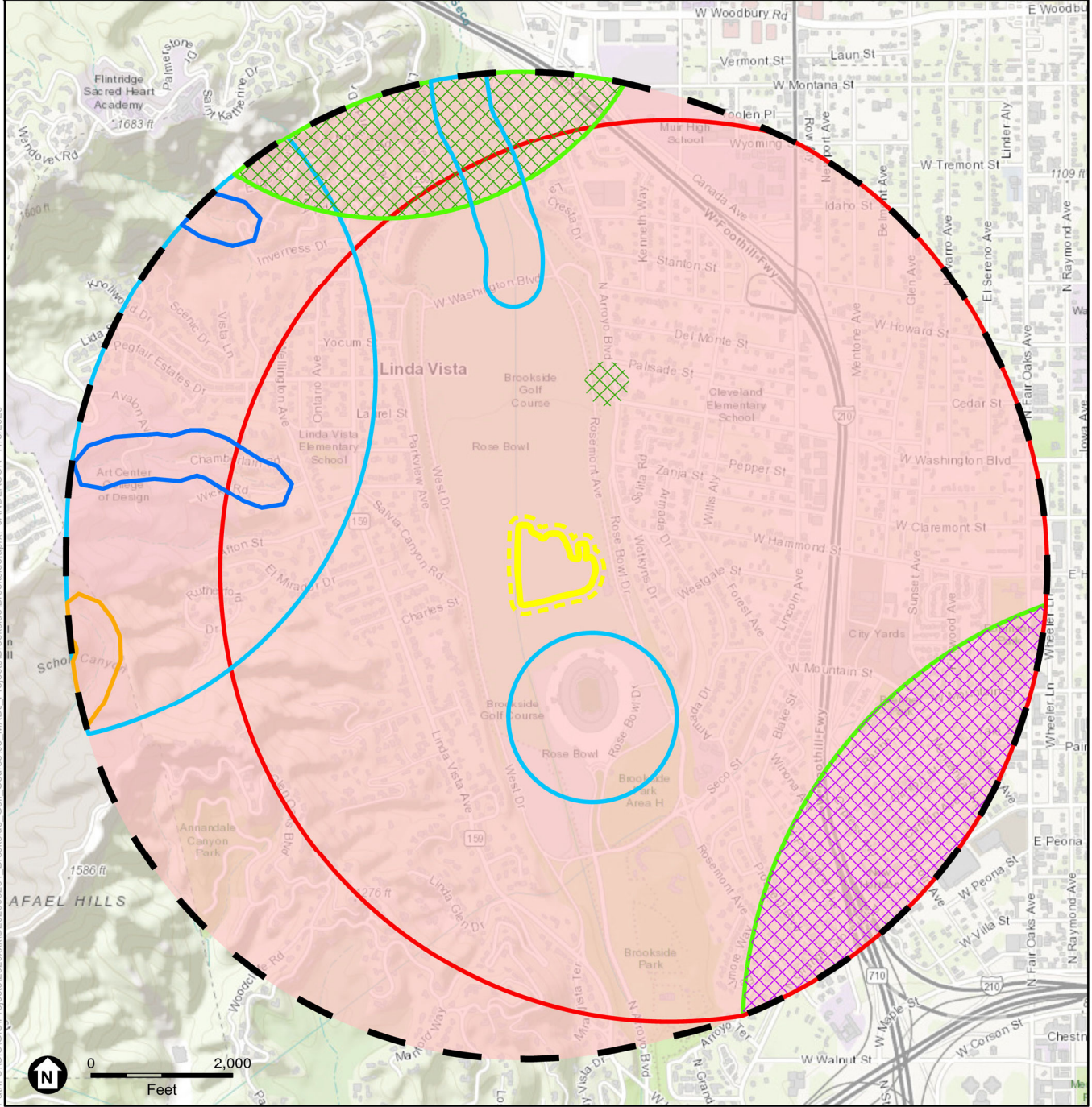
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).

The special-status plant and wildlife species listed in **Table 3 – Potentially Occurring Special-Status Species in the Survey Area** below were determined to have varying levels of potential to occur based on the following criteria:

- **None:** The survey area currently does not habitat for a particular species; therefore, they are not expected to occur onsite.
- **Low Potential:** The survey area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent.
- **Moderate Potential:** The survey area provides marginal habitat for a particular species. For example, the habitat may be heavily disturbed and/or may not support all stages of a species life cycle; however, it is present nonetheless.
- **High Potential:** The survey area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate area.
- **Present:** The species was observed within the survey area during the site visit.

Numerous special-status species and habitat occurrences have been documented within the eight-USGS quadrangle query of the CNDDDB, CNPS and IPaC databases (**Attachment B – Database Review**), of which, nine (9) special-status wildlife species and six (6) special-status plant species have been reported within or immediately adjacent to the survey area that includes: southern California legless lizard (*Anniella stebbinsi*), pallid bat (*Antrozous pallidus*), western burrowing owl (*Athene cunicularia*), Crotch's bumblebee (*Bombus crotchii*), southwestern willow flycatcher (*Empidonax traillii* ssp. *extimus*), Greater western mastiff bat (*Eumops perotis* ssp. *californicus*), American Peregrine falcon (*Falco peregrinus* ssp. *anatum*), hoary bat (*Lasiurus cinereus*) least Bell's vireo (*Vireo bellii* ssp. *pusillus*), Nevin's barberry (*Berberis nevinii*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), Mesa horkelia (*Horkelia cuneata* var. *puberula*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*) and Parish's gooseberry (*Ribes divaricatum* var. *parishii*) (See **Figure 4 – CNDDDB**). While these species have been previously documented within or in close proximity to the survey area (most in the early- to mid-1900's), in its current state, suitable habitat (i.e., native plant communities, suitable roost sites, etc.) is not present. Nonetheless, one special-status species has potential to occur, Cooper's hawk (*Accipiter cooperii*), which has a moderate potential to forage and breed within 500 feet of the project site.

- Survey Area
- 100-ft Buffer
- One-mile Buffer
- CNDDB Occurrence**
- Nevin's barberry
- Southern Coast Live Oak Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- least Bell's vireo
- pallid bat, western mastiff bat, Coulter's goldfields, Crotch bumble bee, white rabbit-tobacco, smooth tarplant, mesa horkelia, burrowing owl, hoary bat
- mesa horkelia
- southern California legless lizard
- American peregrine falcon, Parish's gooseberry, southwestern willow flycatcher



SOURCE: ESRI; CNDDB, 2020; ESA, 2020.

Brookside Golf Course Improvements Project



Figure 4
CNDDB

TABLE 1
POTENTIALLY OCCURRING SPECIAL-STATUS PLANT AND WILDLIFE SPECIES WITHIN THE SURVEY AREA

Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Wildlife				
Birds				
Cooper's hawk	<i>Accipiter cooperii</i>	None/WL, SA/None	Cismontane woodland, riparian forest and woodland and upper montane coniferous forest.	Moderate. Suitable foraging habitat is present throughout much of the landscaped golf greens and nesting habitat is present within the many of the ornamental trees planted within the survey area. This species may nest within 500 feet of the project site.
burrowing owl	<i>Athene cunicularia</i>	FSC/SSC, SA/None	Open scrub and grassland communities that allow for optimal visibility when foraging. Generally, this species prefers fossorial mammal burrows for use as wintering and breeding refuge; however, may also use disused material or infrastructure (e.g., concrete/metal pipes, culverts, debris piles, etc.) for this purpose. This species readily utilizes disturbed areas to forage and breed.	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1895. However, suitable habitat for this species does not currently exist onsite.
Southwestern willow flycatcher	<i>Empidonax traillii</i> ssp. <i>extimus</i>	FE/SE,WL, SA/None	Riparian vegetation. This species is generally associated with open water.	None. This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 1906. However, suitable habitat for this species does not currently exist onsite.
American peregrine falcon	<i>Falco peregrinus</i> ssp. <i>anatum</i>	BCC/FP,SA/None	Utilizes various habitat types such as chaparral, forest and woodland communities for foraging. Nests on skyscrapers, water towers, cliffs, power pylons and other tall structures (Cornell 2020).	None. This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 2005. However, suitable habitat for this species does not exist onsite.
least Bell's vireo	<i>Vireo bellii</i> ssp. <i>pusillus</i>	FE/SE,SA/None	Riparian vegetation.	None. This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 1911. However, suitable habitat for this species does not currently exist onsite.



Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Mammals				
Pallid bat	<i>Antrozous pallidus</i>	None/SSC, SA/WBWG-H	Grasslands, shrublands, woodlands, and coniferous forests; most common in open, dry habitat with rocky areas for roosting, as well as abandon buildings and medal clad structures Species is known to roost in cavities of oak trees (WBWG 2020).	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1910. However, suitable habitat for this species does not currently exist onsite.
Greater western mastiff bat	<i>Eumops perotis</i> ssp. <i>californicus</i>	None/SSC, SA/WBWG-H	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. Roosts in small colonies in rock fissures in high cliff faces (WBWG 2020).	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1941. However, suitable habitat for this species does not currently exist onsite.
Hoary bat	<i>Lasiurus cinereus</i>	None/SA/WBWG-M	Roosts in coniferous and/or deciduous trees, commonly along the edge of clearings (WBWG 2020).	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1945. However, suitable habitat for this species does not currently exist onsite.
Reptiles				
Southern California legless lizard	<i>Anniella stebbinsi</i>	None/SSC,SA	Chaparral, coastal dunes and coastal scrub. This species is regularly found associated with woodrat middens.	None. This species was observed within and southeast of the survey area, in 1941. However, suitable habitat for this species no longer exists onsite.
Invertebrates				
Crotch bumble bee	<i>Bombus crotchii</i>	None/SA/None	Coastal scrub and chaparral.	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1933. However, suitable habitat for this species does not currently exist onsite.
Plants				
Nevin's barberry	<i>Berberis nevinii</i>	FE/SE/1B	Sandy/gravelly soils along washes, associated within coastal sage scrub and chaparral communities.	None. This species was observed immediately adjacent to the Brookside Golf Course, approximately 1,500 feet to the north of the project site, in 1927. However, suitable habitat for this species does not currently exist onsite.



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Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Smooth tarplant	<i>Centromadia pungens</i> ssp. <i>laevis</i>	None/None/1B	Shadescale scrub, alkali sink and valley grassland.	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1901. However, suitable habitat for this species does not currently exist onsite.
Mesa horkelia	<i>Horkelia cuneata</i> var. <i>puberula</i>	None/None/1B	Dry, sandy soils within coastal sage scrub and chaparral communities.	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1901. However, suitable habitat for this species does not currently exist onsite.
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	None/None/1B	Alkali sink, coastal salt marsh, freshwater wetlands and wetland-riparian.	None. This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1882. However, suitable habitat for this species does not currently exist onsite.
White rabbit-tobacco	<i>Pseudognaphalium leucocephalum</i>	None/None/2B		None. This species was observed within the vicinity of the Brookside Golf Course, to the south of the project site, within 1908. However, suitable habitat for this species does not currently exist onsite.
Parish's gooseberry	<i>Ribes divaricatum</i> var. <i>parishii</i>	None/None/1A	Moist woodland.	None. This species was observed within the vicinity of the Brookside Golf Course, to the west of the project site, in 1893. However, suitable habitat for this species does not currently exist onsite.

Federal/State/Other Status: FE – federally endangered, FP – Fully Protected, FSC – Federal Species of Concern; SA – State Special Animal, SE – State endangered, BCC – Federal Bird of Conservation Concern; SSC – State Species of Special Concern, WL – State watch List; WBWG – Western Bat Working Group List (M – medium priority, H – High Priority); California Native Plant Society (CNPS): 1A – Plants presumed extinct in California; 1B – Plants rare, threatened or endangered in California and elsewhere; 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.



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Protected Trees

Numerous trees protected under Title 8, Chapter 8.52 of the Pasadena Municipal Code are present throughout the survey area and may be impacted by the project. A protected tree survey was conducted on October 5 and 6, 2020, the results of which have been compiled and analyzed in a tree report (ESA 2020).

Critical Habitat

Under FESA, to the extent feasible, the USFWS and National Marine Fisheries Service (NMFS) are required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat designates this suitable habitat, occupied or not, as essential to the survival and recovery of the species.

There is no critical habitat in the vicinity of the survey area.

Migration Corridors

The project site and immediate surroundings contain landscaping and regularly maintained trees associated with the Brookside Golf Course. The Central Arroyo Seco flows north-south along the western portion of the project site and provides connectivity to the Upper Arroyo/Hahamongna Watershed Park to the north of the project site, upstream of Devils Gate Dam. The Central Arroyo Seco provides a suitable corridor for native resident species to move through the area, particularly medium to large mammals such as coyote, bear, deer and mountain lion. Coyote and deer have been frequently observed in the area by local residents due to the Project location's proximity to Los Angeles National Forest (ESA 2015). Mountain lion (*Puma concolor*) have the potential to move through the project site using the Central Arroyo Seco and surrounding recreation areas (Wilson, 2015). Additionally, the Rose Bowl Operating Committee (RBOC) observed a black bear (*Ursus americanus*), near the golf course in 2013, at night, near the ponds that occur on the golf course that currently is enclosed by an 8-foot tall fence (RBOC pers. comm. 2015).

While the project site and vicinity provide opportunities for local wildlife movement, the immediate surroundings are entirely developed and frequently used for recreational purposes and various events that are held at the Rose Bowl. The channelized portion of the Arroyo Seco that traverses the western boundary of the project site could support wildlife movement.



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Aquatic Resources

The Arroyo Seco is likely regulated by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB) and CDFW; however, with the implementation of a Stormwater Pollution Prevention Plan (SWPPP) and the appropriate Best Management Practices (BMP's), the proposed project activities are not expected to have a significant effect on aquatic resources.

Regulatory Setting

Federal and State Endangered Species Acts

FESA provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the “take” of any federally-listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. “Take” includes the destruction of a listed species’ habitat. Section 9 also prohibits a number of specified activities with respect to endangered and threatened plants.

CESA mandates that state agencies not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to the FESA, CESA contains a procedure for the CDFW to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

Migratory Bird Treaty Act

The MBTA prohibits the take of native birds “by any means or manner to pursue, hunt, take, capture (or) kill” any migratory birds except as permitted by regulations issued by the USFWS. The term “take” is defined by USFWS regulation to mean to “pursue, hunt, shoot, wound, kill, trap, capture or collect” any migratory bird or any part, nest or egg of any migratory bird covered by the conventions, or to attempt those activities.

Sections 3503, 3503.5 and 3513 of the California Fish and Game Code

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the California Fish and Game Code, which provides that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Section 3513 of the California Fish and Game Code prohibits any take or possession of birds that are designated by the Migratory Bird Treaty Act as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. Migratory birds include all native



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birds in the United States, except those non-migratory game species such as quail and turkey that are managed by individual states.

Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the USACE regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the U.S. are often categorized as “jurisdictional wetlands” (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and “other waters of the United States” when habitat values and characteristics are being described. “Fill” is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the proposed project would uphold State of California water quality standards.

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include, but are not limited to, excavation or fill placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement. As part of the notification process, the CDFW requires documentation of any trees to be removed as part of the project. Trees that have a trunk diameter at breast height (dbh) of greater than two inches are subject to regulation by the CDFW via the Streambed Alteration Agreement.

City of Pasadena Tree Protection Ordinance

The City of Pasadena’s City Trees and Tree Protection Ordinance under Title 8, Chapter 8.52 of the Pasadena Municipal Code provides protection for the following trees, broadly defined as “protected tree(s)”:

- Landmark tree – A tree designated as a landmark under Chapter 17.62 of the municipal code as a tree of historic or cultural significance and of importance to the community due to various factors.
- Landmark-eligible tree – A tree which meets the criteria for designation as a landmark tree
- Mature tree – An otherwise non-protected tree with a diameter-at-breast height (DBH) of 19 inches or greater (except for trees in RS or RM-12 Zones).



- Native tree – Any tree with a trunk more than 8 inches in diameter at a height of 4 ½ feet above natural grade that is one of the following species: *Quercus agrifolia* (coast live oak), *Quercus engelmannii* (Engelmann oak), *Quercus chrysolepis* (canyon oak), *Platanus racemosa* (California sycamore), *Juglans californica* (California walnut), *Quercus berberidifolia* (scrub oak), *Quercus lobata* (valley oak), *Umbellularia californica* (California bay), *Populus fremontii* (cottonwood), *Alnus rhombifolia* (California alder), *Populus trichocarpa* (black cottonwood), *Salix lasiolepis* (arroyo willow), and *Aesculus californica* (California buckeye)”.
- Public Tree – A tree located in a place or area under ownership or control of the City, including but without limitation streets, parkways, open space, parkland and including city owned property under the operation control of another entity by virtue of a lease, license, operating or other agreement.

Arroyo Seco Master Plans

The City of Pasadena maintains three Master Plans for the Arroyo Seco: The Hahamongna Watershed Park Master Plan (for the Upper Arroyo area); the Central Arroyo Master Plan; and the Lower Arroyo Master Plan. The project site is located within the Central Arroyo Seco Plan Area and is therefore subject to the provisions set forth within that plan.

Central Arroyo Master Plan. The Central Arroyo Master Plan Advisory Committee developed the Central Arroyo Master Plan in 2003 based on community input, interviews with public agencies, analysis of the Recreation Loop, and a review of pertinent City plans. The Master Plan was adopted by the City Council as of September 26, 2005. The Master Plan was designed to modify and enhance existing facilities and to provide recommendations for areas within the Central Arroyo, including the area surrounding the Rose Bowl. Recommendations generally fall into the following topic areas: Brookside Park (including both hillside areas and group picnic areas); Rosemont Pavilion; the Recreation Loop; Recreation Trails, Landscape and Aesthetic Improvements; Parking; Flood Protection; Permitting Process; Management and Maintenance; Land and Conservation Acquisition; Accessibility and Security; and Implementation. Many of these recommendations have components that outline the protection and/or restoration of biological resources that persist within the plan area.

Conclusions and Recommended Minimization Measures

Special-Status Species and Nesting Birds

Cooper’s hawk and other native bird species may nest within 500 feet of the project site and may be affected by project construction. Moreover, nighttime lighting associated with the driving range improvements and proposed miniature golf course may contribute to existing nighttime lighting. The minimization measures below are recommended to avoid impacts to nesting birds during construction, including indirect impacts that may be created by additional nighttime light sources during operation.

- If construction activities occur within the bird nesting season (generally defined as February 15 through September 15), a qualified biologist shall conduct a nesting bird survey within 3 days prior to the proposed



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start date, to identify any active nests (including Cooper's hawk) within 500 feet of the project site. If an active nest is found, the nest shall be avoided and a suitable buffer zone shall be delineated in the field such that no impacts shall occur until the chicks have fledged the nest as determined by a qualified biologist. Construction buffers shall be 300 feet for passerines and up to 500 feet for any raptor species; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noises and vibrations.

- To minimize potential indirect impact to nesting birds that may utilize ornamental/landscape vegetation onsite and/or wildlife movement along the Arroyo Seco, nighttime lighting associated with the driving range and miniature golf course shall be shielded downward to limit spillage onto these sensitive receptors.

Aquatic Resources

The Arroyo Seco is located outside of the project site. The implementation of a Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP's) would avoid and/or minimize any inadvertent impacts to this water course, including water quality. As such, the proposed project activities are not expected to have a significant effect on aquatic resources.

Migration Corridors

Wildlife is expected to utilize the Arroyo Seco and while it is situated within the survey area, the project is not expected to have an impact on wildlife movement. Specifically, no direct effects to the Arroyo Seco would occur from construction activities. Indirect impacts to wildlife movement would be minimized by restricting construction activities between the hours of 1900 and 0700, when wildlife is least likely to move through the survey area.

Nighttime light spillage associated with the operation of the driving range and proposed miniature golf course is not expected to significantly disrupt wildlife movement when considering existing conditions. Nonetheless, nighttime lighting should be shielded away from the Arroyo Seco to reduce any potential affects it may have on wildlife movement.

Protected Trees

Protected trees are present within the project site and may be impacted as a result of construction activities. The Brookside Golf Course Improvements Project Tree Report (ESA 2020) includes an inventory of the protected trees that may be affected by the project and provides appropriate mitigation to offset these potential impacts.

Central Arroyo Seco Master Plan

In accordance with Section 4.5 Landscape and Aesthetic Improvements of the Central Arroyo Seco Master Plan, certain areas identified for native plant restoration shall be incorporated into the landscape design of the project.



George Cunningham
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References

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Environmental Science Associates (ESA). 2020. Brookside Golf Course Improvements Project, Tree Report. October 2020.

Environmental Science Associates (ESA). 2015. Arroyo Seco Music and Arts Festival Project, Draft EIR.

Google Earth Pro. 2020

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento. 1300 pp.

Western Bat Working Group (WBWG). 2020. Species Info. Accessed at <http://wbwg.org/western-bat-species/>

Wilson, Larry, *Proving that Lions Roam in Pasadena: Larry Wilson*, Pasadena Star-News. June 23, 2015.

On behalf of ESA, it has been a pleasure preparing this information for you. Please do not hesitate to contact Robbie Sweet or Greg Ainsworth at (805) 914-1500 if you have any questions or comments regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Robbie Sweet', with a long, horizontal flourish extending to the right.

Robbie Sweet
Senior Associate Biologist

A handwritten signature in black ink, appearing to read 'Greg Ainsworth', with a long, horizontal flourish extending to the right.

Greg Ainsworth
Director, Biological Resources

Attachments: Attachment A – Representative Site Photographs
Attachment B– Database Review - CNDDDB, CNPS and IPaC

Attachment A
**Representative Site
Photographs**



Photo 1 (E). Photograph depicts the project site from its western boundary.



Photo 2 (S). Photograph depicts the project site from its northern boundary.



Photo 3 (W). Photograph depicts the project site from its southeastern boundary.



Photo 4 (E). Photograph depicts the project site from its southern boundary.



Photo 5 (N). Photograph depicts the Arroyo Seco, situated along the western project boundary.



Photo 6 (S). Photograph depicts the Arroyo Seco, situated along the western project boundary.

Attachment B
**Database Review –
CNDDDB, CNPS and
IPaC**

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE *RareFind*

Query Summary:

Quad **IS** (Burbank (3411823) **OR** Chilao Flat (3411831) **OR** Condor Peak (3411832) **OR** El Monte (3411811) **OR** Hollywood (3411813) **OR** Los Angeles (3411812) **OR** Mt. Wilson (3411821) **OR** Sunland (3411833) **OR** Pasadena (3411822))

Print

Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Stat
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	Birds	ABPBX91091	235	1	None	None	G5T3	S3	null	CDFW_WI List
<i>Anaxyrus californicus</i>	arroyo toad	Amphibians	AAABB01230	139	5	Endangered	None	G2G3	S2S3	null	CDFW_SS Species of Concern, IUCN_EN-Endangere
<i>Anniella</i> spp.	California legless lizard	Reptiles	ARACC01070	119	19	None	None	G3G4	S3S4	null	CDFW_SS Species of Concern
<i>Anniella stebbinsi</i>	Southern California legless lizard	Reptiles	ARACC01060	417	34	None	None	G3	S3	null	CDFW_SS Species of Concern, USFS_S-S
<i>Antrozous pallidus</i>	pallid bat	Mammals	AMACC10010	420	7	None	None	G5	S3	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S WBWG_H Priority
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	Dicots	PDERI042P0	35	12	None	None	G5T3	S3	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
<i>Arenaria paludicola</i>	marsh sandwort	Dicots	PDCAR040L0	16	1	Endangered	Endangered	G1	S1	1B.1	SB_SBBG Barbara B Garden
<i>Arizona elegans occidentalis</i>	California glossy snake	Reptiles	ARADB01017	260	3	None	None	G5T2	S2	null	CDFW_SS Species of Concern
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	Reptiles	ARACJ02143	148	10	None	None	G5T5	S3	null	CDFW_SS Species of Concern
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	Dicots	PDFAB0F1G0	42	4	Endangered	None	G2	S2	1B.1	SB_CalBG California/I Santa Ana

												Garden, SI Santa Bart Botanic Ga
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1989	2	None	None	G4	S3	null		BLM_S-Se CDFW_SS Species of Concern, I Least Con USFWS_E of Conserv Concern
Atriplex parishii	Parish's brittlescale	Dicots	PDCHE041D0	15	1	None	None	G1G2	S1	1B.1		SB_CRES Diego Zoo Native Ger Bank, USFS_S-S
Atriplex serenana var. davidsonii	Davidson's saltscale	Dicots	PDCHE041T1	27	2	None	None	G5T1	S1	1B.2		SB_CalBC California/I Santa Ana Garden
Berberis nevinii	Nevin's barberry	Dicots	PDBER060A0	32	7	Endangered	Endangered	G1	S1	1B.1		SB_CalBC California/I Santa Ana Garden, SI Santa Bart Botanic Ga
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	288	8	None	Candidate Endangered	G3G4	S1S2	null	null	
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2535	1	None	Threatened	G5	S3	null		BLM_S-Se IUCN_LC- Concern, USFWS_E of Conserv Concern
California Walnut Woodland	California Walnut Woodland	Woodland	CTT71210CA	76	2	None	None	G2	S2.1	null	null	
Calochortus clavatus var. gracilis	slender mariposa-lily	Monocots	PMLI0D096	143	2	None	None	G4T2T3	S2S3	1B.2		SB_CalBC California/I Santa Ana Garden, USFS_S-S
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Monocots	PMLI0D122	111	7	None	None	G3T2	S2	1B.2		BLM_S-Se SB_CalBC California/I Santa Ana Garden, SI Santa Bart Botanic Ga USFS_S-S
Calochortus plummerae	Plummer's mariposa-lily	Monocots	PMLI0D150	230	49	None	None	G4	S4	4.2		SB_CalBC California/I Santa Ana Garden
Calochortus striatus	alkali mariposa-lily	Monocots	PMLI0D190	113	1	None	None	G3?	S2S3	1B.2		BLM_S-Se SB_CalBC California/I Santa Ana Garden, USFS_S-S
Calochortus weedii var. intermedius	intermediate mariposa-lily	Monocots	PMLI0D1J1	140	2	None	None	G3G4T2	S2	1B.2		SB_CalBC California/I Santa Ana

											Garden, USFS_S-S
Calystegia felix	lucky morning-glory	Dicots	PDCON040P0	10	2	None	None	G1Q	S1	1B.1	null
Carolella busckana	Busck's gallmoth	Insects	IILEM2X090	4	1	None	None	G1G3	SH	null	null
Castilleja gleasoni	Mt. Gleason paintbrush	Dicots	PDSCR0D140	33	16	None	Rare	G2	S2	1B.2	SB_CalBC California/I Santa Ana Garden, USFS_S-S
Catostomus santaanae	Santa Ana sucker	Fish	AFCJC02190	28	2	Threatened	None	G1	S1	null	AFS_TH-Threatene IUCN_VU-Vulnerable
Centromadia parryi ssp. australis	southern tarplant	Dicots	PDAST4R0P4	94	6	None	None	G3T2	S2	1B.1	SB_CalBC California/I Santa Ana Garden, Si San Diego CRES Nat Seed Bank SB_SBBG Barbara B Garden
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	PDAST4R0R4	126	1	None	None	G3G4T2	S2	1B.1	SB_CalBC California/I Santa Ana Garden
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Dicots	PDPGN040J1	21	3	None	Endangered	G2T1	S1	1B.1	SB_CalBC California/I Santa Ana Garden, USFS_S-S
Chorizanthe parryi var. parryi	Parry's spineflower	Dicots	PDPGN040J2	150	3	None	None	G3T2	S2	1B.1	BLM_S-Se SB_CalBC California/I Santa Ana Garden, USFS_S-S
Cladium californicum	California saw-grass	Monocots	PMCYP04010	13	1	None	None	G4	S2	2B.2	SB_CalBC California/I Santa Ana Garden, USFS_S-S
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	1	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Se NABCI_RV Watch List USFS_S-S USFWS_E of Conserv Concern
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	3	None	None	G3G4	S2	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S WBWG_H Priority

Coturnicops noveboracensis	yellow rail	Birds	ABNME01010	45	1	None	None	G4	S1S2	null	CDFW_S-S Species of Concern, I Least Con NABCI_RV Watch List USFS_S-S USFWS_E of Conserv Concern
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Dicots	PDCUS01111	6	1	None	None	G5T4?	SH	2B.2	null
Cypseloides niger	black swift	Birds	ABNUA01010	46	1	None	None	G4	S2	null	CDFW_S-S Species of Concern, I Least Con NABCI_YV Yellow Wa USFWS_E of Conserv Concern
Diadophis punctatus modestus	San Bernardino ringneck snake	Reptiles	ARADB10015	14	1	None	None	G5T2T3	S2?	null	USFS_S-S
Dodecahema leptoceras	slender-horned spineflower	Dicots	PDPGN0V010	41	6	Endangered	Endangered	G1	S1	1B.1	SB_CalBG California/ Santa Ana Garden
Dudleya multicaulis	many-stemmed dudleya	Dicots	PDCRA040H0	154	2	None	None	G2	S2	1B.2	SB_CalBG California/ Santa Ana Garden, USFS_S-S
Empidonax traillii extimus	southwestern willow flycatcher	Birds	ABPAE33043	70	2	Endangered	Endangered	G5T2	S1	null	NABCI_RV Watch List
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1398	13	None	None	G3G4	S3	null	BLM_S-Se CDFW_S-S Species of Concern, IUCN_VU- Vulnerable USFS_S-S
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	9	None	None	G5T4	S3S4	null	BLM_S-Se CDFW_S-S Species of Concern, WBGW_H Priority

<i>Falco peregrinus anatum</i>	American peregrine falcon	Birds	ABNKD06071	58	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Se CDFW_FF Protected, USFWS_E of Conserv Concern
<i>Galium grande</i>	San Gabriel bedstraw	Dicots	PDRUB0N0V0	9	3	None	None	G1	S1	1B.2	SB_CalBC California/I Santa Ana Garden, USFS_S-S
<i>Gila orcuttii</i>	arroyo chub	Fish	AFCJB13120	49	1	None	None	G2	S2	null	AFS_VU- Vulnerable CDFW_SS Species of Concern, USFS_S-S
<i>Glyptostoma gabrielense</i>	San Gabriel chestnut	Mollusks	IMGASB1010	24	15	None	None	G2	S2	null	null
<i>Gonidea angulata</i>	western ridged mussel	Mollusks	IMBIV19010	157	2	None	None	G3	S1S2	null	null
<i>Helianthus nuttallii ssp. parishii</i>	Los Angeles sunflower	Dicots	PDAST4N102	7	3	None	None	G5TX	SX	1A	null
<i>Horkelia cuneata var. puberula</i>	mesa horkelia	Dicots	PDROS0W045	103	14	None	None	G4T1	S1	1B.1	USFS_S-S
<i>Icteria virens</i>	yellow-breasted chat	Birds	ABPBX24010	100	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con
<i>Imperata brevifolia</i>	California satintail	Monocots	PMPOA3D020	32	1	None	None	G4	S3	2B.1	SB_CalBC California/I Santa Ana Garden, S Santa Bart Botanic G USFS_S-S
<i>Lasionycteris noctivagans</i>	silver-haired bat	Mammals	AMACC02010	139	1	None	None	G5	S3S4	null	IUCN_LC- Concern, WBWG_M Priority
<i>Lasiurus blossevillii</i>	western red bat	Mammals	AMACC05060	128	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_H Priority
<i>Lasiurus cinereus</i>	hoary bat	Mammals	AMACC05030	238	10	None	None	G5	S4	null	IUCN_LC- Concern, WBWG_M Priority
<i>Lasiurus xanthinus</i>	western yellow bat	Mammals	AMACC05070	58	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_H Priority
<i>Lasthenia glabrata ssp. coulteri</i>	Coulter's goldfields	Dicots	PDAST5L0A1	111	1	None	None	G4T2	S2	1B.1	BLM_S-Se SB_CalBC

											California/ Santa Ana Garden, S Santa Bart Botanic Ga
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	Dicots	PDBRA1M114	142	5	None	None	G5T3	S3	4.3	null
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	Mammals	AMAEB03051	103	1	None	None	G5T3T4	S3S4	null	CDFW_SS Species of Concern
<i>Linanthus concinnus</i>	San Gabriel linanthus	Dicots	PDPLM090D0	43	4	None	None	G2	S2	1B.2	SB_CalBG California/ Santa Ana Garden, USFS_S-S
<i>Malacothamnus davidsonii</i>	Davidson's bush-mallow	Dicots	PDMAL0Q040	83	36	None	None	G2	S2	1B.2	SB_CalBG California/ Santa Ana Garden
<i>Microtus californicus stephensi</i>	south coast marsh vole	Mammals	AMAFF11035	7	1	None	None	G5T1T2	S1S2	null	CDFW_SS Species of Concern
<i>Muhlenbergia californica</i>	California muhly	Monocots	PMPOA480A0	5	1	None	None	G4	S4	4.3	null
<i>Nasturtium gambelii</i>	Gambel's water cress	Dicots	PDBRA270V0	13	1	Endangered	Threatened	G1	S1	1B.1	SB_CalBG California/ Santa Ana Garden, S Santa Bart Botanic Ga
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	Dicots	PDPLM0C0Q0	61	1	None	None	G2	S2	1B.2	null
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	Mammals	AMAFF08041	132	2	None	None	G5T3T4	S3S4	null	CDFW_SS Species of Concern
<i>Nyctinomops macrotis</i>	big free-tailed bat	Mammals	AMACD04020	32	2	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_M Medium-H Priority
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	Mammals	AMAFF06022	28	2	None	None	G5T3	S3	null	CDFW_SS Species of Concern
Open Engelmann Oak Woodland	Open Engelmann Oak Woodland	Woodland	CTT71181CA	2	2	None	None	G2	S2.2	null	null
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	Dicots	PDCAC0D053	199	7	None	None	G5T3	S3	1B.2	BLM_S-Se SB_CalBG California/ Santa Ana Garden, USFS_S-S
<i>Orobanche valida</i> ssp. <i>valida</i>	Rock Creek broomrape	Dicots	PDORO040G2	12	1	None	None	G4T2	S2	1B.2	USFS_S-S

Palaeoxenus dohrni	Dohrn's elegant eucnemid beetle	Insects	IICOL5K010	3	1	None	None	G3?	S3?	null	null
Phacelia stellaris	Brand's star phacelia	Dicots	PDHYD0C510	15	1	None	None	G1	S1	1B.1	SB_CalBG California/Santa Ana Garden
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	784	21	None	None	G3G4	S3S4	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con
Poliophtila californica californica	coastal California gnatcatcher	Birds	ABPBJ08081	883	16	Threatened	None	G4G5T2Q	S2	null	CDFW_SS Species of Concern, NABCI_Yv Yellow Wa
Pseudognaphalium leucocephalum	white rabbit-tobacco	Dicots	PDAST440C0	62	6	None	None	G4	S2	2B.2	null
Quercus dumosa	Nuttall's scrub oak	Dicots	PDFAG050D0	180	1	None	None	G3	S3	1B.1	BLM_S-Se SB_CRES Diego Zoo Native Ger Bank, USFS_S-S
Rana muscosa	southern mountain yellow-legged frog	Amphibians	AAABH01330	186	14	Endangered	Endangered	G1	S1	null	CDFW_WI List, IUCN, Endangere USFS_S-S
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	Fish	AFCJB3705K	13	1	None	None	G5T1	S1	null	AFS_TH-Threatene CDFW_SS Species of Concern, USFS_S-S
Ribes divaricatum var. parishii	Parish's gooseberry	Dicots	PDGRO020F3	5	4	None	None	G5TX	SX	1A	null
Riparia riparia	bank swallow	Birds	ABPAU08010	298	2	None	Threatened	G5	S2	null	BLM_S-Se IUCN_LC-Concern
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	Scrub	CTT32720CA	30	7	None	None	G1	S1.1	null	null
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Dicots	PDLAM1U0A1	43	1	None	None	G4T3	S3	1B.2	SB_CalBG California/Santa Ana Garden, USFS_S-S
Setophaga petechia	yellow warbler	Birds	ABPBX03010	78	2	None	None	G5	S3S4	null	CDFW_SS Species of Concern, USFWS_E of Conserv Concern
Sidalcea neomexicana	salt spring checkerbloom	Dicots	PDMAL110J0	30	3	None	None	G4	S2	2B.2	USFS_S-S

Southern California Arroyo Chub/Santa Ana Sucker Stream	Southern California Arroyo Chub/Santa Ana Sucker Stream	Inland Waters	CARE2330CA	4	1	None	None	GNR	SNR	null	null
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	33	None	None	G4	S4	null	null
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	4	None	None	G3	S3.2	null	null
Southern Mixed Riparian Forest	Southern Mixed Riparian Forest	Riparian	CTT61340CA	14	4	None	None	G2	S2.1	null	null
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	52	None	None	G4	S4	null	null
Spea hammondi	western spadefoot	Amphibians	AAABF02020	1409	6	None	None	G3	S3	null	BLM_S-Se CDFW_SS Species of Concern, IUCN_NT-Threatene
Symphyotrichum defoliatum	San Bernardino aster	Dicots	PDASTE80C0	102	2	None	None	G2	S2	1B.2	SB_CalBC California/I Santa Ana Garden, S San Diego CRES Nat Seed Bank USFS_S-S
Symphyotrichum greatae	Greata's aster	Dicots	PDASTE80U0	56	21	None	None	G2	S2	1B.3	SB_CalBC California/I Santa Ana Garden
Taricha torosa	Coast Range newt	Amphibians	AAAAF02032	88	3	None	None	G4	S4	null	CDFW_SS Species of Concern
Taxidea taxus	American badger	Mammals	AMAJF04010	594	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con

Thamnophis hammondi	two-striped gartersnake	Reptiles	ARADB36160	184	7	None	None	G4	S3S4	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Ferns	PPTHE05192	27	3	None	None	G5T3	S2	2B.2	USFS_S-S
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	503	19	Endangered	Endangered	G5T2	S2	null	IUCN_NT- Threatene NABCI_YV Yellow Wa
Walnut Forest	Walnut Forest	Forest	CTT81600CA	6	1	None	None	G1	S1.1	null	null



*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

75 matches found. [Click on scientific name for details](#)

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], FESA is one of [Endangered, Threatened, Cand
CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3411833, 3411832, 3411831,
3411822, 3411821, 3411813, 3411812 and 3411811;
Lifform is one of [Tree, Shrub, Leaf succulent, Herb, Vine, Stem succulent, Lichen, Moss, Liverwort],
Duration is one of [ann, per, ephem],
Bloom Time is one of [January, February, March, April, May, June, July, August, September, October, Nove

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthoscyphus parishii var. parishii	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	4.2	S3S4	G4? T3T4
Arctostaphylos glandulosa ssp. gabrielensis	San Gabriel manzanita	Ericaceae	perennial evergreen shrub	Mar	1B.2	S3	G5T3
Arctostaphylos parryana ssp. tumescens	interior manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	4.3	S3S4	G4T3T4
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
Astragalus pycnostachyus var. lanosissimus	Ventura marsh milk-vetch	Fabaceae	perennial herb	(Jun)Aug-Oct	1B.1	S1	G2T1
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1

<u>Berberis nevinii</u>	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar- Jun	1B.1	S1	G1
<u>Calochortus catalinae</u>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar- Jun	4.2	S3S4	G3G4
<u>Calochortus clavatus</u> <u>var. gracilis</u>	slender mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun (Nov)	1B.2	S2S3	G4T2T3
<u>Calochortus palmeri</u> <u>var. palmeri</u>	Palmer's mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	1B.2	S2	G3T2
<u>Calochortus plummerae</u>	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
<u>Calochortus weedii var.</u> <u>intermedius</u>	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
<u>Calystegia felix</u>	lucky morning- glory	Convolvulaceae	annual rhizomatous herb	Mar-Sep	1B.1	S1	G1Q
<u>Camissoniopsis lewisii</u>	Lewis' evening- primrose	Onagraceae	annual herb	Mar-May (Jun)	3	S4	G4
<u>Castilleja gleasoni</u>	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun (Sep)	1B.2	S2	G2
<u>Castilleja plagiotoma</u>	Mojave paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	4.3	S4	G4
<u>Centromadia parryi ssp.</u> <u>australis</u>	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
<u>Centromadia pungens</u> <u>ssp. laevis</u>	smooth tarplant	Asteraceae	annual herb	Apr-Sep	1B.1	S2	G3G4T2
<u>Chorizanthe parryi var.</u> <u>fernandina</u>	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
<u>Chorizanthe parryi var.</u> <u>parryi</u>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2
<u>Cladium californicum</u>	California sawgrass	Cyperaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G4
<u>Clinopodium</u> <u>mimuloides</u>	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	4.2	S3	G3
<u>Convolvulus simulans</u>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
<u>Cuscuta obtusiflora var.</u> <u>glandulosa</u>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
<u>Diplacus johnstonii</u>	Johnston's monkeyflower	Phrymaceae	annual herb	(Apr)May- Aug	4.3	S4	G4
<u>Dodecahema</u> <u>leptoceras</u>	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
<u>Dudleya multicaulis</u>	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
<u>Erythranthe diffusa</u>	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	4.3	S3	G4
<u>Frasera neglecta</u>	pine green- gentian	Gentianaceae	perennial herb	May-Jul	4.3	S4	G4
<u>Galium angustifolium</u> <u>ssp. gabrielense</u>	San Antonio Canyon bedstraw	Rubiaceae	perennial herb	Apr-Aug	4.3	S3	G5T3

<u>Galium grande</u>	San Gabriel bedstraw	Rubiaceae	perennial deciduous shrub	Jan-Jul	1B.2	S1	G1
<u>Galium jepsonii</u>	Jepson's bedstraw	Rubiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G3
<u>Galium johnstonii</u>	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	4.3	S4	G4
<u>Helianthus nuttallii ssp. parishii</u>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1A	SH	G5TH
<u>Heuchera caespitosa</u>	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	4.3	S3	G3
<u>Hordeum intercedens</u>	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
<u>Horkelia cuneata var. puberula</u>	mesa horkelia	Rosaceae	perennial herb	Feb-Jul (Sep)	1B.1	S1	G4T1
<u>Hulsea vestita ssp. gabrielensis</u>	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	4.3	S3	G5T3
<u>Imperata brevifolia</u>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
<u>Juglans californica</u>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
<u>Lasthenia glabrata ssp. coulteri</u>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
<u>Lepechinia fragrans</u>	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	4.2	S3	G3
<u>Lepidium virginicum var. robinsonii</u>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
<u>Lilium humboldtii ssp. ocellatum</u>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul (Aug)	4.2	S4?	G4T4?
<u>Linanthus concinnus</u>	San Gabriel linanthus	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
<u>Linanthus orcuttii</u>	Orcutt's linanthus	Polemoniaceae	annual herb	May-Jun	1B.3	S2	G3
<u>Lupinus peirsonii</u>	Peirson's lupine	Fabaceae	perennial herb	Apr-Jun	1B.3	S3	G3
<u>Malacothamnus davidsonii</u>	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
<u>Monardella australis ssp. cinerea</u>	gray monardella	Lamiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G4T3
<u>Muhlenbergia californica</u>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	4.3	S4	G4
<u>Nasturtium gambelii</u>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
<u>Navarretia prostrata</u>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
<u>Opuntia basilaris var. brachyclada</u>	short-joint beavertail	Cactaceae	perennial stem succulent	Apr-Jun (Aug)	1B.2	S3	G5T3
<u>Orobanche valida ssp. valida</u>	Rock Creek broomrape	Orobanchaceae	perennial herb (parasitic)	May-Sep	1B.2	S2	G4T2
<u>Phacelia hubbii</u>	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4

Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	4.3	S4	G4Q
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr (May-Aug)	1B.1	S3	G3
Quercus durata var. gabrielensis	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	4.2	S3	G4T3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
Ribes divaricatum var. parishii	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	1A	SX	G5TX
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul (Aug)	4.2	S4	G4
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	4.3	S4	G4
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Senecio astephanus	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	4.3	S3	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep (Oct)	4.3	S4	G4
Spermolepis lateriflora	western bristly scaleseed	Apiaceae	annual herb	Mar-Apr	2A	SH	G5
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov (Dec)	1B.2	S2	G2
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	2B.2	S2	G5T3

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Questions and Comments

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IPaC

U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California



Local office

Carlsbad Fish And Wildlife Office

☎ (760) 431-9440

📠 (760) 431-5901

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

<http://www.fws.gov/carlsbad/>

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor <i>Gymnogyps californianus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered

Flowering Plants

NAME	STATUS
Braunton's Milk-vetch <i>Astragalus brauntonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5674	Endangered
Nevin's Barberry <i>Berberis nevinii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8025	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservati>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that

occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird *Selasphorus sasin*

Breeds Feb 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9637>

Bald Eagle *Haliaeetus leucocephalus*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

- Black Swift** *Cypseloides niger* Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/8878>
- Black-chinned Sparrow** *Spizella atrogularis* Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9447>
- California Spotted Owl** *Strix occidentalis occidentalis* Breeds Mar 10 to Jun 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/7266>
- California Thrasher** *Toxostoma redivivum* Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
- Common Yellowthroat** *Geothlypis trichas sinuosa* Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/2084>
- Costa's Hummingbird** *Calypte costae* Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/9470>
- Golden Eagle** *Aquila chrysaetos* Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<https://ecos.fws.gov/ecp/species/1680>

- Lawrence's Goldfinch *Carduelis lawrencei* Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9464>
- Lewis's Woodpecker *Melanerpes lewis* Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9408>
- Nuttall's Woodpecker *Picoides nuttallii* Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/9410>
- Oak Titmouse *Baeolophus inornatus* Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9656>
- Rufous Hummingbird *Selasphorus rufus* Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/8002>
- Song Sparrow *Melospiza melodia* Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
- Spotted Towhee *Pipilo maculatus clementae* Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/4243>

Whimbrel *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

White Headed Woodpecker *Picoides albolarvatus*

Breeds May 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9411>

Wrentit *Chamaea fasciata*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by

the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

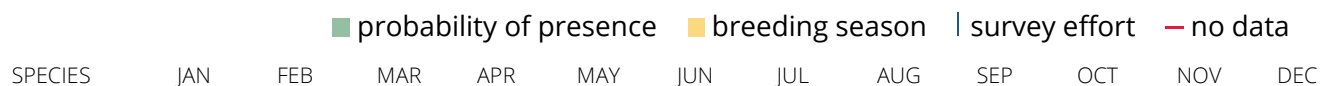
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





NOT FOR CONSULTATION

California Spotted Owl
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

California Thrasher
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Common Yellowthroat
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Costa's Hummingbird
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)





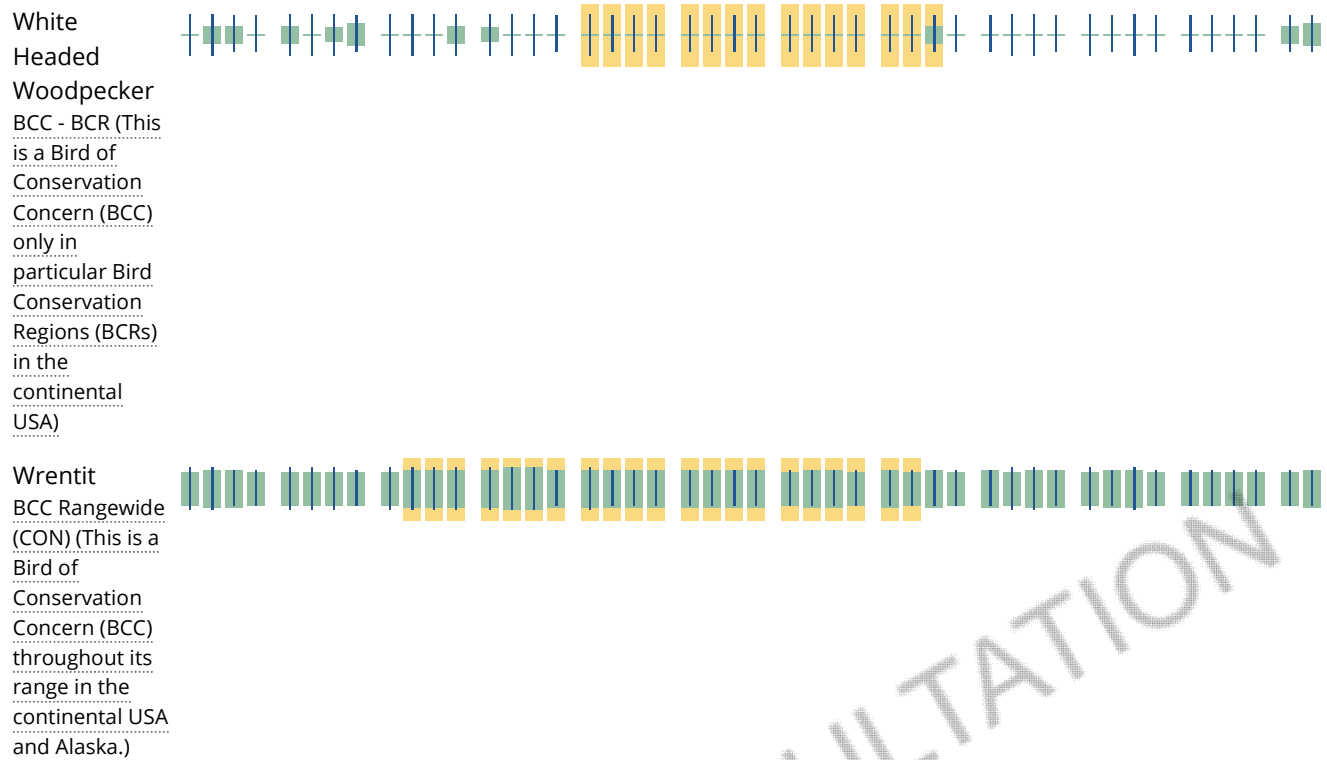
Oak Titmouse
 BCC Rangelwide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental USA
 and Alaska.)

Rufous
 Hummingbird
 BCC Rangelwide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental USA
 and Alaska.)

Song Sparrow
 BCC - BCR (This
 is a Bird of
 Conservation
 Concern (BCC)
 only in
 particular Bird
 Conservation
 Regions (BCRs)
 in the
 continental
 USA)

Spotted
 Towhee
 BCC - BCR (This
 is a Bird of
 Conservation
 Concern (BCC)
 only in
 particular Bird
 Conservation
 Regions (BCRs)
 in the
 continental
 USA)

Whimbrel
 BCC Rangelwide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental USA
 and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

[PUBHx](#)

RIVERINE

[R4SBCx](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

BROOKSIDE GOLF COURSE IMPROVEMENTS PROJECT

Tree Report

Prepared for

George Cunningham

Rose Bowl Operating Company

November 2020



BROOKSIDE GOLF COURSE IMPROVEMENTS PROJECT

Tree Report

Prepared for
George Cunningham
Rose Bowl Operating Company

November 2020

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BROOKSIDE GOLF COURSE IMPROVEMENT PROJECT

Tree Report

Summary

- **Number of protected trees surveyed81**
 - Public trees81
 - Native trees15
 - Specimen trees.....6
- **Number of protected trees that could be removed.....47**
 - Specimen trees.....4
 - Native trees.....10
 - Public trees33
- **Number of protected trees that could be encroached16**
 - Specimen trees.....0
 - Native trees.....4
 - Public trees12
- **Number of protected trees that could be avoided18**
 - Specimen trees.....2
 - Native trees.....1
 - Public trees15

BROOKSIDE GOLF COURSE IMPROVEMENT PROJECT

Tree Report

Introduction

On behalf of the Rose Bowl Operating Company (RBOC), Environmental Science Associates (ESA) conducted a tree survey at the proposed site of the Brookside Golf Course Improvements Project (Project), located in the City of Pasadena (City), Los Angeles County, California. The survey was conducted to document protected trees as defined in the City of Pasadena Code of Ordinances (Pasadena, 2018) that are within the proposed grading limits of the Project, including those that may be removed, encroached, or avoided by the project.

The City's Trees and Tree Protection Ordinance (Title 8, Chapter 8.52) defines a Protected tree as "a native, specimen, landmark, landmark-eligible, mature (except for the trees in RS or RM-12 Zones), or public tree". Furthermore, it defines native trees as:

"any tree with a trunk more than 8 inches in diameter at a height of 4 ½ feet above natural grade that is one of the following species: Quercus agrifolia (coast live oak), Quercus engelmannii (Engelmann oak), Quercus chrysolepis (canyon oak), Platanus racemosa (California sycamore), Juglans californica (California walnut), Quercus berberidifolia (scrub oak), Quercus lobata (valley oak), Umbellularia californica (California bay), Populus fremontii (cottonwood), Alnus rhombifolia (California alder), Populus trichocarpa (black cottonwood), Salix lasiolepis (arroyo willow), and Aesculus californica (California buckeye)."

In accordance with the Ordinance, public trees are defined as "a tree located in a place or area under ownership or control of the city including but without limitation streets, parkways, open space, parkland, and including city owned property under the operational control of another entity by virtue of a lease, license, operating or other agreement". All trees located within the boundaries of the Brookside Golf Course are considered public trees and are therefore protected. Mature trees are defined as "an otherwise non-protected tree with a diameter-at-breast-height (DBH) of 19 inches or greater". The City also provides a list¹ of tree species and criteria of trees that possess distinctive form, size or age at certain trunk diameters or heights, herein referred to as 'specimen' trees. Specimen trees are also considered protected.

¹ https://www.cityofpasadena.net/wp-content/uploads/sites/52/2017/06/TPO_6-Specimen-Tree-List.pdf

Existing Conditions

The Project site is located at the Brookside Golf Course, which is within the Central Arroyo Seco area of Arroyo Seco Canyon in the western portion of the City (See **Figure 1 – Project Vicinity** and **Figure 2 – Project Location**). Central Arroyo Seco is generally bounded by the Colorado Street Bridge to the south, Arroyo Boulevard and Arroyo Terrace to the east, Interstate-210 to the north/east, and Linda Vista Avenue to the west. Uses surrounding the golf course include residential uses to the west and east, Interstate-210 to the north, and the Rose Bowl to the south. Project site is surrounded by the golf course to the north, east and south, and the Arroyo Seco abuts its western boundary. The Arroyo Seco is a concrete-lined channel that is a major tributary of the Los Angeles River. The golf course is a contributor to the Pasadena Arroyo Parks and Recreation District, which is loosely defined as the central and lower Arroyo and is listed on the National Register of Historic Places (NRHP) for its cultural landscape.

Project Description

The Project proposes to relocate and expand the existing driving range and construct a new 36-hole miniature golf facility. The expanded driving range and new miniature golf facility would generally be located in the same area as the existing driving range, which is currently located between the concrete channeled Arroyo Seco to the west, the Brookside Clubhouse to the east, and the C.W. Koiner Course to the north and south. The proposed expansion of the driving range would increase the number of hitting bays from 20 to 60. Brookside Golf Course would remain a championship layout and the course reduction would be designed to improve the pace of play.

A previous tree survey was conducted for the entire Brookside Golf Course by Davey Resource Group in 2016 and provided detailed information for trees within the Project including tree number and species. Those trees were reassessed and are included in this report.

Methods

ESA Arborist Douglas Gordon-Blackwood (See **Appendix C – Resume**) conducted the field survey on October 5 and 6, 2020. During the field survey, the area identified by RBOC as the grading limits (See **Figure 2**) was walked and a Global Positioning System with sub-meter accuracy (Eos Arrow 100 Global Navigation Satellite System) unit used in conjunction with ESRI's Collector for Arc GIS (Classic) application to collect location and survey data. At the discretion of RBOC, previously affixed tree tags and numbering were utilized in order to remain consistent with previous tree inventories conducted by Davey Resource Group (2016), Arborjet and other unknown arborists. A Canon EOS Rebel T3i DSLR Camera was used to take photographs of each surveyed tree.



SOURCE: ESRI, 2020; ESA, 2020

Brookside Golf Course Improvements Project



Figure 1
Regional Location



SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 2
Project Location

Data collected for all protected trees included the tree species and physical characteristics. Survey data for each tree is provided in **Appendix A –Tree Measurements** and photographs of each tree are provided in **Appendix B – Tree Photographs**. The following physical condition and characteristic data was collected for each tree:

Physical Characteristics

- Diameter at Breast Height (DBH) – measured four feet, six inches from the base of the tree using a forester’s diameter-equivalent tape. For Palms, Height-to-brown-trunk (base of lowest frond) is measured in place of DBH.
- Canopy spread: The canopy spread from the trunk to the dripline in eight (8) directions (N, NE, E, SE, S, SW, W, NW).
- Height – Measured using a Nikon Forestry Pro Laser hypsometer.
- Balance and symmetry of the tree based on the crown radius measurements and whether the tree leans or is otherwise unstable.

Physical Condition

- Identification of damage caused by pathogens or insect pests, by natural causes such as lightning, or by human activity (such as golf ball damage).
- Evaluation of vigor based on such parameters as amount of new growth, leaf color, abnormal bark, dead wood, evidence of wilt, excessive necrosis or leaf chlorosis, thinning of crown, etc.
- Assessment of the overall health of the tree based on the evaluation of vigor, presence of damage, and comparison to the typical archetype tree of the same species.
- Evaluation of vigor based on such parameters as amount of new growth, leaf color, abnormal bark, dead wood, evidence of wilt, excessive necrosis or leaf chlorosis, thinning of crown, etc.

Rating

For each tree, a subjective alphabetical rank of “A” through “F” was assigned for health, vigor, balance and aesthetic. Ranks were based on the criteria described below:

- “A” = Very Healthy/Excellent: A healthy and vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease, or pest infestation. With regards to balance and aesthetics, trunks are straight and canopies well balanced and the tree exemplifies the ideal archetype for the species.
- “B” = Healthy/Good: A healthy and vigorous tree with minor visible signs of stress, disease, and/or pest infestation. Some maintenance measures may need to be implemented, such as pruning of dead wood or broken branches. Tree may lean slightly, canopies may not be evenly balanced, or the tree may otherwise be marginally challenged aesthetically.
- “C” = Average Health/Fair: Although healthy in overall appearance, there is abnormal amount of stress or disease/insect infestation, and a substantial amount of maintenance may be needed. The trunk may be growing at a more substantial angle or the canopy may have “holes” or be further out of balance.

- “D” = Dying/Poor: A tree that may be exhibiting substantially more stress, disease, or insect damage than what is expected for the species. The tree may be in a state of rapid decline, and may show various signs of dieback, necrosis, or other symptoms caused by pathogens or insect pests. The tree may lean significantly and the canopy is far out of balance.
- “F” = Dead/Very Poor: This tree has no foliage and exhibits no sign of life or vigor. Tree may be prone on the ground or otherwise severely aesthetically compromised.

Scope of Work Limitations

Measurement estimates were made for 6 trees (#’s 58, 65, 71, 85, 87, and 88) located within the driving range, because the driving range was open during the assessments and the arborist was unable to access these trees safely.

Results

Eighty-one (81) trees were surveyed. Fifteen (15) trees are native trees that include three coast live oaks (*Quercus agrifolia*; trees 91, 109, & 179), three California bay laurels (*Umbellularia californica*; tree’s 115, 116, & 160), eight California sycamores (*Platanus racemosa*; tree’s 85, 87, 88, 89, 90, 103, 165, & 1064), and one white alder (*Alnus rhombifolia*; tree 111). Six (6) trees are specimen trees that include one American sweetgum (*Liquidambar styraciflua*; tree 69), one red ironbark (*Eucalyptus sideroxylon*; tree 84), two Sydney red gums (*Angophora costata*; trees 105 & 110), and two Italian stone pines (*Pinus pinea*; trees 167 and 177).

All of the surveyed trees are considered ‘public trees’ that include: one Mexican fan palm (*Washingtonia robusta*; tree 102), twenty-seven (27) Peruvian pepper trees (*Schinus molle*; tree’s 55, 56, 57, 59, 60, 61, 62, 63, 64, 66, 67, 68, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 86, and 174), five (5) shamel ash trees (*Fraxinus uhdei*; tree’s 106, 107, 108, 173, 1051), one Chinese privet (*Ligustrum lucidum*; tree 104), five (5) holly oaks (*Quercus ilex*; tree’s 65, 127, 134, 161, and 162), six (6) Canary Island pines (*Pinus canariensis*; tree #168, 169, 170, 172, 175, and 178), two (2) American sweetgums (tree’s 112 and 164), one Chinese elm (*Ulmus parvifolia*; tree 1556), four (4) red ironbark (tree’s 150, 156, 157, and 158), two (2) carob trees (*Ceratonia siliqua*; tree’s 148 and 152), two (2) swamp mahogany trees (*Eucalyptus robusta*; tree’s 113 and 114), one Japanese yew (*Podocarpus macrophyllus*; tree 71) and two (2) white paperbark trees (*Melaleuca quinquenervia*; tree’s 58 and 159). The locations of the trees are provided in **Figure 3 – Tree Locations** and the tree canopies are provided in **Figure 4 – Tree Canopies**.

As shown in **Table 1**, forty-seven (47) trees are located within the grading limits of the Project footprint and could be removed as a result of the project (tree’s 58, 61, 63, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 102, 103, 104, 105, 106, 107, 108, 109, 110, 157, 158, 169, 160, 161, 162, 163, 164, 1051, and 1064). Sixteen (16) trees will be encroached by construction activities (tree’s 55, 59, 60, 66, 89, 112, 114, 115, 116, 127, 134, 148, 152, 156, 179, and 1556). Eighteen (18) trees will be completely avoided (tree’s 56, 57, 62, 64, 111, 113, 150, 167, 168, 169, 170, 171, 172, 173, 174, 175, 177, and 178). Of the 81 trees inventoried, 93 percent, or 76 trees, were rated to be in excellent to fair condition

(A, B, or C health grade). This includes ten trees in excellent (A) condition, 32 trees in good (B) condition and 34 in fair (C) condition. In addition, 5 trees were rated in poor (D) condition.

**TABLE 1
TREE IMPACT SUMMARY**

Removals	Encroachments	Avoided
58, 61, 63, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 102, 103, 104, 105, 106, 107, 108, 109, 110, 157, 158, 169, 160, 161, 162, 163, 164, 1051, and 1064	55, 59, 60, 66, 89, 112, 114, 115, 116, 127, 134, 148, 152, 156, 179, and 1556	56, 57, 62, 64, 111, 113, 150, 167, 168, 169, 170, 171, 172, 173, 174, 175, 177, and 178



SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 3
Tree Locations





SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 4
Tree Canopies



SOURCE: RBOC; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 5
 Tree Encroachments

Discussion

All 81 of the trees that were surveyed are considered protected trees in accordance with the City's ordinance. Based on the current project description which is subject to change, forty-seven (47) of the protected trees are could require removal to accommodate project construction, sixteen (16) could be encroached upon to accommodate project construction, and eighteen (18) protected trees within the survey area could be avoided. In addition, trees qualifying as specimen or native also exist within the grading limits of the project and are included in the aforementioned trees that could be removed, encroached and avoided.

The City Manager is responsible for the review of this tree report, and will make determinations on public tree removal based upon tree reports prepared by certified arborists, other relevant facts, and upon established public tree removal criteria and review development and construction plans as they affect mature, landmark, landmark-eligible, native, public and specimen trees. If trees are to be removed as a result of the Project, the City Manager gives at least 10-days' notice to abutting property owners prior to the removal. Projects that would result in the removal of 3 or more public trees, notification will be provided to the city council, the design commission, and any neighborhood organizations in such area which are known. Tree replacements or alternative solutions (based on discretionary approval) will be provided after consultation with the City Manager and the design commission.

The City Manager can deny permits for removal of protected trees, including native or specimen trees, unless there is (1) a public, health or safety benefit from the removal of the tree, (2) the tree is deemed dead/dying and determined that it is not likely to survive, (3) there are objective features of the tree that make the tree not suitable for protections (such as invasive, damaging or nuisance trees), (4) the tree represents a substantial financial/recreational hardship to the property owner, (5) the tree injury/removal would constitute a taking of the underlying real property or (6) the corresponding landscape design plan will result in a greater canopy coverage than the tree being removed (within a reasonable time frame). The proposed Project could be considered a 'public benefit' (as defined within Code 8.52) in that it provides upgraded recreational areas and facilities which would broaden the usability of the site for the general public.

Based on the Project as described in this report (which is subject to refinement), it could result in the removal of 47 protected trees and the encroachment of 16 protected trees. These activities have the potential to negatively affect not only the encroached trees, but also other trees present in the vicinity of construction activities. For example, Project-related activities such as excavation, trenching, soil compaction, change of grade, drainage, pruning, mechanical damage from construction equipment, landscaping, and irrigation may negatively affect the root system of trees in the vicinity without implementing protective measures. The guidelines provided in the City of Pasadena Tree Protection Guidelines (**Appendix D – City of Pasadena Tree Protection Guidelines**) should be implemented to ensure that all preserved trees within or adjacent to the property will be protected during construction activities, as well as in perpetuity following completion of the Project.

Certification of Performance

I, Douglas Gordon-Blackwood, certify:

- That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately.
- That I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved;
- That the analysis, opinions, and conclusions stated herein are my own;
- That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices;
- That no one provided significant professional assistance to the consultant, except as indicated within the report;
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party.

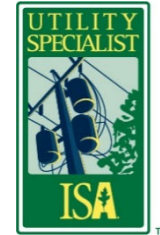
I further certify that I am a member of the American Society of Consulting Arborists, Registered Consulting Arborist #689, and acknowledge, accept, and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Certified Arborist, and have been involved in the practice of arboriculture and the study of trees for over 13 years.

Signed:



Date: 11/9/2020

Douglas Gordon-Blackwood
Registered Consulting Arborist, #689
Certified Arborist, WE-11726-AU
Qualified Tree Risk Assessor



asca | **RCA**
 Registered Consulting Arborist®

This report comprises a total of 13 pages, plus appendices. Unauthorized separation or removal of any portion of this report deems it invalid as a whole.

Conditions represented in this report are limited to the inventory date and time. Rating for health and structure do not constitute a health or structural guarantee beyond that date. Risk assessments were not performed for the purposes of this report.

Appendix A

Tree Measurements

Appendix A – Tree Measurements

Tree Number ¹	Common Name	Latin Name	Latitude	Longitude	Protected Tree Classification ²	DBH ³	Height ⁵	Canopy North ⁶	Canopy NorthWest	Canopy West	Canopy SouthWest	Canopy South	Canopy SouthEast	Canopy East	Canopy NorthEast	Health	Aesthetics	Balance	Vigor	Comments	Soil Condition
55	Peruvian pepper	<i>Schinus molle</i>	34.1646235	-118.1680865	P	15.0	22	5	11	23	19	16	12	11	6	B	C	B	B	exposed damaged roots	normal
56	Peruvian pepper	<i>Schinus molle</i>	34.16462881	-118.1682396	P	13.7	25	11	12	13	15	15	16	12	13	B	B	B	C	slight lean, minor root damage	normal
57	Peruvian pepper	<i>Schinus molle</i>	34.16465072	-118.168289	P	14.7	20	10	8	13	12	12	8	9	8	C	C	D	C	strong lean, exposed damaged roots, crown raised and lion tailed	normal
58	white paperbark tree	<i>Melaleuca quinquinervia</i>	34.16528314	-118.1682843	P, M	21	24	3	6	13	6	3	2	2	2	C	C	D	C	severe golf ball damage, topped, damaged exposed roots, measurements estimated due to location on active driving range	normal
59	Peruvian pepper	<i>Schinus molle</i>	34.16462272	-118.1683236	P	10.5	20	8	13	15	15	13	10	4	4	B	C	C	C	self corrected lean, root damage, exposed roots, basal sprouting	normal
60	Peruvian pepper	<i>Schinus molle</i>	34.1646015	-118.1682719	P	8.0	13	1	1	18	16	5	1	1	1	C	C	D	C	strong lean to w-sw, basal sprouting, lion tailed, exposed damaged roots, decay at base	normal
61	Peruvian pepper	<i>Schinus molle</i>	34.164594	-118.1683748	P	15.6	30	11	12	10	14	18	15	12	8	B	B	C	C	root damage, self corrected lean, basal sprouting,	normal
62	Peruvian pepper	<i>Schinus molle</i>	34.16460405	-118.1684377	P	13.1	26	10	12	13	16	15	14	12	13	C	B	B	C	damaged roots with decay, crown raised, recommend decay assessment	normal
63	Peruvian pepper	<i>Schinus molle</i>	34.1647125	-118.1684683	P	14.5	25	5	11	15	17	17	11	14	6	C	C	C	B	basal sprouting, lopsided due to presence of driving range fence, built up soil over roots, burls on trunk	normal
64	Peruvian pepper	<i>Schinus molle</i>	34.16456372	-118.1684914	P	12.7	19	10	11	12	16	13	12	6	4	C	B	B	C	exposed roots, mechanical damage at base, slight lean	normal
65	holly oak	<i>Quercus ilex</i>	34.16534225	-118.1684775	P, M	19.0, 15.0 (24.2) ⁴	30	7	6	7	9	6	6	5	6	C	C	C	C	golfball damage, topped, dead hangers in canopy, measurements estimated due to location on active driving range	normal
66	Peruvian pepper	<i>Schinus molle</i>	34.16455606	-118.1685528	P	14.1	25	10	17	15	10	11	14	10	6	C	C	B	C	root decay present, exposed damaged roots, fungus at base, basal sprouting, recommend decay assessment	normal
67	Peruvian pepper	<i>Schinus molle</i>	34.16455511	-118.1686195	P	12.5	23	13	12	14	14	15	9	5	8	B	B	B	B	crown raised, built up soil over roots	normal
68	Peruvian pepper	<i>Schinus molle</i>	34.16452709	-118.1687499	P	15.0	23	10	14	17	15	14	15	14	12	B	C	B	B	basal sprouting, minor bark beetle	pavement over roots
69	American sweetgum	<i>Liquidambar styraciflua</i>	34.16549444	-118.1687804	P, S	23	50	16	20	18	14	15	18	15	16	C	C	B	C	dieback in canopy with multiple dead hangers, leaf scorch, golfball damage, exposed damaged roots, remove dead hangers	normal
70	Peruvian pepper	<i>Schinus molle</i>	34.16476468	-118.1688068	P	14.5	19	11	13	15	15	13	12	10	6	C	C	C	C	golfball damage, slight lean, large limb removal, bark beetle, basal sprouting	normal
71	Japanese yew	<i>Podocarpus macrophyllus</i>	34.16553927	-118.1688504	P	11.0	20	6	8	6	6	4	6	7	6	D	D	C	C	golfball damage, dieback in crown, multiple dead hangers, mold/mildew on trunk due to sprinkler overspray, measurements estimated due to location on active driving range	normal
72	Peruvian pepper	<i>Schinus molle</i>	34.16476679	-118.1688848	P	13.3	26	14	16	15	18	16	20	15	13	C	C	B	C	golfball damage, basal sprouting, bark beetle	saturated
73	Peruvian pepper	<i>Schinus molle</i>	34.1646987	-118.1689294	P	15.5	29	12	15	12	11	11	14	12	10	C	C	B	C	built up turf over crown, basal sprouting, possible decay at base	normal
74	Peruvian pepper	<i>Schinus molle</i>	34.16479735	-118.1689614	P	13.3	25	12	13	9	13	10	7	8	9	B	C	C	B	golfball damage, basal sprouting	normal
75	Peruvian pepper	<i>Schinus molle</i>	34.1647948	-118.1690292	P	18.3	18	10	11	19	11	12	12	13	11	C	C	C	C	golfball damage, exposed damaged roots	normal
76	Peruvian pepper	<i>Schinus molle</i>	34.1648121	-118.1690845	P	8.3	14	10	12	11	10	12	7	5	5	C	C	B	C	golfball damage, basal sprouting, crown raised	normal
77	Peruvian pepper	<i>Schinus molle</i>	34.16481319	-118.1691521	P	13.3	28	9	13	14	15	13	12	12	8	C	B	C	C	golfball damage, crown raised	normal
78	Peruvian pepper	<i>Schinus molle</i>	34.1648411	-118.1692159	P	8.3	18	6	8	10	9	10	6	7	7	C	C	C	C	golfball damage, basal sprouting, crown raised	normal
79	Peruvian pepper	<i>Schinus molle</i>	34.16483821	-118.1692768	P	12.3	25	13	14	13	19	12	11	13	12	B	B	B	C	golfball damage, crown raised, basal sprouting	normal
80	Peruvian pepper	<i>Schinus molle</i>	34.16486196	-118.1693348	P	8.0	16	6	8	9	7	8	6	4	3	D	C	C	C	slight lean, decay at base, basal sprouting, flush cuts along trunk	compacted
81	Peruvian pepper	<i>Schinus molle</i>	34.16485852	-118.1694193	P	8.4	16	2	5	8	11	12	9	6	6	C	C	B	C	basal sprouting, golfball damage, exudate in upper canopy	normal
82	Peruvian pepper	<i>Schinus molle</i>	34.16488537	-118.1694786	P	7.0	11	5	6	6	6	7	5	4	4	C	B	B	C	golfball damage, lean,	compacted
83	Peruvian pepper	<i>Schinus molle</i>	34.16488429	-118.1695386	P	9.1	18	8	7	7	6	5	6	9	8	B	B	B	C	golfball damage, crown raised, basal sprouting	normal
84	red ironbark	<i>Eucalyptus sideroxylon</i>	34.16439789	-118.1695949	P, S	26.6	30	14	17	11	10	11	13	12	9	C	C	B	C	epicormic and basal sprouting, included bark, built up turf/soil on crown	normal
85	western sycamore	<i>Platanus racemosa</i>	34.16583031	-118.1696162	P, N, M	29	19	5	5	5	5	5	5	5	5	D	F	D	D	tree mostly dead, basal resprouts present, upper 20 feet of canopy all dead decaying wood, measurements estimated due to location on driving range, recommend removal	normal
86	Peruvian pepper	<i>Schinus molle</i>	34.16490345	-118.1696161	P	10.4	20	6	8	7	8	10	6	6	7	B	C	B	B	golfball damage, slight lean, crown raised	compacted
87	western sycamore	<i>Platanus racemosa</i>	34.16514762	-118.1696988	P, N	12	28	10	10	10	10	10	10	10	10	C	D	C	C	golfball damage, dieback in crown, ISHB-FD ⁷ likely, measurements estimated due to location on active driving range	normal
88	western sycamore	<i>Platanus racemosa</i>	34.16515487	-118.1697231	P, N, M	23	30	10	8	12	15	18	10	10	10	C	D	C	C	ISHB-FD likely, dieback in crown, large dead hangers in canopy, golfball damage, measurements estimated due to location on active driving range	normal
89	western sycamore	<i>Platanus racemosa</i>	34.16420445	-118.1699793	P, N, M	27.5	50	17	19	21	15	17	19	19	14	D	C	C	C	ISHB-FD likely, basal resprout, decay in trunk, termites, frass	pavement over roots
90	western sycamore	<i>Platanus racemosa</i>	34.16586899	-118.1700128	P, N, M	23.4	37	20	23	19	19	24	16	20	19	C	C	C	C	multiple cavities and woodpecker holes, ISHB-FD likely, golfball damage, lean	normal

Appendix A – Tree Measurements

Tree Number ¹	Common Name	Latin Name	Latitude	Longitude	Protected Tree Classification ²	DBH ³	Height ⁵	Canopy North ⁶	Canopy NorthWest	Canopy West	Canopy SouthWest	Canopy South	Canopy SouthEast	Canopy East	Canopy NorthEast	Health	Aesthetics	Balance	Vigor	Comments	Soil Condition
91	coast live oak	<i>Quercus agrifolia</i>	34.16571731	-118.1700568	P, N, M	19.0, 18.6, 15.0 (30.53)	40	18	21	30	28	25	20	18	14	C	C	B	C	built up soil over roots, dieback and canker in upper canopy, dead hangers, golfball damage	normal
102	Mexican fan palm	<i>Washingtonia robusta</i>	34.16434393	-118.1702501	P	30 bt	35	5	5	5	5	5	5	5	5	B	B	A	B	ash tree growing from base	compacted
103	western sycamore	<i>Platanus racemosa</i>	34.16465106	-118.1702749	P, N, M	28.6	65	21	20	19	28	30	24	28	27	C	C	C	C	ISHB-FD likely, large limb dead in lower canopy, basal sprouting, remove dead limb	normal
104	Chinese privet	<i>Ligustrum lucidum</i>	34.16458844	-118.1702719	P	10.1	19	6	4	3	3	5	5	5	5	A	A	A	A	Grouping of 3 hedges with one trunk of appropriate size	normal
105	Sydney red gum	<i>Angophora costata</i>	34.16534667	-118.170263	P, S, M	34.5	50	18	6	4	6	27	25	20	23	C	C	B	C	multiple dead hangers in upper canopy, golfball damage, dieback in crown	normal
106	shamel ash	<i>Fraxinus uhdei</i>	34.16507957	-118.1702809	P, M	10.0, 10.2, 14.0 (20.0)	35	16	18	20	22	24	10	11	16	B	C	C	B	large exposed buttress roots with mechanical damage, multiple trunks, fence girdling trunk and base, growing over concrete	compacted
107	shamel ash	<i>Fraxinus uhdei</i>	34.16475871	-118.1702734	P	8.1, 2.0, 1.0 (8.4)	21	10	8	9	10	10	8	8	11	B	B	B	A	multiple trunks, growing in fence	normal
108	shamel ash	<i>Fraxinus uhdei</i>	34.16491561	-118.1702779	P	10.0	20	11	10	12	9	8	1	1	1	B	C	D	B	growing in fence, half of tree pruned at fence, basal sprouting	normal
109	coast live oak	<i>Quercus agrifolia</i>	34.16540595	-118.1702754	P, N	4.0	10	5	6	4	4	6	7	6	5	B	B	C	B	growing in fence, poor pruning,	pavement over roots
110	Sydney red gum	<i>Angophora costata</i>	34.16538686	-118.1702957	P, S, M	28.0	45	20	23	20	23	25	12	6	10	B	B	B	B	roots covered by concrete, fence pruning made tree lopsided	pavement over roots
111	white alder	<i>Alnus rhombifolia</i>	34.16540811	-118.167398	P, N	9.7	35	12	11	10	10	10	9	12	13	B	B	A	B	slight lean, golfball damage and mechanical damage at base	normal
112	American sweetgum	<i>Liquidambar styraciflua</i>	34.16526892	-118.1675728	P	8.5	33	8	7	8	6	5	6	8	9	A	A	B	A	mechanical damage at base	normal
113	swamp mahogany	<i>Eucalyptus robusta</i>	34.16534997	-118.1675964	P, M	19.9	35	11	7	6	12	17	18	11	10	B	B	B	B	slight lean, large cavity on main trunk, golfball damage, wetwood on east side,	pavement over roots
114	swamp mahogany	<i>Eucalyptus robusta</i>	34.16539175	-118.167642	P, M	31.2	50	11	16	17	21	13	16	12	13	B	B	B	B	cart path cut part of buttress roots, small cavities thought mid trunk, golfball damage	pavement over roots
115	California bay laurel	<i>Umbellularia californica</i>	34.165444	-118.1676746	P, N, M	26.8	45	12	14	17	20	16	7	8	17	B	B	B	A	large burl at base, buttress roots cut off for cart path, mechanical damage at base	pavement over roots
116	California bay laurel	<i>Umbellularia californica</i>	34.16556045	-118.1677838	P, N, M	41.2	45	14	16	17	18	16	18	19	18	A	A	A	A	large burl at base, damaged buttress roots, cavity in main trunk with 4-6" of decay	normal
127	holly oak	<i>Quercus ilex</i>	34.16536036	-118.1682581	P, M	24.1	45	19	23	22	10	6	11	19	22	B	B	A	A	epicormic shoots along trunk, golfball damage, mechanical damage at base, soil deeply saturated	saturated
134	holly oak	<i>Quercus ilex</i>	34.16547632	-118.1684952	P, M	25.7	40	17	19	21	18	12	14	14	17	B	C	B	B	epicormic shooting in upper canopy, mechanical damage at base, exposed damaged roots, basal sprouting, golfball damage	saturated
148	carob	<i>Ceratonia siliqua</i>	34.16632124	-118.1687484	P, M	23.0	35	17	14	15	12	15	13	13	15	C	B	B	B	golfball damage, large exposed damaged roots, laege cavities in trunk with decay and planted growing,	normal
150	red ironbark	<i>Eucalyptus sideroxylon</i>	34.16646765	-118.1687582	P	17.3	35	7	5	10	12	13	16	12	13	B	B	C	B	poor structure, basal sprouting	normal
152	carob	<i>Ceratonia siliqua</i>	34.16627251	-118.1687672	P	16.0	25	10	11	12	12	12	11	8	5	C	B	B	B	basal sprouting, exposed damaged roots, poor structure, sapsucker damage	normal
156	red ironbark	<i>Eucalyptus sideroxylon</i>	34.16640767	-118.1688308	P	16.0	35	3	4	4	18	23	17	12	6	C	C	C	C	large amounts of exudate, fissures in bark, poor structure, lean, dead hangers on south side of canopy	normal
157	red ironbark	<i>Eucalyptus sideroxylon</i>	34.1663857	-118.1688827	P	18.3	37	8	7	12	15	19	15	12	6	B	B	C	B	large amounts of exudate, lean, basal sprouting, large exposed damaged roots	normal
158	red ironbark	<i>Eucalyptus sideroxylon</i>	34.16640099	-118.1689186	P	16.2	35	3	6	6	12	14	16	6	4	B	C	D	B	large exposed damaged roots, basal sprouting, poor structure, large limbs removed, lean	normal
159	white paperbark tree	<i>Melaleuca quinquinervia</i>	34.16579962	-118.1691422	P, M	24.9	38	15	17	15	13	14	15	16	15	B	B	B	C	golfball damage, damaged buttress roots, included bark	normal
160	California bay laurel	<i>Umbellularia californica</i>	34.16578085	-118.1692414	P, N, M	19.8	35	22	15	10	15	14	16	12	10	C	B		B	large burl at base with root decay present, exposed damaged roots, golfball damage, basal sprouting	saturated
161	holly oak	<i>Quercus ilex</i>	34.16584171	-118.1692638	P, M	27.6	40	21	22	19	25	24	19	16	15	B	B	A	B	golfball damage, basal sprouting, exfoliating bark on large limbs	saturated
162	holly oak	<i>Quercus ilex</i>	34.16588395	-118.1694883	P, M	22.2	45	17	16	21	16	12	15	19	17	A	B	A	B	epicormic sprouting in mid canopy, golfball damage, damaged exposed roots	saturated
163	western sycamore	<i>Platanus racemosa</i>	34.16598456	-118.1697542	P, N, M	28.9	49	23	26	22	20	19	17	19	22	C	C	C	C	ISHB-FD likely, Arborjet tag suggests insecticide/fungicide injections and/or soil drench, golfball damage, woodpecker holes, poor structure (topped, poor attachment)	normal
164	American sweetgum	<i>Liquidambar styraciflua</i>	34.16618527	-118.1700547	P, M	21.1	40	12	11	10	8	13	15	10	11	C	B	B	B	minor dieback in crown, leaf scorch, golfball damage	pavement over roots
167	Italian stone pine	<i>Pinus pinea</i>	34.16674606	-118.1702519	P, S, M	30.1	40	25	40	32	12	10	7	18	15	A	B	C	A	strong lean, exposed damaged roots	normal
168	Canary Island pine	<i>Pinus canariensis</i>	34.16649608	-118.1702985	P, M	23.2	45	17	24	20	17	12	14	18	15	A	A	A	A		normal

Appendix A – Tree Measurements

Tree Number ¹	Common Name	Latin Name	Latitude	Longitude	Protected Tree Classification ²	DBH ³	Height ⁵	Canopy North ⁶	Canopy NorthWest	Canopy West	Canopy SouthWest	Canopy South	Canopy SouthEast	Canopy East	Canopy NorthEast	Health	Aesthetics	Balance	Vigor	Comments	Soil Condition
169	Canary Island pine	<i>Pinus canariensis</i>	34.16645168	-118.170296	P, M	19.8	40	12	13	10	12	10	11	14	13	B	B	A	B	exposed, damaged roots	normal
170	Canary Island pine	<i>Pinus canariensis</i>	34.16653639	-118.170295	P, M	25.2	45	13	15	16	17	13	10	10	12	A	A	A	A	slight lean	normal
171	Italian stone pine	<i>Pinus pinea</i>	34.16638824	-118.1703019	P, M	17.1, 14.2 (22.2)	40	12	27	30	22	17	19	20	14	B	C	C	B	slight lean, sparse canopy, exposed roots	pavement over roots
172	Canary Island pine	<i>Pinus canariensis</i>	34.16656722	-118.1702999	P	15.0	43	14	13	15	13	13	10	15	16	B	B	B	B	slight lean, sparse canopy	normal
173	shamel ash	<i>Fraxinus uhdei</i>	34.1666734	-118.170298	P	6.3, 5.2 (8.2)	35	8	9	11	12	12	13	15	15	A	B	B	A	multiple trunks, rubbing against pine	normal
174	Peruvian pepper	<i>Schinus molle</i>	34.16668904	-118.1702951	P	9.3, 8.2 (12.4)	30	15	18	13	12	13	14	15	19	B	B	C	B	multiple trunks with included bark	normal
175	Canary Island pine	<i>Pinus canariensis</i>	34.16647073	-118.1702944	P	17.2	40	18	20	19	15	17	13	18	15	A	B	A	A	minor dieback in canopy	normal
177	Italian stone pine	<i>Pinus pinea</i>	34.16671919	-118.1702833	P, S, M	36.2	38	5	10	38	35	33	3	1	1	C	C	D	C	lean, exposed, damaged roots, damp pocket in trunk growing grass, column of decay possibly present	normal
178	Canary Island pine	<i>Pinus canariensis</i>	34.16641794	-118.1702989	P	14.2	38	10	12	13	15	12	8	8	12	A	B	B	B	exposed, damaged roots	normal
179	coast live oak	<i>Quercus agrifolia</i>	34.166267	-118.1703074	P, N, M	38.8	40	25	35	33	37	33	21	19	25	B	A	B	B	Arroyo Seco concrete banks burying roots, minor dieback in crown, self corrected lean	pavement over roots
1051	shamel ash	<i>Fraxinus uhdei</i>	34.16498135	-118.1702949	P	6.3, 5.4, 3.8 (9.1)	25	12	6	5	7	11	10	11	14	C	C	B	C	Roots growing over concrete, girdling roots, multiple trunks, golfball damage, fence girdling stem	normal
1064	western sycamore	<i>Platanus racemosa</i>	34.16491637	-118.1697157	P, N, M	10.1, 22.5, 17.0 (29.9)	50	18	19	16	20	18	21	20	18	D	C	C	D	large dead hangers in upper canopy, woodpecker holes, ISHB-FD likely, golfball damage, large cavities in trunk with decay, basal sprouting, investigate decay in trunk, extent of fusarium dieback	normal
1556	Chinese elm	<i>Ulmus parvifolia</i>	34.16646706	-118.16913	P, M	20.6	30	11	10	12	14	16	23	20	18	C	C	B	C	large damaged buttress roots with decay present, compaction in root zone, large cavity in trunk with decay, golfball damage	compacted

1: Existing Davey Tree Tag/Tree numbers utilized

2: P=Public, N=Native, S=Specimen M=Mature

3: Diameter at Breast Height or 4.5 feet above ground. Diameter measured in inches

4: Measurements in parentheses are the trees combined diameter as a function of the combined area measurements for each individual trunk as defined in Ordinance 8.52.020

5: Height measured in feet

6: Canopy measured in feet

7: ISHB-FD: Invasive shot-hole borers - Fusarium Dieback

Appendix B

Tree Photographs



Tree 55 - Peruvian pepper



Tree 56 - Peruvian pepper



Tree 57 - Peruvian pepper



Tree 58 - white paperbark tree



Tree 59 - Peruvian pepper



Tree 60 - Peruvian pepper

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B
Tree Photographs





Tree 61 - Peruvian pepper



Tree 62 - Peruvian pepper



Tree 63 - Peruvian pepper



Tree 64 - Peruvian pepper



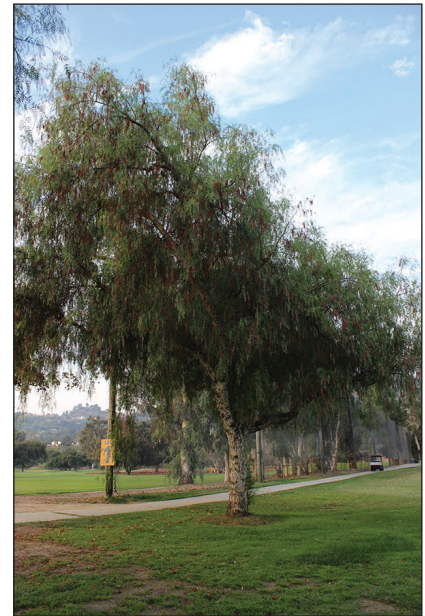
Tree 65 - Peruvian pepper



Tree 66 - holly oak



Tree 67 - Peruvian pepper



Tree 68 - Peruvian pepper

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs





Tree 69 - American sweetgum



Tree 70 - Peruvian pepper



Tree 71 - Japanese yew



Tree 72 - Peruvian pepper



Tree 73 - Peruvian pepper



Tree 74 - Peruvian pepper



Tree 75 - Peruvian pepper

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B
Tree Photographs





Tree 76 - Peruvian pepper



Tree 77 - Peruvian pepper



Tree 78 - Peruvian pepper



Tree 79 - Peruvian pepper



Tree 80 - Peruvian pepper



Tree 81 - Peruvian pepper



Tree 82 - Peruvian pepper



Tree 83 - Peruvian pepper

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project



Appendix B Tree Photographs



Tree 84 - red ironbark



Tree 85 - western sycamore



Tree 86 - Peruvian pepper



Tree 87 - western sycamore



Tree 88 - western sycamore



Tree 89 - western sycamore



Tree 90 - western sycamore

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs





Tree 91 - coast live oak



Tree 102 - Mexican fan palm



Tree 103 - western sycamore



Tree 104 - Chinese privet



Tree 105 - Sydney red gum



Tree 106 - shamel ash



Tree 107 - shamel ash



Tree 108 - shamel ash

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs



Tree 109 - coast live oak



Tree 110 - Sydney red gum



Tree 111 - white alder



Tree 112 - American sweetgum



Tree 113 - swamp mahogany



Tree 114 - swamp mahogany



Tree 115 - California bay laurel



Tree 116 - California bay laurel

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs





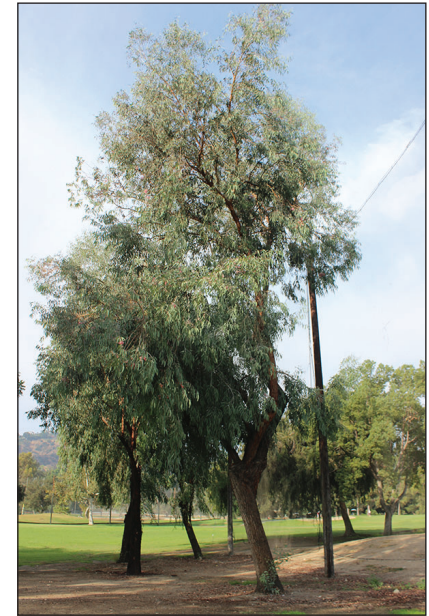
Tree 127 - holly oak



Tree 134 - holly oak



Tree 148 - carob



Tree 150 - red ironbark



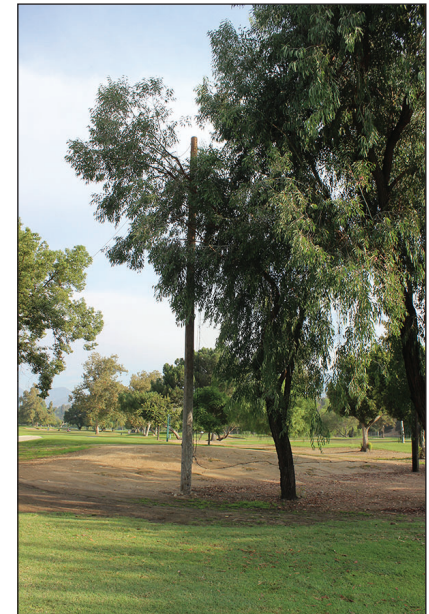
Tree 152 - carob



Tree 156 - red ironbark



Tree 157 - red ironbark



Tree 158 - red ironbark

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs





Tree 159 - white paperbark tree



Tree 160 - California bay laurel



Tree 161 - holly oak



Tree 162 - holly oak



Tree 163 - western sycamore



Tree 164 - American sweetgum



Tree 167 - Italian stone pine



Tree 168 - Canary Island pine

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project



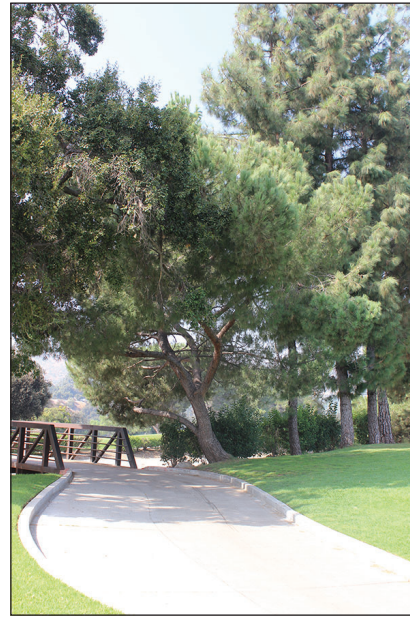
Appendix B Tree Photographs



Tree 169 - Canary Island pine



Tree 170 - Canary Island pine



Tree 171 - Italian stone pine



Tree 172 - Canary Island pine



Tree 173 - shamel ash



Tree 174 - Peruvian pepper



Tree 175 - Canary Island pine



Tree 177 - Italian stone pine

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project

Appendix B Tree Photographs





Tree 178 - Canary Island pine



Tree 179 - coast live oak



Tree 1051 - shamel ash



Tree 1064 - western sycamore



Tree 1556 - Chinese elm

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SOURCE: ESA, 2020

Brookside Golf Course Improvements Project



Appendix B
Tree Photographs

Appendix C

Resumes



Douglas Gordon-Blackwood

Biologist III

EDUCATION

BS, Botany, California State Polytechnic University, Pomona

14 YEARS OF EXPERIENCE

CERTIFICATIONS/REGISTRATION

American Society of Consulting Arborists
Registered Consulting Arborist #689

International Society of Arboriculture, Certified Arborist/Utility Specialist -#WE-11726-AU

International Society of Arboriculture, Tree Risk Assessment Qualified (TRAQ)

Wetland Training Institute 40-hour Wetland Delineator Certification Program 2018

Helicopter Flight/Safety Training, Burns & McDonnell

CDFW Rare Plant Voucher Collecting Permit 2081(a)-17-021-V

University of California Cooperative Extension 2018 Gold-spotted Oak Borer / Invasive Shot Hole Borer Workshop

PROFESSIONAL AFFILIATIONS

California Native Plant Society

California Invasive Plant Council

American Society of Consulting Arborists

Douglas is a consulting biologist with 9 years of experience in biological resources and habitat restoration, and 14 years with arboriculture. During his career he has conducted or supervised biological surveys and mapping of plant communities, jurisdictional areas and wildlife throughout Southern California. He has acted as lead biologist on several large utility, development, and transportation projects throughout Southern California.

His experience includes extensive survey experience for biological resource assessments, habitat and vegetation mapping, nesting bird surveys, restoration site assessments, arboricultural assessments, invasive species eradication, and biological compliance monitoring.

Experience Themes

Botany. As a botanist, Douglas has over 9 years' experience conducting rare plant surveys throughout Southern and Central California. He has extensive vegetation classification and mapping experience utilizing CNPS-CDFW combined vegetation rapid assessment and Relevé methods. Douglas has overseen field efforts for clients like Southern California Edison (SCE), California High Speed Rail Authority, Caltrans, LADPW, OCPW, IRWD, and Southern California Gas.

Arboriculture Douglas is certified by the American Society of Consulting Arborists (ACSCA) as a Registered Consulting Arborist (RCA). He is certified by the International Society of Arboriculture (ISA) as a Certified Arborist, Utility Specialist, and is Tree Risk Assessment Qualified. He is also a member of the ASCA, ISA, Western chapter of the ISA, and the Utility Arborist Association. Douglas has over 14 years' experience working with native and ornamental trees throughout California. Douglas is currently pursuing his ISA Board Certified Master Arborist (BCMA).

Habitat Restoration Ecologist Douglas has over 8 years of habitat restoration experience throughout various habitat types in Southern California. He has extensive experience conducting restoration site assessments, through qualitative and quantitative monitoring. Douglas has overseen invasive and nonnative plant species inventory, control and monitoring for restoration sites throughout the Angeles, Los Padres, San Bernardino and Cleveland National Forests. He is also skilled in preparation of various mitigation documents including Habitat Mitigation and Monitoring Plans, Long Term Management Plans, project work plans, and annual reporting.

CERTIFICATIONS/
REGISTRATION
(CONTINUED)

International Society of
Arboriculture – Western
Chapter

Utility Arborist
Association

Department of Water
Resources OP-2
Awareness
Training

Union Pacific Railroad
Orientation and safety
Training

BNSF Contractor Safety
Orientation
TPZP Safety Training

Utility Transmission Projects. Working in various roles with Southern California Edison, Douglas has acted as a lead biological monitor, lead botanist, lead weed abatement monitor, arborist, nesting bird support and restoration ecologist throughout Kern, Los Angeles, San Bernardino, Ventura, Riverside, and Orange Counties. He also assisted with preparation of SCE GO-131 memorandum, habitat resource assessments, Biological Opinion, habitat restoration and weed management planning.

Relevant Experience

Transportation

Los Angeles County Department of Public Works Creek Fire Restoration Projects, Sylmar, CA. *Biologist.* Douglas conducted rare plant and oak tree surveys, conducted vegetation mapping, and weed abatement monitoring for four sites (MM 15.12, 15.62, MM15.67, and MM 16.92) along Little Tujunga Road within the Angeles National Forest. 4 days; January 2019 – November 2020.

Dillon Road Bridge over Coachella Valley Stormwater Channel (aka Whitewater River Channel) Project, Dillon Road Joint Powers Authority, City of Coachella, CA. *Botanist.* Douglas acted as botanist for habitat mapping, rare plant survey, and general biological surveys for the Dillon Road Bridge project. 3 Days; November 2019

San Bernardino County Transportation Authority I-215 Bi-County Landscape Project, Colton/Grand Terrace, CA. *Botanist/Arborist.* Douglas acted as botanist and arborist for habitat mapping, tree inventory, and biological surveys along Interstate 215 for a highway landscape renovation project in San Bernardino and Riverside Counties. Observed sensitive species include *Juglans californica*. 1 day; June 2019.

Los Angeles World Airport LAX Landside Access Modernization Program Tree Survey, Los Angeles, CA. *Arborist.* Douglas acted as project manager and arborist for the 127-acre Manchester Square property adjacent to the Los Angeles World Airport. Douglas provided arboricultural, mapping and reporting services for approximately 1100 ornamental trees within the Los Angeles World Airport property. 2.5 Weeks; January 2019.

Metro Purple Line Extension, Beverly Hills, CA. *Independent Compliance Monitor.* Douglas conducted noise and compliance monitoring for the Metropolitan Transportation Authority Purple Line Extension Project. 20-30 days; July 2017-September 2018.

California High Speed Rail Project, Angeles National Forest, CA. *Lead Botanist.* Douglas performed rare plant and invasive plant surveys for the Palmdale – Burbank & Fresno to Merced spans of the California High Speed Project. He also assisted with habitat restoration, weed management, Daily EMMA reporting and agency interaction with National Forest Service botanists and various other agencies. 15 Days; August 2015 – Present.



Development

Mammoth Mountain Resorts Woolly Tube Park/Proposed Snowmaking Facilities Botanical Survey, Mammoth Mountain, CA.

Botanist. Douglas acted as the lead botanist (subcontracted through Ascent Environmental) for botanical surveys at Woolly's tube park and various snowmaking facilities throughout Mammoth Mountain Ski Area within Inyo/Mono National Forests. 5 Days; July 2020.

Wiley Canyon (Smiser Ranch) Mixed Use Development, Santa Clarita, CA.

Biologist/Arborist. Douglas conducted biological and arboricultural inventory and report for a mixed use development in the City of Santa Clarita. 2 Weeks; December 2019

Scripps College Science Center Preconstruction Nesting Bird Surveys, Claremont, CA.

Biologist. Douglas conducted preconstruction nesting bird surveys and nest monitoring for the construction of a science building on the campus of Scripps College in the City of Claremont. 1 Week; April 2020

Trails at Santiago Creek Development, Orange, CA. *Biologist/Botanist.* Douglas conducted rare plant, vegetation mapping, Jurisdictional delineations, and Burrowing owl surveys of a 11-acre parcel of Rio Santiago, a large development located in the City of Orange. 1 week; April 2020

Calamigos Tennis Ranch Biological Support, Calabasas, CA.

Biologist/Arborist. Douglas conducted oak and native tree inventory, biological survey, mapped sensitive environmental resource areas, and provided reporting for an 8-acre mixed-use facility in support of the Santa Monica Mountains LCP Biological Assessment requirements. 7 days; October 2019 – Present

4700 Avenida Del Mar Biological Assessment, Malibu, CA.

Botanist/Biologist. Douglas conducted and wrote a general biological assessment in accordance with the City of Malibu Local Coastal Program, and including vegetation mapping, jurisdictional delineations, biological inventory and mapping of Environmentally Sensitive Habitat Areas (ESHA's). 6 Days; November 2019

25860 Dark Creek Road Biological Assessment, Monte Nido, CA.

Botanist/Biologist. Douglas conducted a general biological assessment in accordance with the Santa Monica Mountains Local Coastal Program, and including vegetation mapping, jurisdictional delineations, biological inventory and tree mapping. Douglas also wrote the biological assessment. 5 Days; December 2019

Oaks at Monte Nido/Monte Nido Estates Residences Project, Monte Nido, CA.

Biologist. Douglas conducted biological and arboricultural surveys and documentation in support of a coastal development permit application in the rural community of Monte Nido. 4 Days; November 2019

EF International Language Campus Project, Costa Mesa, CA. *Biologist.* Douglas conducted a biological and landscape assessment of the former Trinity Broadcasting Network facility for a proposed college campus in support of CEQA documents. 2 Days; September 2019

Legado Properties Playa Del Rey Beachfront Properties Project, Playa Del Rey, CA. *Biologist.* Douglas conducted a vegetation mapping, post impact analysis, and a historical site assessment for beachfront properties located within Environmentally Sensitive Habitat Areas. 2 Days; August 2019

Rutter Santiago Saddle Crest Development, Trabuco Canyon, CA. *Habitat Restoration Monitor.* Douglas gathered transect and field data for qualitative and quantitative site assessments and annual reporting for mitigation sites within the Cleveland National Forest. Douglas also helped produce annual reporting for Special-status plant, Sensitive Natural Communities, and Regional Water Quality Control Board annual reporting. Observed sensitive species include *Nolina cismontana* and *Calochortus weedii* var. *intermedius*. 20 Days; January 2019 - Present.

March Joint Powers Authority Heacock Street Truck Terminal Facility, March Inland Port Airport (Unincorporated Riverside County, CA). *Habitat Restoration Ecologist.* Douglas prepared the Habitat Mitigation and Monitoring Plan (HMMP) for the Heacock Street Truck Terminal project located within the March Joint Powers Authority. 5 Days; December 2018.

Trumark Homes Henry Avocado Ranch Tree Survey, Escondido, CA. *Arborist.* Douglas conducted a tree survey of 300 trees within a 34-acre proposed development in Escondido, CA. 1 Day; April 2019

Netflix Triunfo Canyon Corporate Retreat, Agoura Hills, CA. *Botanist/Arborist.* Douglas conducted rare plants, wildlife and habitat mapping of the Oak Canyon Ranch property within Triunfo Canyon. Douglas also conducted tree inventories and hazardous tree assessments. Observed sensitive species included *Lilium humboldtii* ssp. *ocellatum*, *Calochortus catalinae*, and *Juglans californica*. 2 days; May 2019 – June 2019

Stephens Ranch Cemetery Project, La Verne, CA. *Botanist.* Douglas conducted habitat mapping, wildlife surveys and rare plant surveys of the 187-acre Stephens Ranch Cemetery project located within the San Dimas Canyon/San Antonio Wash Significant Ecological Areas of Los Angeles County. Observed sensitive species included *Romneya coulteri*, *Berberis nevinii*, and *Quercus durata* var. *gabrielensis*. 3 Days; April 2019 – June 2019.

Hidden Oaks Ranch Country Club Project, Chino Hills, CA. *Botanist.* Douglas conducted habitat mapping and rare plant surveys for a 537-acre site located within the City of Chino Hills. Observed sensitive species included *Calochortus catalinae*. 2 days; May 2019 - Present



Boy Scouts of America Camp Cherry Valley Biological Constraints Survey and Reporting, Two Harbors - Santa Catalina Island, CA. *Botanist.* Douglas

conducted rare plant and habitat mapping of Camp Cherry Valley property adjacent to Two Harbors. Observed sensitive species included *Constancea nevinii*, *Crossosoma californicum*, *Calochortus catalinae*, *Piperia cooperi*, *Ribes viburnifolium*, *Quercus pacifica*, *Galium catalinense* ssp. *catalinense*, *Eriogonum giganteum* var. *giganteum*, *Deinandra clementina*, *Arctostaphylos catalinae*, and *Acmispon dendroideus* var. *dendroideus*. 1 Day, June 4th, 2019

Under Canvas Joshua Tree Recreational Facility Project, Yucca Valley, CA.

Botanist. Douglas conducted rare plant surveys, desert native plant inventory and habitat assessments of a 640-acre property within the town of Yucca Valley, CA. Observed sensitive species included *Saltugilia latimeri*. 3 Days; April 2019 – May 2019

Christopher Homes (CD/CFG Lake Ranch LLP) Lake Ranch Project, Lake Mathews (Unincorporated Riverside County), CA. *Biologist.* Douglas helped

prepare various habitat restoration documents for the Lake Ranch project including the Habitat Mitigation and Monitoring Plan, the Fencing Plan, and the Long-term Monitoring Plan for a 110-acre land development site located within the Western Riverside Multiple Species Habitat Conservation Plan. September 2018.

Berkeley Tuolumne Family Campground, Tuolumne Meadows, CA. *Lead*

Arborist. Douglas conducted an arboricultural inventory for 2000+ trees burned during the 2013 Rim Fire within the City of Berkeley Family Campground. Douglas conducted tree risk assessments for each tree, mapped each location using sub-meter GPS, and tagged trees with appropriate tagging. Douglas also conducted vegetation mapping of portions of the site. 2 Weeks; January – February 2018

Seefried Industrial Properties Project, Fontana, CA *Lead Arborist.* Douglas conducted an arboricultural survey and reporting for A 17.6-acre proposed industrial site within Fontana, CA. Reporting was prepared in accordance with the City of Fontana Tree Policy Manual. 2 days; February 2018

Chevron West Coyote Hills, Fullerton, CA *Lead Botanist* Douglas conducted rare plant surveys, *Calochortus* spp. mapping, and habitat site assessments of the West Coyote Hills development. 2 Days; June 2017

Moreno Rose Retirement Village, Moreno Valley, CA *Burrowing Owl Support.* Douglas conducted a habitat and resources assessment, and prepared reporting for a proposed retirement community within Moreno Valley, CA. 1 Day; February 2018

Pardee Homes Butterfield DBESP, Beaumont, CA *Burrowing Owl Support.* Douglas served as burrowing owl support for protocol burrowing owl surveys of the proposed Butterfield property within the City of Beaumont, CA. 2 Days; May 2017

William Lyon Homes Avery Place, Menifee, CA. Burrowing Owl Support. Douglas served as burrowing owl support for MSHCP 30-day Preconstruction survey of a housing development within Menifee, CA. 1 Day; January 2019

Utility

AT&T Communications Clock Tower Project, Newhall, CA. Biologist. Douglas conducted biological inventory, vegetation mapping and site assessment for a proposed cell tower located within the Santa Susana Mountains/Simi Hills Significant Ecological Area and prepared the corresponding Biological Constraints Analysis and Biota Report. Observed sensitive species includes *Juglans californica*. 1 Week; February 2020

Inland Empire Utilities Agency Groundwater Recharge Basins Burrowing Owl Presence/Absence Surveys, Inland Empire, CA. Burrowing Owl Support. Douglas acted as a burrowing owl support for burrowing owl presence/absence surveys within groundwater recharge basins throughout the Inland Empire. 10 days; May 2019 to Present.

Department of Water Resources Cedar Springs Spillway Repair Project, Hesperia, CA. Biological Monitor. Douglas provided biological monitoring and nesting bird surveys for the Cedar Springs spillway repair project located within the Silverwood Lake State Recreation Area. May 20, 2019 - Present

Department of Water Resources San Joaquin Field Division Subsidence Surveys, Kern County, CA Burrowing Owl. Douglas conducted burrowing owl habitat assessments, burrow inventory, and protocol surveys along the California Aqueduct within Kern County. 2 Days: June 2019.

Department of Water Resources Lake Perris Geological Instrumentation Installation Monitoring, Perris, CA. Biological Monitor. Douglas provided biological monitoring for the installation of geological testing equipment installations throughout the Lake Perris State Recreation Area. July 1st and 2nd, 2019

SCE Deteriorated Pole Replacement, Southern California, CA. Biologist. Douglas conducted Habitat Resource Assessments for multiple deteriorated SCE utility poles throughout Southern California. Douglas conducted habitat and vegetation mapping, prepared project evaluation memos and conducted desktop analysis and monitored pole replacement in a wide range of sensitive species habitats. 10-20 Days; June 2017 - March 2018.

SCE HTRP/DRHTP Hazardous Tree Removal Program & Drought Related Hazardous Tree Program, Southern California, CA. Biologist/Arborist. Douglas acted as an arborist for SCE's hazardous tree program. Douglas conducted tree surveys, habitat assessment, jurisdictional assessments, and tree removal monitoring for hazardous trees throughout Southern California. 20-30 Days; June 2017 - March 2018.



Metropolitan Water District (MWD) Foothill Blow-off Feeder, Santa Clarita, CA. *Biological Monitor.* Douglas served as a biological monitor overseeing vegetation removal and site clearing for foothill feeder blow-off stations located within Santa Clarita, CA. Douglas also prepared site resource assessments for work at the feeders. 1 day; March 2018

SCE/Plains Kinsey 12 kV Restoration Site, Gorman, CA. *Restoration Ecologist* Douglas oversaw seed collection, seeding, planting, BMP maintenance, and weed abatement of a SCE and Plains Pipeline restoration site within the Angeles National Forest. Observed sensitive species included *Calochortus clavatus* var. *gracilis* and *Delphinium parryi* ssp. *purpureum*. 10 days; December 2017- March 2018

SCE Tahquitz Substation Replacement Project, Mountain Center, CA *Botanist.* Douglas conducted rare plant surveys and Special Status plant focused construction monitoring for the Tahquitz Substation wreck out and replacement. Observed sensitive species include *Deinandra mohavensis*, *Calochortus palmeri* var. *munzii*, and *Galium angustifolium* ssp. *jacinticum*. June 2018 to August 2018.

SCE McGrath Beach Substation and Peaker Station, Oxnard, CA. *Lead Botanist /Restoration Ecologist.* Douglas conducted Daubenmire cover class vegetation sampling and rare plant surveys for the SCE McGrath Beach Peaker Station. Douglas also oversaw site restoration, weed abatement, and irrigation maintenance of a 37-acre site associated with SCE's McGrath Beach Substation. Observed sensitive species observed included *Astragalus pycnostachyus* var. *lanosissimus* and *Juncus acutus* ssp. *leopoldii*. 2-3 weeks; April 2017 – August 2018.

EDF Energy Valentine Wind Farm and Gen-Tie, Antelope Valley, CA. *Lead Botanist.* Douglas oversaw rare plant surveys and Desert Native Plant Act (DNPA) inventory of the Valentine Wind Farm and Gen-Tie alignment. Douglas also assisted with jurisdictional delineations and reporting for the site. 5 days; June 2017

SCE Mira Loma-Serrano Alignment Project, Yorba Linda, CA. *Restoration Ecologist.* Douglas conducted annual restoration site monitoring, willow stake planting, and reporting for a disturbed riparian site adjacent to SCE's Mira Loma-Serrano Alignment. 5 Days; April 2017 – June 2017.

SCE Serrano Valley Restoration Site, Corona, CA. *Restoration Ecologist.* Douglas conducted quarterly restoration site assessments and invasive species mapping for a riparian restoration site along SCE's Serrano Valley transmission line. Douglas also oversaw weed abatement and BMP installation and maintenance for the site. 5-6 days; April 2017 - June 2017

SCE Santa Catalina Pole Replacement Surveys, Santa Catalina, CA. *Lead Botanist.* Douglas oversaw and lead botanical, wildlife and habitat assessment surveys of pole replacement impact areas for SCE distribution lines throughout Santa Catalina Island. Douglas also conducted detailed reporting and impact assessment. *Observed sensitive species* *Arctostaphylos catalinae*, *Atriplex coulteri*, *Calochortus catalinae*, *Ceanothus megacarpus* var. *insularis*, *Cercocarpus betuloides* var. *blancheae*, *Cistanthe maritima*, *Crossosoma californicum*, *Dendromecon harfordii* var. *rhamnoides*, *Dichondra occidentalis*, *Dudleya virens* ssp. *hassei*, *Eriogonum giganteum* var. *giganteum*, *Galium catalinense* ssp. *catalinense*, *Galium nuttallii* ssp. *insulare*, *Harpagonella palmeri*, *Lyonothamnus floribundus* ssp. *floribundus*, *Malacothamnus fasciculatus* var. *catalinensis*, *Microseris douglasii* ssp. *platycarpha*, *Piperia cooperi*, *Quercus pacifica*, *Quercus tomentella*, *Rhamnus pirifolia*, and *Scrophularia villosa*. 1 week; April 2017.

EDF Renewable Energy Tropico Solar Project, Rosamond, CA. *JD Support.* Douglas served as a jurisdictional delineation support for a 215-acre proposed solar site. Douglas also conducted rare plant and special status wildlife general survey of the site. 3 Days; December 2018.

SCE Vista-Colton Deteriorated Pole Replacement Project, Colton, CA. *Lead Botanist.* Douglas conducted rare plant, vegetation and habitat mapping within the floodplain of the Santa Ana River. Observed sensitive species included *Eriastrum densifolium* ssp. *sanctorumi*. 2 days; April 2018

SCE Arrowhead Subtransmission Line Realignment Project, Hesperia, CA *Lead Botanist.* Douglas conducted rare plant and habitat assessments of a 115 kV transmission line. 1 Day; September 2018.

SCE Garnet Substation Project, North Palm Springs, CA *Lead Botanist.* Douglas conducted botanical and wildlife surveys of the Garnet substation and alignment near North Palm Springs, CA. Observed sensitive species include *Astragalus lentiginosus* var. *coachellae*. 2 Days; August 2017

SCE Cottonwood-Permanente Deteriorated Pole Replacement Project, Cushenbury Springs, CA *Lead Botanist.* Douglas conducted rare plant, vegetation and habitat surveys for a pole replacement project within the unique carbonate habitat of Cushenbury Springs, CA. Observed sensitive species included *Rosa woodsii* var. *glabrata* and *Calochortus striatus*. 2 days; June 2017

SCE El Casco Substation Restoration Project, El Casco, CA *Restoration Ecologist.* Douglas conducted weed abatement and restoration site assessments for a smooth tarplant (*Centromadia pungens* ssp. *laevis*) restoration site adjacent to SCE's El Casco Substation. Observed sensitive species included *Centromadia pungens* ssp. *laevis*, and *Juglans californica*. 5 days; June 2017

SCE Calcite Substation Project, Lucerne Valley, CA *Lead Botanist.* Douglas conducted botanical, wildlife, and habitat assessment surveys of the Calcite substation and alignment. Observed sensitive species *Cryptantha clokeyi*, *Eriogonum ovalifolium* var. *vineum*, *Calochortus striatus*, *Erigeron parishii*, and *Muilla coronata*. 2 Days; May 2017



SCE Alberhill – Valley Ivy Glen Alignment, Temescal Valley, CA *Lead Botanist. BUOW support.* Douglas conducted MSHCP Botanical, Vernal Pool, and Burrowing owl surveys of the Alberhill and Valley Ivy Glen alignment. Observed sensitive species included *Abronia maritima* var. *aurita*, *Ambrosia pumila*, *Atriplex coronata* var. *notatior*, *Centromadia pungens* ssp. *laevis*, *Chorizanthe polygonoides* var. *longispina*, *Chorizanthe xanti* var. *leucotheca*, *Chorizanthe leptotheca*, *Deinandra paniculata*, *Dodecahema leptoceras*, *Dudleya multicaulis*, *Harpagonella palmeri*, *Juglans californica*, *Lasthenia glabrata* ssp. *coulterii*, *Lepidium virginicum* var. *robinsonii*, *Pseudognaphalium leucocephalum*, and *Romneya coulteri*. 10-15 Days; April 2017 – June 2018

SCE Gale-Pisgah Alignment Project, Daggett, CA *Lead Botanist.* Douglas conducted botanical and wildlife surveys of SCE Gale-Pisgah alignment and Substation. Observed sensitive species *Menodora spinescens* var. *mohavensis* and *Funastrum utahense*. 3 days; April 2017.

SCE Eldorado-Lugo-Mohave Upgrade Project (LVRAS) Baker, CA *Lead Botanist.* Douglas conducted botanical and desert tortoise surveys of a SCE line replacement within the Mojave National Preserve between Barstow and the Nevada Border. Douglas also acted as a support for jurisdictional delineations throughout the survey area. Observed sensitive species included *Astragalus bernardinus*, *Astragalus layneae*, *Astragalus tidestromii*, *Castela emoryi*, *Cymopterus multinervatus*, *Grusonia parishii*, and *Sphaeralcea rusbyi* var. *eremicola*. 3.5 Weeks; April 2017 – May 2017.

SCE La Fresa Substation, Torrance, CA *Biological Monitor.* Douglas served as a biological monitor and nesting bird biologist. Douglas conducted nest monitoring of red-tailed hawk and common raven nests within SCE's La Fresa substation. 2 days; April 2017.

SCE Lake Success Project, Porterville, CA *Lead Botanist.* Douglas conducted botanical and vegetation mapping of the Option 2 SCE alignment surrounding Lake Success. Observed sensitive species included *Clarkia springvillensis*, *Convolvulus simulans*, *Eryngium spinosepalum*, *Navarretia nigelliformis* ssp. *nigelliformis*, and *Pseudobahia perisonii*. 9 days; April 2017 – May 2017.

EDF Catalina Solar/Pacific Wind Farm, Antelope Valley, CA *Botanist.* Douglas conducted Daubenmire cover class mapping and botanical surveys throughout Catalina Solar and Pacific Wind farms in the Antelope Valley. 5 days; March 2017.

Avangrid Renewables Tule Wind Project, Boulevard, CA. *Designated Biologist.* Douglas acted as a designated biologist for 200 megawatt wind turbine project within the McCain Valley on BLM and Ewiiapaayp Tribal lands. As a restoration ecologist, Douglas oversaw large scale cactus and succulent salvage and storage. Douglas also acted as a biological monitor during the site clearing, civil work and turbine construction. 15-20 Days; October 2016 – March 2017

SCE Tehachapi Renewable Transmission Project (TRTP) – Kern, Los Angeles, and San Bernardino Counties, CA. *Lead Botanist/ Lead Biological Monitor.*

Douglas served as lead botanist, lead biological monitor, lead weed abatement monitor, nesting bird surveyor, and restoration ecologist for the Southern California Edison's (SCE) TRTP project spanning a 173-mile transmission line corridor, including construction of 500 kV overhead and underground high-voltage electric transmission lines. Douglas conducted rare plant surveys throughout Kern, Los Angeles, and San Bernardino counties. Douglas oversaw invasive species mapping and removal throughout the Angeles National Forest, Puente Hills habitat preserve, and Tonner Canyon preserves. He acted as a support for riparian bird and nesting bird surveys throughout the project area for species including Coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and burrowing owls. He also provided oversight for plant salvage activities within the Angeles National Forest. Observed sensitive plant species included *Heuchera caespitosa*, *Berberis nevinii*, *Dudleya cymosa* ssp. *crebrifolia*, *Dudleya densiflora*, *Opuntia basilaris* var. *brachyclada*, *Centromadia parryi* ssp. *australis*, *Hulsea vestita* ssp. *gabrielensis*, *Galium grande*, *Orobanche valida* ssp. *valida*, *Lilium humboldtii* ssp. *ocellatum*, *Arctostaphylos glandulosa* ssp. *gabrielensis*, *Lepechinia fragrans*, *Calystegia felix*, *Syntrichopappus lemmonii*, *Calochortus catalinae*, *Calochortus plummerae*, *Calochortus palmeri* var. *palmeri*, *Castilleja gleasoni*, *Malacothamnus davidsonii*, *Quercus durata* var. *gabrielensis* and *Juglans californica*. 6 Years; March 2011 – March 2017.

Southern California Gas North/South Project, San Bernardino and Riverside Counties, California. *Lead Botanist.* Douglas conducted botanical and wildlife surveys of the Southern California Gas North/South alignment. 2 Days; March 2014

Municipal

Newport Bay Conservancy Big Canyon Phase 2A Restoration Project, Newport Beach, CA. *Restoration Ecologist/Arborist.* Douglas conducted habitat restoration monitoring, arboricultural assessments, and invasive Shot-hole borer assessments of Newport Bay Phase 2A big canyon site. 2 Days; August 2020

Orange County Public Works Caspers Wilderness Park Entry Road Repair Project, San Juan Capistrano, CA. *Biologist.* Douglas provided biological monitoring and reporting for an Arizona Crossing Repair project. 4 Days; July 2020 – Present

Orange County Public Works Peters Canyon Bikeway Extension Project, Orange/Tustin, CA. *Biologist.* Douglas conducted a biological assessment and composed the Natural Environment Study (Minimal Impact) for the project located within portions of the Orange County HCP. June 2020 – Present.

Los Angeles Department of Public Works Los Angeles River Bike Path (Willowcrest Ave to Barham Blvd), Universal City, CA. *Arborist.* Douglas conducted a tree inventory and reporting for the LA River bike path between Willowcrest Avenue and Barham Boulevard, and within the Universal Studios Specific Plan Area. 6 days; June 2020



Orange County Public Works Villa Park Biological Monitoring, Orange, CA.

Biologist. Douglas provided biological and restoration monitoring and reporting for a brush clearance project at the Villa Park Dam facility and within fuel modification areas adjacent to the dam. 5 days; December 2019 – Present.

Palos Verdes Peninsula Water Reliability Project Environmental Compliance Monitoring, Palos Verdes, CA.

Compliance Monitor. Douglas conducted daily compliance monitoring of a pipeline replacement project within Palos Verdes and Rolling Hills Estates. September 2018 – Present.

Orange County Public Works Countywide Long Term Routine Maintenance Program Channel Categorizations 2019 & 2020, Orange County, CA.

Biologist. Douglas conducted channel categorizations, biological surveys, jurisdictional delineations, vegetation mapping and reporting for various channels and basins throughout Orange County, CA. 45 days; April 2019 – Present.

Orange County Public Works San Diego Creek Sediment Removal Project, Irvine, CA.

Biologist. Douglas conducted daily site spot checks and nesting bird surveys of a sediment removal project within the San Diego Creek. 15-20 Days; September 2018 to May 2019.

San Manuel Band of Mission Indians Hot Springs Lake Dam Project, Highland, CA.

Biologist. Douglas conducted biological and vegetation mapping surveys of the Hot Springs Lake Dam area on the San Manuel reservation and provided technical memorandum for the project. 2 Days; September 2019

Los Angeles County Department of Public Works Santa Anita Canyon Road Improvement Project, Sierra Madre, CA.

Biologist. Douglas conducted biological site assessment and vegetation mapping for a road repair project along Santa Anita Canyon Road. 6 Days; October 2019

Los Angeles County Department of Public Works Vasquez Canyon Road at Bouquet Bridge Project, Santa Clarita, CA.

Biological Monitor. Douglas provided biological monitoring for a sediment removal project beneath the Vasquez Canyon bridge. 2 days; September 2019.

Los Angeles County Department of Public Works San Francisquito Canyon Creek Bridge Project, Santa Clarita, CA.

Botanist. Douglas conducted vegetation mapping of proposed bridge replacement and road improvement project in the Angeles National Forest. Observed sensitive species included least Bell's vireo and *Berberis nevadensis*. 1 Day; August 2019.

Los Angeles County Department of Public Works Santa Monica Mountains/Mulholland Highway Storm Repair Project, Malibu, CA.

Biological Monitor. Douglas provided biological monitoring and biological assessments for various road repair sites along Mulholland Highway. 7 Days; December 2019 – Present.

City of Los Angeles Department of Recreation and Parks Peck Park Annual Brush Clearance Monitoring, San Pedro, CA. *Biologist.* Douglas provided nesting bird surveys and biological monitoring for annual brush clearance activities for Lake Machado, Peck Park, and Harbor Park Golf Course within the city of San Pedro, CA. 4 days; June 2019 – September 2019.

Los Angeles Unified School District Elizabeth Learning Center Habitat Gardens Assessment, Cudahy, CA. *Botanist.* Douglas provided a botanical and biological inventory for specialized chaparral, vernal pool, and desert habitat gardens at Elizabeth Learning Center. September 2019.

Cali Lake RV Park Project, Santa Clarita, CA. *Botanist.* Douglas conducted a rare plant survey and vegetation mapping of recreational campground and RV park within the Santa Clara River Significant Ecological Area. 1 Day; July 2019

County of San Diego Department of Parks and Recreation Hellhole Canyon Preserve Additions Biodiversity Survey and Habitat Maps, Valley Center, CA. *Botanist.* Douglas conducted habitat mapping, rare plant, and invasive plant surveys of 5 large parcel additions to the Hellhole Canyon Preserve totaling 692 Acres. Observed sensitive species included *Harpagonella palmeri*, *Xanthisma junceum*, *Quercus engelmannii*, and *Allium marvinii*. 9 Days; March 2019 – April 2019

County of San Diego Department of Parks and Recreation Ramona Sheriff Station Vernal Pool Survey and Vegetation Mapping, Ramona, CA. *Botanist.* Douglas conducted vegetation mapping, rare plant mapping, and vernal pool surveys of a property adjacent to Ramona Sheriff Station. Observed sensitive species included San Diego fairy shrimp (*Branchinecta sandiegonensis*). 1 Day; March 2020.

County of San Diego Management & Monitoring Rare Plant Inspect and Monitoring Program 2019, Sycamore Canyon/Goodan Ranch Preserve, CA. *Botanist.* Douglas conducted Rare Plant Inspect and Manage monitoring for San Diego Thornmint (*Acanthomintha ilicifolia*) populations located within Sycamore Canyon and Goodan Ranch Preserves. Observed sensitive species included *Acanthomintha ilicifolia*, *Convolvulus simulans*, *Harpagonella palmeri*, and *Selaginella cinerescens*. April 15th and 16th, 2019.

Los Angeles Unified School District Marshall High School Nesting Bird Surveys, Los Angeles, CA. *Nesting Bird Surveyor.* Douglas provided nesting bird surveys and monitoring for a building upgrade project at Marshall High School. June 2019 – July 2019

Irvine Ranch Water District Syphon Reservoir Improvement Project, Irvine, CA *Botanist/Arborist.* Douglas conducted habitat assessments, tree mapping, western spadefoot toad surveys and rare plant surveys within Syphon Reservoir. Observed sensitive species included *Dudleya multicaulis*, *Viguiera laciniata* and *Calochortus catalinae*. 10 days; December 2018 – December 2019



City of San Diego Wetland/Restoration Mitigation Opportunities Site

Evaluations, San Diego, CA. *Botanist.* Douglas conducted Wetlands Mitigation Opportunities assessments and filled out site evaluation forms of Mission Valley, Sunshine-Berardini, West Bernardo, Lopez Canyon, East Black Mountain, Camino Del Sur, Upper Penasquitos Watershed, and South-56 potential mitigation sites throughout the City of San Diego. Observed sensitive species included *Viguiera laciniata*, *Harpagonella palmeri*, *Artemisia palmeri*, *Quercus dumosa*, *Adolphia californica*, *Ferocactus viridescens*, *Selaginella cinerescens*, *Iva hayesiana*, *Adolphia californica*, and *Juncus acutus* ssp. *leopoldii*. 15 Days; March 2019 – Present.

Los Angeles County Department of Public Works Eaton Wash Reservoir, Altadena, CA. *Compliance Monitor.* Douglas conducted daily weed abatement and vegetation removal monitoring during annual maintenance activities within the Eaton Wash Flood Control Basin. 5 Days; September 2018 – October 2018.



Gregory C. Ainsworth

Senior Arborist

EDUCATION

M.C.R.P., Environmental Planning, California Polytechnic State University, San Luis Obispo

B.S., Environmental Horticulture Science, California Polytechnic State University, San Luis Obispo

18 YEARS EXPERIENCE

CERTIFICATIONS AND TRAININGS

International Society of Arboriculture Certified Arborist (Cert# WE 7473A)

International Society of Arboriculture, Tree Risk Assessor Qualified (TRAQ)

REFERENCES

Maureen Tamuri, City of Calabasas, Community Development Director.
Email: mtamuri@cityofcalabasas.com
Phone: (818) 224-1701

Doug Hooper, City of Agoura Hills, Planning Director
Email: dhooper@ci.agoura-hills.ca.us
Phone: (818) 597-7342

Kelly Kim, Los Angeles County Fire Department-Urban Forestry Division.
Email: kkim@fire.lacounty.gov
Phone: (818) 890-5719

Greg has extensive experience conducting tree assessments, health risk assessments, tree appraisals, and providing expert witness testimony to municipalities. He is an certified arborist with the International Society of Arboriculture and serves as the City Arborist for the cities of Calabasas and Agoura Hills. In addition, Greg has an on-call master service agreement for arborist services with the Los Angeles County Beaches and Harbors Department and the Ventura County Channel Islands Harbor Department, and he is a pre-approved arborist with the City of Malibu and the County of Los Angeles, and interacts regularly with the Los Angeles County Forestry Division. Greg has experience conducting tree surveys and preparing reports for several other municipalities and counties, including but not limited to, City of Pasadena, City of Thousand Oaks, City of Santa Clarita, Ventura County and San Luis Obispo County. He has assisted dozens of clients with obtaining discretionary permits involving tree impacts. Greg was a member of the Oak Woodland Habitat Conservation Alliance; a team of professional arborists, forestry personnel and planners that recently completed an Oak Woodland Conservation and Management Plan for the County of Los Angeles.

Relevant Experience

Pasadena Non-Potable Reuse Water Project, City of Pasadena, Public Works Department. The City of Pasadena Public Works Department proposes to install a non-potable recycled water line along various streets that bisect residential neighborhoods to the east and west of Brookside Golf Course. Greg led a survey of more than 200 trees that could potentially be effected and prepared a risk assessment for several mature Canary Island Pine Trees located on Laurel Street that were of concern to adjacent residents. Greg prepared a tree survey report and Canary Island Pine Risk Assessment Report, and assisted the Director of Public Works in facilitating a public workshop on the project's potential impacts to city-trees, and the potential risks associated with installing underground utilities on Laurel Street.

Historic Deodar Cedar Impact Assessment, City of Santa Monica, CA. Greg conducted a focused assessment of a Deodar Cedar tree listed as a historic resource by the City of Santa Monica. The purpose of the assessment was to verify if a proposed residential development could present short-term or long-term negative impacts on the tree. Greg's assessment included reviewing historical information on the tree's health and conducting his own detailed evaluation, including assessing potential direct and indirect impacts to the tree from a change in the site's hydrology, as well as sunlight/shade influence from the proposed project.

Boething Treeland Farm Residential Development, City of Los Angeles, CA.

The Boething Treeland Farms Residential Development includes the development of a 95-small lot subdivision, a 26-lot single-family subdivision, an eldercare facility, parking lots, community pools, pet park and fitness/hiking trails. Greg conducted a focused survey of approximately 500 trees on the project site, including city rights-of-ways and prepared a tree report in accordance with the City of Los Angeles Tree Protection Ordinance. This proposed project is still under review by the City of Los Angeles.

City of Calabasas, City Arborist, Los Angeles County, CA. Greg is the City of Calabasas' arborist. His services include verification of tree survey reports, tree damage assessments, tree appraisals, tree risk assessments, expert witness testimony, review of Healthy Tree Permit Applications, and overall implementation of the City's Oak Tree Preservation Guidelines (Ordinance) for the City's Planning Department and Code Enforcement Division. Greg works closely with planning staff, code enforcement personnel, and legal counsel, providing recommendations for preserving and mitigating the city's oak tree population, as well as support in determining retribution for oak tree violation cases.

City of Agoura Hills, City Oak Tree Consultant, Los Angeles County, CA. Greg is the City of Agoura Hills' consulting arborist. His services include verification of tree survey reports, tree damage assessments, tree appraisals, tree risk assessments, review of Oak Tree Permit Applications, and overall implementation of the City's Oak Tree Ordinance. Greg works closely with planning staff in determining project effects on native oak trees and in determining appropriate replacement mitigation and/or in-lieu fees.

Los Angeles County Department of Public Works, Flood Maintenance Division, Los Angeles County, CA. Greg has conducted several tree inventories and focused surveys and reports for various flood maintenance projects in support of permitting and/or environmental review. Surveys have included county-protected oak trees, as well as inventories of riparian tree species in support of regulatory permit applications to determine impacts and mitigation. Greg has prepared restoration plans and implemented restoration for channel maintenance projects that have impacted riparian trees.

City of Commerce Sidewalks Improvement Project, City of Commerce, CA. *Lead Biologist/Arborist.* ESA prepared an Initial Study/Mitigated Negative declaration for the Sidewalk Improvement and Tree Reforestation Project for the City of Commerce. The purpose of the project is to repair the severe displacement of sidewalk and other hardscape along Slauson Avenue caused by City tree roots. Greg conducted a tree survey and prepared a biological assessment report in support of the CEQA analysis, and prepared a plant palette that included drought tolerant trees with suitable form and root structure to be planted along Slauson Avenue.

City of Los Angeles, Brentwood School Tree Survey, Los Angeles, CA. *Consulting Arborist.* Greg conducted a protected tree survey per the City of Los Angeles Protected Tree Ordinance and prepared a technical tree report for the Brentwood School Master Plan Project in Los Angeles, California. This project required an inventory appraisal and evaluation of over 300 ornamental and native trees located on the school's east and west campuses.



City of Los Angeles, Mountain Gate Development, Los Angeles, CA. *Consulting Arborist.* Greg surveyed over 1000 trees on the Mountain Gate Development project and submitted a detailed tree inventory report for project permitting. The project is located on Mountain Gate Drive, just west of the San Diego Freeway (405) in the City of Los Angeles.

Oak Woodland Habitat Conservation Strategic Alliance, Los Angeles County, CA. *Consulting Arborist.* Greg was a member of group of arborists and academic professors that developed an Oak Woodlands Conservation Management Plan for Los Angeles County that provides a pragmatic, economically equitable and defensible framework to guide the protection and restoration of Oak Woodlands. The plan serves as a blueprint for community outreach and identify economic, social and ecological benefits associated with functional Oak Woodlands.

County of Los Angeles, Newhall Land and Farming, Los Angeles, CA. **Consulting Arborist/Biologist.** Greg managed and performed annual biological surveys for a 13,000-acre Specific Plan area located in northwestern Los Angeles County, California. Surveys conducted include over 4,000 oak trees in accordance with the County of Los Angeles Oak Tree Ordinance and identification of suitable trees for relocation.

California Department of Water Resources, Pyramid Lake Maintenance Projects, Angeles National Forest, Los Angeles County, CA. Greg conducted a focused tree survey in support of two separate maintenance projects located within the Angeles National Forest (ANF) at Pyramid Lake. Native oak trees were surveyed in accordance with the ANFs survey and reporting requirements, and results were included in a federal Biological Assessment/Biological Evaluation Report and associated regulatory permits for the Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

Ventura County Harbor Department Channel Island Harbor. *Consulting Arborist/Biologist.* Since 2005, Mr. Ainsworth has provided the Harbor Department with on-call arborist and biologist services that have included conducting an inventory of all trees within the Harbor and identification of trees that should be removed or replaced with better specimens based on environmental factors such as placement, wind, salt exposure, and aesthetics. Greg conducted a study that evaluated effects of Myoporum thrips on Myoporum trees and provided recommendations for control. He also provides on-call monitoring services that include assessment and monitoring of the breeding and roosting heron population at the harbor.

Sunshine Canyon Landfill, Arborist Support, Los Angeles County, CA. *On-call Arborist.* Greg conducted annual monitoring for several mitigation requirements that include City of Los Angeles oak tree mitigation, PM10 tree buffer mitigation, big cone Douglas fir mitigation, coastal sage scrub restoration, coastal sage scrub and chaparral revegetation required by the Air Quality Control Management District. Greg assessed fire damage of coast live oak, valley oak, and canyon live oak on mature stands of oaks, as well as planted groves for mitigation. Greg

determined which trees had potential to survive, which survived based on indicators such as basal growth and healthy tissue, and those that would need to be removed. He prepared a restoration and revegetation plan introducing oak woodland, native coastal sage scrub and chaparral vegetation between the landfill and adjacent neighborhoods. Greg provided on-call services that also included: preconstruction bird surveys, protected tree surveys for proposed grading activities, and identification of suitable native revegetation sites throughout the landfill property.

City of Commerce Sidewalks Improvement Project, City of Commerce, CA.

Lead Biologist/Arborist. ESA prepared an Initial Study/Mitigated Negative declaration for the Sidewalk Improvement and Tree Reforestation Project located on Slauson Avenue, from I-710 FWY to Telegraph Road. The purpose of the project is to repair the severe displacement of sidewalk and other hardscape along Slauson Avenue caused by City tree roots, while striving for a balance between the urban forest and pedestrian/motorist safety on this heavily travelled corridor. Greg conducted a tree survey and prepared a biological assessment report in support of the CEQA analysis, and prepared a plant palette that included drought tolerant trees with suitable form and root structure to be planted along Slauson Avenue. Greg supported the planning department with a public scoping meeting where he answered questions on the project pertaining to street tree impacts and mitigation.

Corporate Ridge Development Project, City of Agoura Hills, CA. Lead Arborist.

Greg served as the lead arborist in providing construction monitoring support for the development of the Corporate Ridge Development Project. Job duties that were performed included monitoring of work conducted near oak trees, spontaneous development of methods to avoid construction impacts to protected oak trees, monitoring of the health of oak trees following construction, preparation of daily monitoring reports, and coordination with the construction manager and the City of Agoura Hills' Arborist, Anne Burroughs.

County of Los Angeles, Newhall Land and Farming, Los Angeles, CA.

Consulting Arborist/Biologist. Greg managed and performed annual biological surveys for a 13,000-acre Specific Plan area located in northwestern Los Angeles County, California. Surveys conducted include over 4,000 oak trees in accordance with the County of Los Angeles Oak Tree Ordinance and identification of suitable trees for relocation. Greg assessed the health and risk of oak trees that had been burned by various fire and provided assessments based on variables, such as percent fire scare, broken/dead limbs, exfoliating bark, basal growth, scorched crown.

Grossmont Union High School District, Grossmont High School Tree Survey, San Diego, CA. Arborist.

Greg conducted a tree survey on over 200 oak trees for a proposed high school alternative location for the Grossmont Union High School District. The locations of oak trees and mature riparian woodland species located on the alternative high school site were assessed and mapped by Greg, our certified arborist. A subsequent tree report was prepared and all attribute data (e.g., tree number, size, health, balance) collected were provided in the report. The report identified the number of trees that were removed, encroached, and preserved by the proposed alternative high school location.



Las Virgenes Municipal Water District, April Road Reservoir Environmental Constraints Analysis, Agoura Hills, CA. *Senior Arborist/Biologist.* Greg prepared a Biological Constraints Analysis for the proposed April Road Recycled Water Reservoir Site for the Las Virgenes Municipal Water District. The purpose of the assessment is to identify fatal flaws of the site and to characterize key biological resource hurdles. His analysis includes an assessment of potential incompatibilities with Los Angeles County's Sensitive Ecological Areas, impacts to wildlife migration corridors and sensitive plants and wildlife, and potential mitigation options. Greg prepared a draft oak tree appraisal to assess the potential cost of impacting approximately 200 coast live oak trees and conducted a rare plant survey of the proposed project site.

Young Nak Retreat Center, Tree Surveying, County of Los Angeles, CA. *Consulting Arborist.* Greg conducted an oak tree survey and health assessment on over 300 oak trees in accordance with the Los Angeles County Oak Tree Ordinance and prepared an oak tree report for the expansion of the Young Nak Retreat Center.

Greystar Real Estate Partners, Channel Islands Harbor, Ventura County, CA. *Senior Biologist/Arborist.* Mr. Ainsworth conducted an assessment of all trees within the Paz Mar Select and Paz Mar Reserve condominium complexes for presence of bird nests and active heron roost sites prior to annual tree trimming activities. All trees with sign of heron presence were flagged and specific tree trimming procedures were applied based on recommendations provided by Mr. Ainsworth.

Newhall Land and Farming, Mission Village Oak Tree Report, County of Los Angeles, CA. *Consulting Arborist.* Greg prepared an oak tree report in accordance with the County of Los Angeles Oak Tree Ordinance for Mission Village development project. He met with County forestry personnel to discuss proposed impacts to oak trees and feasible mitigation measures were developed through negotiations.

E. Rojas Landscape Inc., Channel Islands Harbor, Ventura County, CA. *Senior Biologist/Arborist.* Mr. Ainsworth conducted an assessment of all trees within the Paz Mar Select and Paz Mar Reserve condominium complexes for presence of bird nests and active heron roost sites prior to annual tree trimming activities. All trees with sign of heron presence were flagged and specific tree trimming procedures were applied based on recommendations provided by Mr. Ainsworth.

Newhall Land and Farming, Landmark Village Oak Tree Report, County of Los Angeles, CA. *Consulting Arborist.* Greg prepared an oak tree report in accordance with the County of Los Angeles Oak Tree Ordinance for the Landmark Village development project. He met with County forestry personnel to discuss proposed impacts to oak trees and feasible mitigation measures were developed through negotiations.

Marine Emporium Landing, LLC, Channel Islands Harbor, Ventura County, CA. *Lead Biologist.* Conducted biological assessments and prepared technical reports for two separate development projects at the Channel Islands Harbor. Conducted construction monitoring for potential impacts to great blue herons and black-crowned night heron during the construction phases.

Newhall Land and Farming, The Old Road Oak Tree Report, Los Angeles County, CA. *Consulting Arborist.* Greg prepared an oak tree report in accordance with the County of Los Angeles Oak Tree Ordinance for the widening of the Old Road near Magic Mountain Theme Park. Greg met with County forestry personnel to discuss proposed impacts to oak trees and feasible mitigation measures were developed through negotiations.

Vintage Marina, Channel Islands Harbor, Ventura County, CA. *Project Manager/Senior Biologist.* Managed and conducted construction monitoring for potential impacts to great blue herons and black-crowned night herons at the Channel Islands Harbor, Oxnard, California. Monitor efforts includes an assessment of short- and long-term construction related impacts on breeding and foraging herons. Provided on-call biological resource-related services for various projects within the Harbor.

City of Los Angeles, Scrub Television Set Tree Inventory, Los Angeles, CA. *Consulting Arborist.* Greg conducted an inventory of all ornamental and native trees located on the Scrub television set located in Los Angeles in accordance with the City of Los Angeles Tree Survey Guidelines. The inventory included the identification of species, tree measurements (height, canopy distances, trunk diameter), evaluation of physical characteristics, maintenance measures, and recommendations for preserving or relocating trees.

City of Santa Clarita, KOAR Real Estate Advisors, Santa Clarita, CA. *Consulting Arborist/Biologist.* Greg prepared a biological impact assessment, mapped plant communities, and conducted an oak tree survey, health assessment and tree appraisal in accordance with the City of Santa Clarita's Oak Tree Ordinance on the proposed Robinson Ranch Residential Development Project.

City of Agoura Hills, Corporate Ridge Development Project, Agoura Hills, CA. *Consulting Arborist.* Greg provided on-call arborist and construction monitoring support for the development of the Corporate Ridge Development Project. Job duties that were performed included construction monitoring of work conducted near oak trees, spontaneous development of methods to avoid construction impacts to protected oak trees, monitored the health of oak trees following construction, prepared daily monitoring reports, and coordinated with the construction manager and the Agoura Hills' Arborist, Anne Burroughs.

City of San Dimas, Arborist Support, San Dimas, CA. *Consulting Arborist.* Greg provided construction monitoring of work activities conducted near protected oak tree in accordance to development permit conditions for a 15 parcel residential development. He provided avoidance measures to protect saved trees such as requiring the use of hand tools for work conducted within the dripline of the trees, identification of roots that could be cut, verification of fencing to protect trees, and methods to pour concrete for retaining walls without removing large roots.



Metropolitan Water District, Tree Ordinance Compliance and Breeding Bird Surveys, La Verne, CA. *Senior Biologist.* Greg conducted a significant tree survey, prepared a tree report, and submitted a tree permit to the City of La Verne for the Metropolitan Water District Weymouth Treatment Plan Main Line Project. Greg conducted a preconstruction breeding bird and nest survey for the proposed project and identified appropriate buffers to avoid impacts to breeding birds.

Channel Islands Development Partners, Arborist Support, Ventura County, CA. *Biologist/ Consulting Arborist.* Greg conducted focused surveys for arroyo chub, southwestern pond turtle, two-striped garter snake, and special-status plants, and a protected tree survey in accordance with the Ventura County Protected Tree Ordinance on the proposed Wildwood Stable Estates development site. He prepared a protected tree report and technical biological assessment report, and identified unknown populations of the Federally-Threatened Conejo Dudleya plant on the project site.

City of Lompoc, Arborist Support, Lompoc, CA. *Consulting Arborist/ Biologist.* Greg conducted an oak tree survey in accordance to the City of Lompoc Tree Ordinance, a habitat assessment, and a biological resource section of a draft EIR for the Santa Rita Winery project.

Rockwell Scientific, Arborist Support, Ventura County, CA. *Consulting Arborist.* Greg conducted a protected tree survey and health assessment, and prepared a tree report per the City of Thousand Oaks Protected Tree Ordinance and the County of Ventura Tree Ordinance for a proposed residential development.

WRA Engineering, Technical Tree Report, Los Angeles County, CA. *Consulting Arborist.* Greg conducted a protected tree survey and impact assessment per the Los Angeles County Oak Tree Ordinance and prepared a technical tree report for a proposed 300-acre residential development project known as Quest Ranch in Los Angeles County, California. He conducted jurisdictional delineation of protected streams and prepared a draft EIR for the proposed project.

Apollo Real Estate Group and Big Rock Partners, Biological Resources Impact Study, Los Angeles County, CA. *Lead Biologist.* Greg prepared the biological resource impact study for a two separate development projects known in Malibu, California. Responsibilities also include focused botanical surveys, raptor surveys, and wildlife surveys, and a tree survey and report in accordance with the City of Malibu's Protected Tree Ordinance.

Salem Communications, Biological Assessment Report and Biota Report, Los Angeles County, CA. *Lead Biologist/Arborist.* Greg managed and conducted oak tree surveys and health assessments on approximately 600 oak trees for the proposed KRLA AM Radio Tower site in unincorporated Los Angeles County, California. He prepared an oak tree report in accordance with the requirements of the Los Angeles County Oak Tree Ordinance, a Biological Assessment Report and Biota Report per the guidelines of the Los Angeles County Sensitive Ecological Area Technical Advisory Committee, and a biological resource section of a draft EIR for the County of Los Angeles.

Eric Lloyd Wright & Associates, Arborist Support, Los Angeles County, CA.

Consulting Arborist. Conducted a protected tree survey for two separate residential project sites located in unincorporated Los Angeles County, near the City of Malibu, California.

Civil Design & Drafting, BC Land Group, and DR Horton, Tree Surveys, Palmdale, CA.

Biologist/Consulting Arborist. Greg managed and conducted Joshua tree surveys and health assessments and focused surveys on the desert tortoise, Mohave ground squirrel, burrowing owl, coast horned lizard, arroyo toad, and special-status plants on a 600-acre site proposed for the College Park Specific Plan development in Palmdale, California. He prepared several technical reports based on focused survey results, including a Joshua Tree Preservation and Relocation Plan, a Landscape Concept Plan, and an Invasive Species Removal Program. Greg identified mitigation areas for affected biological resources located on the site. He preparing Section 1602 Streambed Alteration Agreement and Section 404 permits for proposed impacts to jurisdictional drainages.

City of Ojai, Libby Bowl Reconstruction Project, Ventura County, CA.

Arborist. Greg conducted a focused survey of all trees located at the Libby Bowl. Greg prepared a detailed tree assessment report for the City of Ojai that included data collected on the health and physical structure of each tree, as well as recommendation for preserving trees and mitigating those trees that would be removed or otherwise impacted.

Conejo Valley Development Corporation, Corporate Ridge Development Project, Ventura County, CA.

Arborist. Greg conducted on-call monitoring of oaks to be preserved within the development project. Greg prescribed specific measures for avoiding impacts to oak trees and monitored all construction activities within 15 feet from all protected tree canopies. Greg prepared monitoring logs and communicated directly with the City of Agoura Hills Arborist on prescribed preservation and avoidance measures.

City of Santa Paula, East Area 1 Specific Plan, Santa Paula, CA.

Lead Biologist. Mr. Ainsworth prepared a biological impact assessment, mapping and characterization of plant communities, and a migration corridor study on the proposed East Area 1 Specific Plan project site in Santa Paula, California. Conducting a protected tree survey per the requirements of the City of Santa Paula's Protected Tree Guidelines.

Helix Water District, El Monte Groundwater Recharge, Mining and Reclamation Project EIR, San Diego, CA.

Arborist. Greg conducted a tree survey and identify trees that should be removed based on poor health conditions and which should be preserved based on overall value and aesthetics. He collected specific information during the assessment such as: type of species, trunk diameter, estimated height and radius of canopy, physical conditional and overall health rating. A subsequent tree report was prepared and all attribute data collected were provided in the report. The report identified the number of trees that were removed, encroached, and preserved.



U.S. Forest Service, Hot Shot Fire Crew, Los Padres Forest (1997 – 1998). Greg was on the Crew 3 (currently known as Crew 7) hot shot fire crew based out of San Luis Obispo. Greg was on a 21-person hand crew where he conducted vegetation clearing using a double-headed pulaski hand tool, while working under extreme fire hazard conditions. Greg and his crew either hiked into front-line fire areas or where transported via helicopter. During Greg’s tenure, he gained experience cutting fire lines, working under extreme weather and high hazard conditions, and effective communication with fellow firefighters. Greg and his crew responded to many different fire situations ranging from single-tree lightning strikes in oak savannah to large-scale wildland fires that burned over 80,000 acres in San Luis Obispo and Santa Barbara counties. Because of Greg’s education in horticulture and arboriculture, he was responsible for helping to assess fire scar on mature oak and conifer trees to determine which trees should be removed or pruned.

Appendix D

City of Pasadena Tree Protection Guidelines

City of Pasadena Tree Protection Guidelines

Revised 5/13/19

Purpose:

The City's Tree Protection Guidelines are established for projects subject to Chapter 8.52 'City Trees and Tree Protection' and for projects for which compliance with the Tree Protection Guidelines is a condition of approval. Specifically, the guidelines seek to avoid negative impacts to protected trees that may occur during construction such as:

- Mechanical injury to roots, trunks or branches
- Compaction of soil
- Changes to existing grade, which may expose or suffocate roots

Definitions for standardized terms and diagrams are included in the guidelines.

A. General Requirements:

1. Applicants may be required to place a security deposit in the amount of the assessed value of the tree as determined using the most recent version of the International Society of Arboriculture guide to plant appraisal. The security deposit will be returned to the applicant upon successful completion of the project and upon verification that the tree has not sustained significant damage during construction. If significant damage has been sustained, and the subject tree requires further monitoring post-construction, the City Manager or designee may hold the security deposit for an additional period of time. If the subject tree has fallen into irreversible decline and must be removed based on its condition, the applicant may forfeit the deposit to the City in order to cover removal and replacement costs.
2. Violations of the City Trees and Tree Protection Ordinance may result in administrative fines in an amount up to the Tree Replacement Value of the subject tree(s).
3. Compliance Orders issued respective to violations of the City Trees and Tree Protection Ordinance may include corrective action to replace the tree canopy loss that resulted from tree removal or catastrophic damage to a protected tree.
4. Violations to the Tree Protection Guidelines may result in fines assessed per day and imposed per violation, and the potential generation of a stop work order on the construction project.
5. When a tree protection plan is required, the plan may include written recommendations for the health and long-term welfare of the protected trees during the pre-construction, demolition, construction, and post-construction development phases. Notes on the plans would include specifics on avoiding injury, damage treatment and inspections of protected trees.
6. If an applicant finds that the implementation of the following guidelines is impracticable due to the unique site, landscaping, or other characteristics of the project, the applicant may submit a request to deviate from the guidelines to the Department reviewing the permit application. The Department of Public Works and the Department of Planning and Community Development will review the applicant's tree protection measures for public trees and private trees, respectively. The Director of Public Works and the Director of Planning and Community Development (or their designees) may approve requests to deviate from these guidelines.

Such requests may be submitted by the applicant on a tree protection plan; consulting arborist report; or other manner that articulates how the tree protection measures cannot be reasonably implemented.

B. Tree Protection Zone:

The Tree Protection Zone (TPZ) shall be established to the extent of the tree's dripline plus four (4) radial feet. The guidelines herein shall be applied to the TPZ to safeguard the health of protected trees. Tree roots are generally located in the top 12–24 inches of soil and can extend to a distance exceeding the trees height and/or width.

1. Refer to Standard Plan S-642 'Tree Protection Standard' for full details.
2. Protective (6-foot high minimum) chain-link fencing with an access gate of minimal width should be installed around the TPZ to the extent practicable subject to approval by staff prior to the commencement of any grading, construction, or demolition. Fencing must also include 8 ½" x 11" (minimum) signage that includes the following information: Tree Protection Zone; name and contact information of project owner or authorized representative; and "Please contact the Pasadena Citizen Service Center to report any concerns (626) 744-7311."
3. The TPZ shall be irrigated sufficiently with clean water to keep the tree in good health and vigor before, during, and after construction. This may mean deeply soaking the ground periodically.
4. No construction staging or disposal of construction materials or byproducts including but not limited to paint, plaster, or chemical solutions is allowed in the TPZ.
5. The TPZ should not be subjected to flooding incidental to the construction work.
6. All work conducted in the ground within the TPZ of any protected tree should be accomplished with hand tools, unless an air spade is utilized. Trenches in the TPZ should be tunneled, or completed with an air spade to avoid damage to roots within the TPZ. Information regarding air spades is available from staff.
7. Where structural footings are required and major roots (over 3" in diameter) will be impacted, the engineer of record should submit acceptable footing design alternatives and or location alternatives to staff before proceeding with further plan review.
8. Where more than 50% of the TPZ is impacted or roots greater than 3 inches in diameter are to be removed within the TPZ, the engineer of record should submit acceptable design alternatives to staff for review.
9. Any required trenching should be routed in such a manner as to minimize root damage. Radial trenching (radial to the tree trunk) is preferred as it is less harmful than tangential trenching. Construction activity should be diverted from the TPZ. Cutting of roots should be avoided (i.e. place pipes and cables below uncut roots). Wherever possible and in accordance with applicable code requirements, the same trench should be used for multiple utilities.
10. "Natural" or pre-construction grade should be maintained in the TPZ. At no time during or after construction should soil be in contact with the trunk of the tree above the basal flair.
11. In areas where the grade around the protected tree will be lowered, some root cutting may be unavoidable. Cuts should be clean and made at right angles to the roots. When practical, cut roots back to a branching lateral root.

12. When removing existing pavement in the TPZ, avoid the use of heavy equipment, which will compact and damage the root system.
13. If staff requires mulch in the TPZ, the mulch materials and location should be shown on the plan. Larger projects will require construction staging plans to indicate where materials will be stored and how the equipment will move in and around the property to minimize damage to the TPZ. Root damage and soil compaction may be mitigated in some cases by using trench covers or mulch in the TPZ.

C. Pruning:

* Pruning guidelines are for private trees only. Contact the Department of Public Works for public tree service requests 626-744-7311.

1. Pruning of all trees should be in accordance with industry standards (International Society of Arboriculture or ANZI 133.1).
2. Pruning of oaks should be limited to the removal of dead wood and the correction of potentially hazardous conditions, as evaluated by a qualified arborist. Excessive pruning is harmful to oaks. Removal or reduction of major structural limbs should be done only as required for actual building clearance or safety. If limbs must be removed, cuts should be made perpendicular to the branch, to limit the size of the cut face. The branch bark collar should be preserved (i. e. no "flush cuts"), and cuts should be made in such a way as to prevent the tearing of bark from the tree.
3. Pruning of trees other than oaks should be limited to the removal or reduction of major structural limbs and should be done only as required for actual building clearance or safety. If limbs must be removed, cuts should be made perpendicular to the branch, to limit the size of the cut face. The branch bark collar should be preserved (i. e. no "flush cuts"), and cuts should be made in such a way as to prevent the tearing of bark from the tree.
4. Landmark Trees must be pruned by or under the direction of a qualified arborist.

D. Inspections:

1. Inspection of Protective Fencing: City staff may require inspection of fencing to verify placement and approval of materials prior to the commencement of construction.
2. Pre-construction meeting. City staff may require an on-site pre-construction meeting with the contractor and or applicant to discuss tree protection with the site supervisor, grading equipment contractors, and demolition crew.
3. Inspection of rough grading. City staff may require inspection to ensure protected trees will not be injured by compaction, cut or fill, drainage and trenching activities.
4. Special Activity in the Tree Protection Zone: City staff may require the direct on-site supervision of work in the tree protection zone.
5. Periodic Inspections: City staff may require inspections verifying adherence to tree protection measures during the on-going construction process. The cost for inspections by City staff or a contract Certified Arborist may be invoiced to the property owner.

E. Definitions:

1. *Basal flair* or *root crown* means the tree trunk where it emerges from the root system and flairs out

to create the base of the tree.

2. *Canopy* means the area of a tree that consists primarily of branches and leaves.
3. *Dripline* means the outermost area of the tree canopy (leafy area of tree).
4. *Certified Arborist* means an individual who has demonstrated knowledge and competency through obtainment of the current International Society of Arboriculture arborist certification, or who is a member of the American Society of Consulting Arborists.
5. *Tree Protection Zone (TPZ)* means the area within a circle with a radius equal to the greatest distance from the trunk to any overhanging foliage in the tree canopy plus four (4) radial feet.
6. *Tree Replacement Value/Cost:* the value or cost of the injured or removed tree determined utilizing the most recent edition of the Guide for Plant Appraisal, published by the International Society of Arboriculture ("ISA").

APPROVED BY:



Steve Mermell, City Manager