

ATTACHMENT "H"

MOORE BIOLOGICAL CONSULTANTS

December 5, 2018

Mr. Jon Wactor

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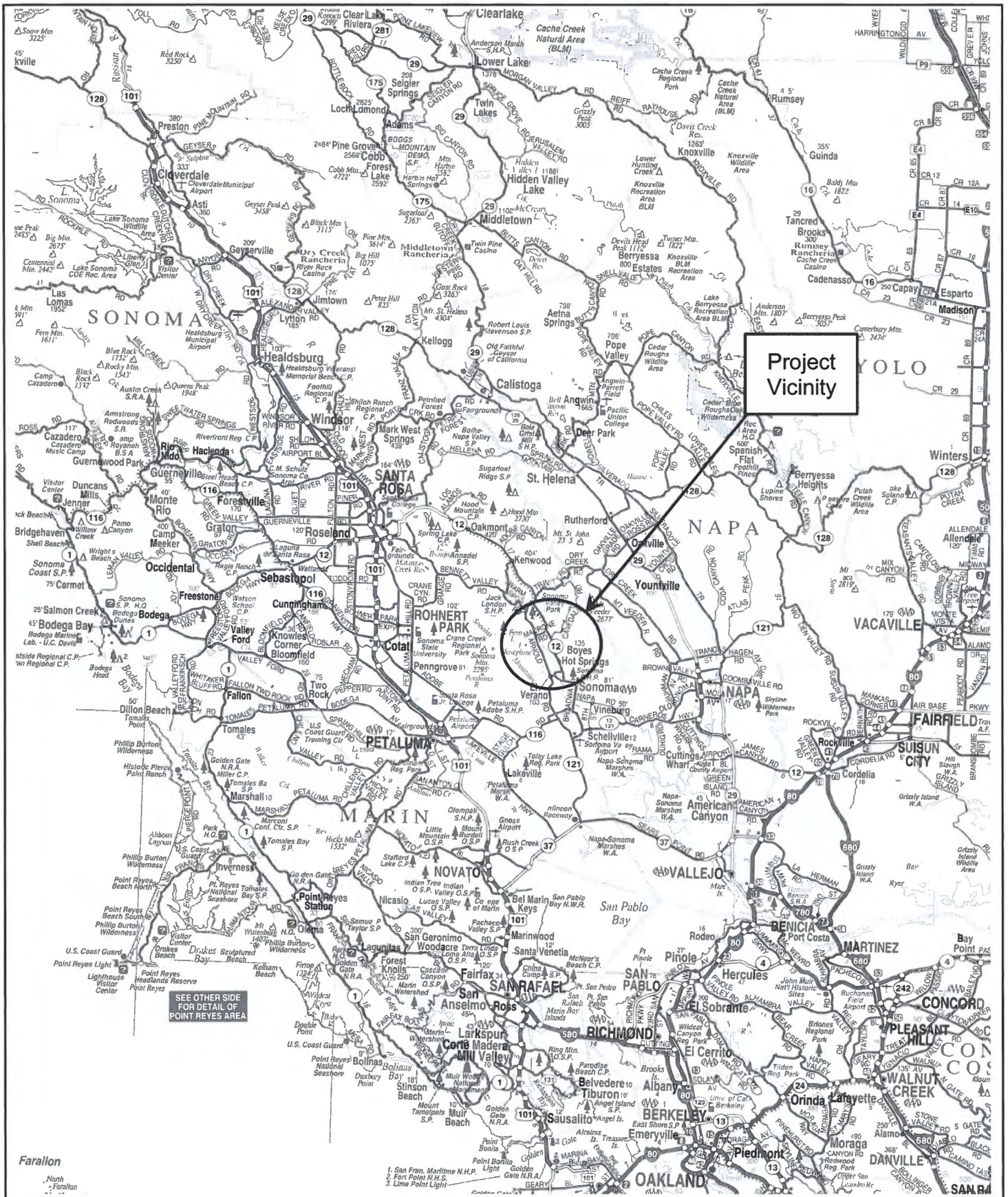
Subject: "HANNA BOYS CENTER", SONOMA, CALIFORNIA: BIOLOGICAL
ASSESSMENT

Dear Jon:

Thank you for asking Moore Biological Consultants to assist with the Hanna Boys Center project near Sonoma, California (Figures 1 and 2). The purpose this Biological Assessment (BA) is to describe the existing biological environment in the site and how the project would affect that environment. This document provides the pertinent biological information regarding Waters of the U.S. and wetlands, Federal and State special-status species, and other natural resources that may be present in the project site. This BA also evaluates potential impacts of the proposed project to biological resources in and adjacent to the site. The work involved reviewing databases and available documents, conducting surveys to document habitats present in the site and search the site for suitable habitat for or presence of special-status species.

Project Overview

The 60+/- acre project site is envisioned for a low-density residential development project with clustered development areas interspersed with open space. The project is expected to provide housing for employees of the Hanna Boys Center, and others in the local workforce. Access to the site will be from both Arnold Drive and Agua Caliente Road.

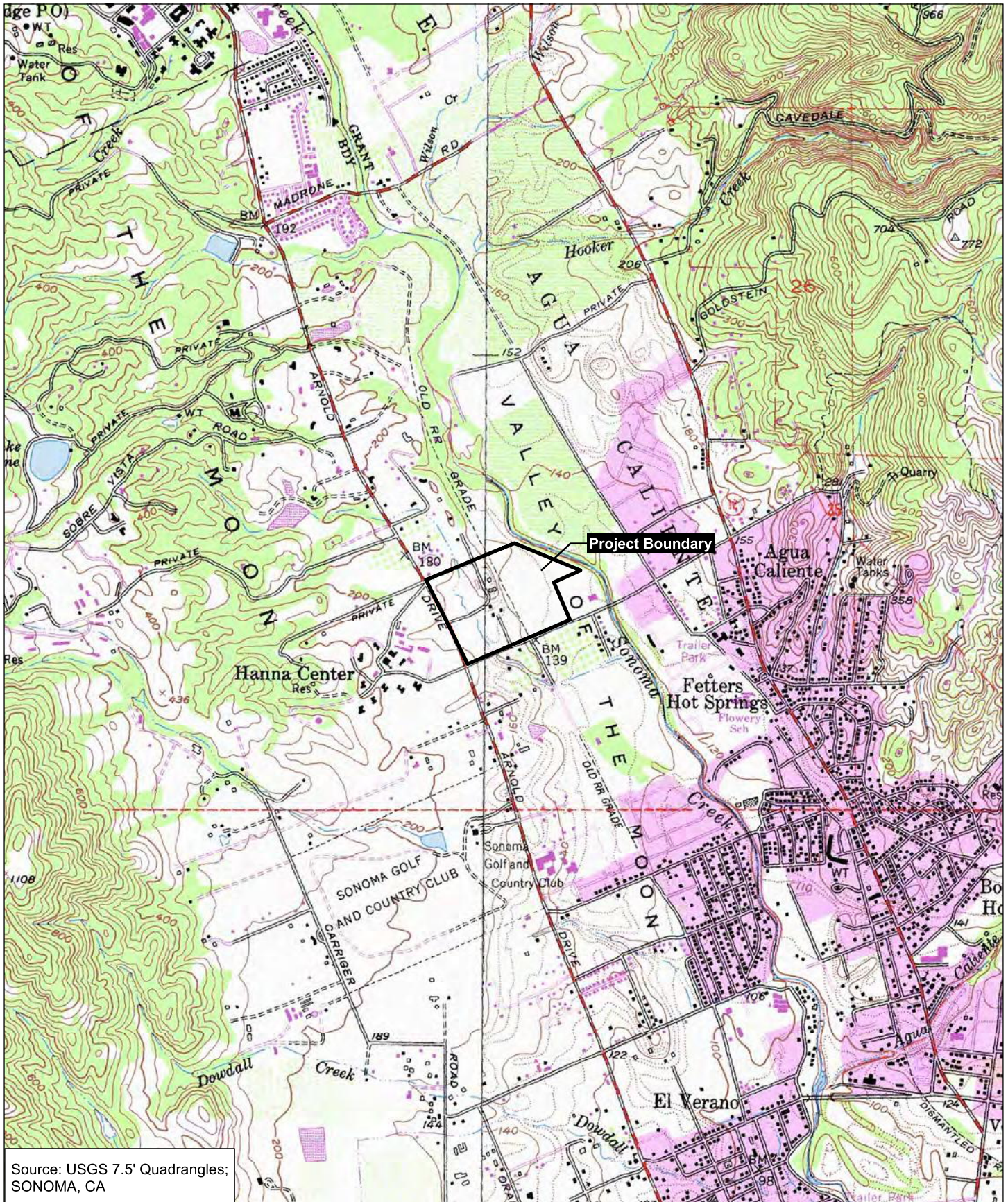


Source: Calif. State Automobile Association

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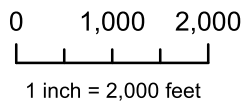
**FIGURE 1
PROJECT VICINITY**



Source: USGS 7.5' Quadrangles;
SONOMA, CA

Figure 2

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PROJECT LOCATION

Hanna Boys Center
Sonoma County, CA

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB, 2017); an updated search was conducted in 2018 (CNDDDB, 2018). The CNDDDB search included the USGS 7.5-minute Sonoma and Glen Ellen topographic quadrangles, which encompass approximately 120 square miles surrounding the project site. The United States Fish and Wildlife Service (USFWS) IPaC Trust Report of Federally Threatened and Endangered species that may occur in or be affected by projects in the project vicinity was also reviewed (Attachment B). This information was used to identify wildlife and plant species that have been previously documented in the project vicinity or have the potential to occur based on suitable habitat and geographical distribution. The USFWS on-line maps of designated critical habitat were also downloaded.

Field surveys were conducted on May 4, 7, and 10, June 1 and 16, and November 8, 2017, and on May 7, and July 3, 2018. The surveys consisted of walking throughout the site making observations of habitat conditions and noting surrounding land uses, general habitat types, and plant and wildlife species. The survey included an assessment of the site for presence or absence of special-status species and suitable habitat for special-status species. Additionally, trees in and near the site were assessed for the potential use by nesting raptors and the site was also searched for burrowing owls (*Athene cunicularia*) or ground squirrel burrows that could be utilized by burrowing owls. The work also involved a delineation of jurisdictional Waters of the U.S. and wetlands as defined by ACOE, (1987; 2008).

Under contract with Moore Biological Consultants, Salix Consulting, Inc. conducted a survey for special-status plants in the site. Botanist Jeff Glazner conducted general botanical surveys during the wetland delineation in 2017, and then conducted three focused surveys during April and May 2018, concurrent with the blooming periods of potentially occurring special-status plants.

Results

GENERAL SETTING: The project site is located in Sonoma County, California. The site is in an unnumbered Section within Township 6 North, Range 6 West of the USGS 7.5-minute Sonoma and Glen Ellen topographic quadrangles (Figure 2). The site consists of gently rolling hills and some flat terraces and is at elevations of approximately 110 to 175 feet above mean sea level. The majority of the site is vegetated with upland (i.e. not “wetland”) annual grassland vegetation. Although the majority of the site is uplands, there is a perennial stream, a few intermittent streams, and several seasonal wetlands in the site.

Parcels in the project vicinity are primarily vineyards, interspersed with areas of rangeland, open space, and residential parcels (Figure 3). The site is bounded to the north, Arnold Drive to the west, and Agua Caliente Road to the south. Sonoma Creek is located along the east edge of the site. The Hanna Boys Center is located to the west of the site, across Arnold Drive. There are residential parcels to the south of the site, across Agua Caliente Road, and to the north of the site.

VEGETATION: Habitats within the site are primarily annual grassland with a few patches of oak woodlands, bands of riparian woodlands along the creeks and the edges of the site, and a few clusters of eucalyptus (Figure 4). The site also contains part of a perennial stream (Sonoma Creek), a few intermittent streams, and numerous widely scattered seasonal wetlands.

California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describes the upland grassland vegetation in the site. Dominant grass species in the site are primarily non-native and include oats (*Avena fatua*), harding grass (*Phalaris aquatica*), soft brome (*Bromus hordeaceus*), meadow barley (*Hordeum brachyantherum*), seaside barley (*Hordeum marinum*), and perennial ryegrass (*Festuca perennis*). Other species, including rat-tail six-weeks grass (*Festuca myuros*), Medusa-head grass (*Taeniatherum caput-medusae*), yellow star-thistle



Project Site

El Rancho Feliz Rd.

Arnold Dr.

Agua Caliente Rd

AERIAL

Hanna Boys Center
Sonoma County, CA



Map Date: 07/26/2018
Aerial Source: DigitalGlobe (2017)

Figure 3

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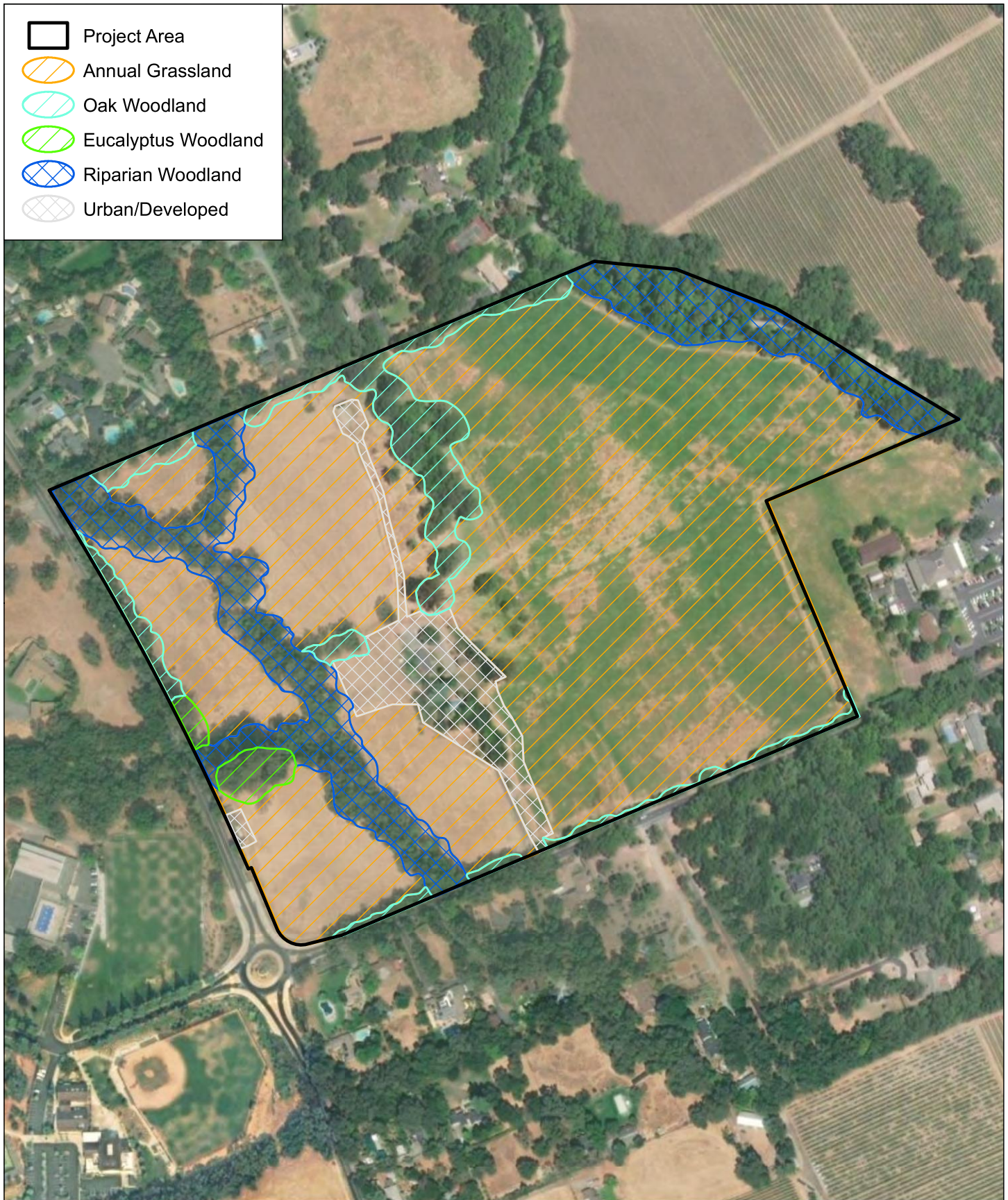
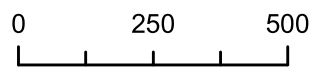


Figure 4

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HABITATS

Hanna Boys Center
Sonoma County, CA

(*Centaurea solstitialis*), tarweed (*Holocarpha virgata*), rose clover (*Trifolium hirtum*), and long-beak stork's bill (*Erodium botrys*), are intermixed with the grasses.

There is a patch of oak woodlands on a hillside in the north-central part of the site and strips of oak woodlands along much of the north, west, and south edges of the site. The oak woodlands primarily contain coastal live oaks (*Quercus agrifolia*) and valley oaks (*Quercus lobata*); there are lesser numbers of canyon live oaks (*Quercus wislizenii*) and a few Oregon white oaks (*Quercus garryana*).

The Sonoma Creek riparian corridor along the east edge of the site is dark and shaded, supporting a variety of woody riparian species. Dominant vegetation along the creek includes willows (*Salix* sp.), valley oak, and Fremont cottonwoods (*Populus fremontii*). The riparian corridor also supports valley oak, interior live oak, Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), California buckeye (*Aesculus californica*), and bigleaf maple (*Acer macrophyllum*). Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*), California wild grape (*Vitis californica*), and California wild rose (*Rosa californica*) are dominant shrubs and vines. The riparian corridors along the intermittent creeks in the west part of the site contain several of the same tree species found along Sonoma Creek. Due to the intermittent nature of the western creeks, the riparian corridors are much more open, contain fewer hydrophytic (i.e., "wetland") species, and are generally lacking shrubs and vines.

In the west part of the site, there are several tall, mature eucalyptus trees (*Eucalyptus* sp.). Some of the eucalyptus trees are in isolated homogeneous clusters, while other eucalyptus trees are intermixed with the vegetation in the riparian corridors and oak woodlands in the west part of the site.

WILDLIFE: Several common bird species were observed in the site during the 2017 and 2018 surveys (Table 1). Red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), mourning dove (*Zenaida macroura*), acorn

woodpecker (*Melanerpes formicivorus*), California towhee (*Pipilo crissalis*), western scrub jay (*Aphelocoma coerulescens*), and Brewer's blackbird (*Euphagus cyanocephalus*) are representative of the avian species observed in the site. A great horned owl (*Bubo virginianus*) was observed along one of the riparian corridors in the west part of the site and a pair of mallards (*Anas platyrhynchos*) was observed along Sonoma Creek. A complete list of all birds observed on-site is presented in Table 1.

The riparian corridors along Sonoma Creek and the intermittent streams in the site provide nesting and foraging habitat for numerous birds protected by the Migratory Bird Treaty Act and Fish and Game Code of California while nesting. Additionally, the relatively larger trees in the riparian corridors and elsewhere in the site are suitable for nesting raptors and other birds. Given the presence of large trees and raptor foraging habitat (i.e., open fields) in and near the site, it is likely one or more pairs of raptors, plus a variety of songbirds, nest in trees in or near the site each year. Several pairs of songbirds likely nest within trees, shrubs, and grassland habitats in and adjacent to the site each year. A large stick nest in a eucalyptus tree just north of the on-site residence (see Photographs in Attachment A) appeared to have been used by nesting raptors in Spring 2018 and may be utilized in future years.

River otter (*Lutra canadensis*) was the only mammal observed in the site; the otter was observed swimming in Sonoma Creek. Additionally sign (scat, tracks, etc.) of raccoon (*Procyon lotor*), mule "black-tailed" deer (*Odocoileus hemionus columbianus*), Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Spermophilus beecheyi*) were observed in the site. A few other mammals common to habitats in the site have potential to occur in the site such as coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), black-tailed hare (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), and Virginia opossum (*Didelphis virginiana*). A number of species of small rodents including mice (*Mus musculus*, *Reithrodontomys megalotis*, and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur.

TABLE 1
WILDLIFE SPECIES OBSERVED IN THE SITE

Birds

Mallard	<i>Anas platyrhynchos</i>
Turkey vulture	<i>Cathartes aura</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Wild turkey	<i>Meleagris gallopavo</i>
Mourning dove	<i>Zenaida macroura</i>
Barn owl	<i>Tyto alba</i>
Great-horned owl	<i>Bubo virginianus</i>
Acorn woodpecker	<i>Melanerpes formicivorus</i>
Black phoebe	<i>Sayornis nigricans</i>
Western kingbird	<i>Tyrannus verticalis</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Western scrubjay	<i>Aphelocoma coerulescens</i>
American crow	<i>Corvus brachyrhynchos</i>
American robin	<i>Turdus migratorius</i>
Northern mockingbird	<i>Mimus polyglottos</i>
California towhee	<i>Pipilo crissalis</i>

Mammals

California ground squirrel	<i>Spermophilus beecheyi</i>
Botta's pocket gopher	<i>Thomomys bottae</i>
River otter	<i>Lutra canadensis</i>
Raccoon	<i>Procyon lotor</i>
Mule (black-tailed) deer	<i>Odocoileus hemionus columbianus</i>

Reptiles and Amphibians

Western fence lizard	<i>Sceloporus occidentalis</i>
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Fish

Northern pikeminnow	<i>Ptychocheilus oregonensis</i>
Sacramento sucker	<i>Catostomus occidentalis</i>
Steelhead (Central California Coast DPS)	<i>Oncorhynchus mykiss irideus</i>

Western fence lizard (*Sceloporus occidentalis*) was the only amphibian observed in the site during the survey. Due to lack of suitable habitat and the location of the site in town, few amphibians and reptiles are expected to use habitats in the site. Common species such as and garter snake (*Thamnophis sirtalis*), Pacific chorus frog (*Pseudacris regilla*), and gopher snake (*Pituophis melanoleucus*) likely occur in the site. Sonoma Creek also provides suitable habitat for Pacific pond turtle (*Emys marmorata*), which is discussed further below.

A few fish were observed in Sonoma Creek during the July 2018 field survey when the water was clear and shallow, providing good opportunities for viewing with binoculars. Fish species observed include northern pikeminnow (*Ptychocheilus oregonensis*), Sacramento sucker (*Catostomus occidentalis*), and a juvenile Central Coast steelhead (*Oncorhynchus mykiss irideus*). The intermittent creeks in the west part of the site were dry during almost every survey and do not have hydrological regimes that would provide habitat for any species of fish.

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. Both CDFW and ACOE have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

“Waters of the U.S.”, as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their tributaries. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the “ordinary high water mark”. The ordinary high water mark is established by physical characteristics

such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

A total of 3.22 acres of potentially jurisdictional Waters of the U.S., including wetlands, were delineated in the site including 1.25 acres of a perennial stream, 0.83 acres of intermittent streams, and 1.14 acres of seasonal wetlands (Attachment C). This acreage was verified by ACOE in the field on May 7, 2018 and a certified Preliminary Jurisdictional Determination was issued on June 25 (2018) (Attachment C).

Sonoma Creek is a perennial stream that flows through and spans the east edge of the parcel (Attachment C and photographs in Attachment B). Sonoma Creek flows generally northwest to southeast along the east edge of the site and is in the bottom of a “u-shaped” canyon with near-vertical walls incised approximately 20 feet in elevation below the fields to the west. The creek supports a well-developed riparian corridor and substrates in the stream channel are primarily cobbles with some gravels, as well as patches of exposed bedrock. Sonoma Creek carries substantial flows during or shortly after heavy rain events in the winter and spring, and very low flows during the summer and fall.

There are three intermittent streams in the west part of the site (Attachment C and photographs in Attachment B). The largest intermittent stream flows into the northern part of the site through a culvert and flows generally north to south prior to exiting the site in a culvert under Agua Caliente Road. The other two intermittent streams are tributaries to the primary stream. All of the intermittent streams in the site are tributaries to the Sonoma Creek southeast of the site.

Sonoma Creek is a Water of the U.S. that is tributary to San Pablo Bay. All three intermittent streams are similar in appearance with a dense tree canopy, “U-shape” cross-section, and a scoured active channel, and the substrates in the active channels of the streams are primarily cobbles with some gravels and limited pockets of sands. The intermittent streams carry water primarily during or shortly after heavy rain events in the winter and spring and support relatively well-developed riparian corridors.

There are 20 seasonal wetlands in the site, located primarily in relatively flat areas in the east part of the site. The seasonal wetlands are within shallow topographic basins, and most of the seasonal wetlands appear to pond water only to depths of approximately 4 to 8 inches. The seasonal wetlands are vegetated with predominantly hydrophytic species. Perennial ryegrass, meadow barley, and annual semaphore grass (*Pleuropogon californicus var. californicus*) are the more dominant species in the seasonal wetlands. The seasonal wetlands support these species, as well as creeping spike-rush (*Eleocharis macrostachya*), pointed rush (*Juncus oxymersis*), spreading rush (*Juncus patens*), curly dock (*Rumex crispus*), and seaside barley.

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

Special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The presence of species with legal protection under the Endangered Species Act

often represents a major constraint to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species.

Special-status plants are those which are designated rare, threatened, or endangered and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2018). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on CNPS List 3.

The likelihood of occurrence of listed, candidate, and other special-status species in the site is generally low. Table 2 provides a summary of the listing status and habitat requirements of special-status species that have been documented in the greater project vicinity or for which there is potentially suitable habitat in the greater project vicinity. This table also includes an assessment of the likelihood of occurrence of each of these species in the site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability, and field observations.

SPECIAL-STATUS PLANTS: Fifteen (15) species of special-status plants were identified in the CNDDDB (2018) search area, which included the USGS 7.5-minute Glen Ellen and Sonoma topographic quadrangles. Special-status plants identified in the search include Franciscan onion (*Allium peninsulare* var. *franciscanum*), Napa false indigo (*Amorpha californica* var. *napensis*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Sonoma sunshine (*Blennosperma bakeri*), narrow-anthered California brodiaea (*Brodiaea californica* var. *leptandra*), Rincon Ridge ceanothus (*Ceanothus confusus*), Sonoma ceanothus (*Ceanothus sonomensis*), dwarf downingia (*Downingia*

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
PLANTS						
Franciscan onion	<i>Allium peninsulare</i> var. <i>franciscanum</i>	None	None	1B	Valley and foothill grassland, cismontane woodland.	Unlikely: the site is highly disturbed land provides only marginally suitable habitat for Franciscan onion. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 2.5 mile southeast of the site.
Napa false indigo	<i>Amorpha californica</i> var. <i>napensis</i>	None	None	1B	Broadleaved upland forest, chaparral, cismontane woodland.	Unlikely: the site provides only marginally suitable habitat for this species; the site is also well below the elevation range of this species (CNPS, 2018). The nearest occurrence of Napa false indigo in the CNDDDB (2018) search area is approximately 3 miles north of the site.
Big-scale balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	None	None	1B	Chaparral, valley and foothill grassland, cismontane woodland.	Unlikely: the site provides only marginally suitable habitat for big-scale balsamroot. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 3 miles southeast of the site.
Sonoma sunshine	<i>Blennosperma bakeri</i>	E	E	1B	Vernal pools, valley and foothill grassland.	Unlikely: the upland grassland in the site provides only marginally suitable habitat for Sonoma sunshine. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 3 miles southeast of the site. The CNDDDB describes this population as “extirpated” (i.e., it no longer exists) and notes that no habitat remains for this species in the vicinity of Sonoma.
Narrow-anthered California brodiaea	<i>Brodiaea californica</i> var. <i>leptandra</i>	None	None	1B	Broadleaved upland forest, chaparral, lower montane coniferous forest	Unlikely: the site provides only marginally suitable habitat for narrow-anthered California brodiaea; the site is also well below the elevation range of this species (CNPS, 2018). The nearest occurrence of narrow-anthered California brodiaea in the CNDDDB (2018) search area is approximately 2.5 miles southeast of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
Rincon Ridge ceanothus	<i>Ceanothus confusus</i>	None	None	1B	Closed-cone coniferous forest, chaparral, cismontane woodland.	Unlikely: the site provides only marginally suitable habitat for Rincon Ridge ceanothus; the site is also just below the known elevation range of this species (CNPS, 2018). The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 6 miles southeast of the site.
Sonoma ceanothus	<i>Ceanothus sonomensis</i>	None	None	1B	Chaparral on sandy serpentine or volcanic soils.	Unlikely: the site provides only marginally suitable habitat for Sonoma ceanothus; the site is also well below the known elevation range of this species (CNPS, 2018). The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 2 miles northeast of the site.
Dwarf downingia	<i>Downingia pusilla</i>	None	None	2	Vernal pools.	Unlikely: there are no vernal pools in the site. The nearest occurrence of dwarf downingia in the CNDDDB (2018) search area is approximately 2.5 miles southwest of the site.
Fragrant fritillary	<i>Fritillaria liliacea</i>	None	None	1B	Coastal scrub, valley and foothill grassland and coastal prairie; often serpentine soils.	Unlikely: the site provides only marginally suitable habitat for fragrant fritillary. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 2.5 miles southwest of the site.
Congested-headed hayfield tarplant	<i>Hemizonia congesta</i> ssp. <i>congesta</i>	None	None	1B	Valley and foothill grassland.	Low: the site provides potentially suitable habitat for congested-headed hayfield tarplant, but was not observed by during the 2018 rare plant surveys (Attachment D). The nearest occurrence of this species in the CNDDDB (2018) search area is one historical record from 1909 mapped nonspecifically approximately 4 miles southeast of the site.
Thin-lobed horkelia	<i>Horkelia tenuiloba</i>	None	None	1B	Broadleafed upland forest, chaparral, valley and foothill grassland.	Unlikely: the site provides only marginally suitable habitat for this species. The nearest occurrence of thin-lobed horkelia in the CNDDDB (2018) search area is approximately 4 miles northeast of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
Burke's goldfields	<i>Lasthenia burkei</i>	E	E	1B	Vernal pools and seasonal wetlands	Unlikely: the site provides only marginally suitable habitat for Burke's goldfields and this showy species was not observed in the site. There are no occurrences of Burke's goldfields in the CNDDDB (2018) search area.
Legenere	<i>Legenere limosa</i>	None	None	1B	Vernal pools.	Unlikely: there are no vernal pools in the project site. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 6 miles northwest of the project site.
Jepson's leptosiphon	<i>Leptosiphon jepsonii</i>	None	None	1B	Chaparral, cismontane woodland.	Unlikely: the site provides only marginally suitable habitat for Jepson's leptosiphon; the site is also well below the known elevation range of this species (CNPS, 2018). The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 4.5 miles west of the site.
Cobb Mountain lupine	<i>Lupinus sericatus</i>	None	None	1B	Chaparral, cismontane woodland, lower montane coniferous forest.	Unlikely: the site provides only marginally suitable habitat for Cobb Mountain lupine; the site is also well below the known elevation range of this species (CNPS, 2018). The nearest occurrence of Cobb Mountain lupine in the CNDDDB (2018) search area is approximately 4 miles northeast of the site.
Oval-leaved viburnum	<i>Viburnum ellipticum</i>	None	None	2	Chaparral, cismontane woodland, and lower montane coniferous forest.	Unlikely: the site does not contain suitable habitat for this species and is also well below the known elevation range of oval-leaved viburnum (CNPS, 2018). The nearest occurrence of this species in the CNDDDB (2018) search area is in a broad area approximately 3 miles southeast of the site.
WILDLIFE						
Birds						
Northern spotted owl	<i>Strix occidentalis caurina</i>	T	T	N/A	Mixed aged stands of old growth and mature trees; occasionally found in younger forests.	Unlikely: the site does not provide suitable habitat for this species. There are no occurrences of northern spotted owl in the CNDDDB (2018) search area.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	T	E	N/A	Nests in riparian forests, along the broad, lower flood-bottoms of larger river systems.	Unlikely: the Sonoma Creek riparian corridor provides marginally suitable nesting habitat for this species. The nearest occurrence of western yellow-billed cuckoo in the CNDDDB (2018) search area is approximately 7 miles northwest of the site.
White-tailed kite	<i>Elanus leucurus</i>	None	FP	N/A	Herbaceous lowlands with variable tree growth and dense population of voles.	Moderate: white-tailed kite could nest in trees on site and may fly over or forage on the site on occasion. The nearest occurrence of white-tailed kite in the CNDDDB (2018) search area is approximately 4 miles west of the site.
Bank swallow	<i>Riparia riparia</i>	None	T	N/A	Nests colonially in riparian habitats; requires vertical banks and cliffs with fine-textured soils.	Unlikely: there is no suitable nesting habitat for bank swallows in the project site. The only occurrence of this species in the CNDDDB (2018) search area is a historic record from 1893, mapped nonspecifically in a five-mile radius encompassing the site.
Burrowing owl	<i>Athene cunicularia</i>	None	SC	N/A	Grasslands, deserts and scrubland; subtterranean nester, dependent upon burrowing mammals.	Unlikely: no burrowing owls, evidence of past occupancy by owls, ground squirrels, or ground squirrel burrows were observed in the site during the recent field survey. The nearest occurrence of burrowing owls in the CNDDDB (2018) search area is approximately 4 miles northwest of the site.
San Pablo song sparrow	<i>Melospiza melodia samuelis</i>	None	SC	N/A	Salt marshes bordering the north side of San Francisco Bay and San Pablo Bay.	Unlikely: the project site does not contain suitable habitat for this species. This species may fly over the site on occasion. The closest occurrence of San Pablo song sparrow in the CNDDDB (2018) search area is approximately 6.5 miles southeast of the site.
Golden eagle	<i>Aquila chrysaetos</i>	None	FP	N/A	Nesting areas are associated with cliff-walled canyons and large trees. Forages in rolling hills and mountain areas.	Unlikely: the trees within the site provide poor quality nesting habitat for golden eagles, as they prefer ledges on cliff walls or very large trees and isolated from any type of disturbance. The nearest occurrence of golden eagle in the CNDDDB (2018) search area is approximately 4 miles west of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
Black swift	<i>Cypseloides niger</i>	None	SC	N/A	Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea bluffs above the surf; forages widely.	Unlikely: the project site does not contain suitable habitat for this species. This species may fly over the site on occasion. The closest occurrence of black swift in the CNDDDB (2018) search area is approximately 4.5 miles northeast of the site.
Grasshopper sparrow	<i>Ammodramus savannarum</i>	None	SC	N/A	Occurs primarily in dry densely vegetated grasslands in the eastern San Joaquin Valley and coastal foothills.	Low: the project site does not contain suitable habitat for grasshopper sparrow. This species may fly over the site on occasion. The closest occurrence of grasshopper sparrow in the CNDDDB (2018) search area is approximately 6.5 miles northwest of the site.
Yellow rail	<i>Coturnicops noveboracensis</i>	None	SC	N/A	Fresh water marshlands, summer residence in eastern Sierra Nevada in Mono County.	Unlikely: the site does not provide suitable marsh habitat for this species. The nearest occurrence of western yellow rail in the CNDDDB (2018) search area is an historical (1898) record mapped nonspecifically in the vicinity of Sonoma approximately 3 miles southeast of the site.
Mammals						
American badger	<i>Taxidea taxus</i>	None	SC	N/A	A variety of habitat types with friable soils for digging.	Unlikely: the site does not contain burrow habitat for this species; no evidence of American badger was observed in the site. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 4.5 miles northwest of the site.
Pallid bat	<i>Antrozous pallidus</i>	None	SC	N/A	Open and dry habitats with rocky areas for roosting.	Unlikely: pallid bat may fly over or forage on the site on occasion, but this site does not contain rocky areas for roosting. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 2 miles southeast of the site.
Salt-marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E	E	N/A	Saline emergent wetlands dominated by pickleweed.	Unlikely: the project site does not contain suitable emergent wetland habitat for this species. There are no occurrences of the Salt-marsh harvest mouse recorded in the CNDDDB (2018) in the search area.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
Reptiles & Amphibians						
California tiger salamander	<i>Ambystoma californiense</i>	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) and grassland/ woodland habitats with summer refugia (i.e., burrows).	Unlikely: there is no suitable California tiger salamander breeding habitat in or near the site. The nearest occurrence of this species in the CNDDDB (2018) search area is 8+/- miles southwest of the site. The site is not within designated critical habitat for California tiger salamander (USFWS, 2011).
California red-legged frog	<i>Rana aurora draytonii</i>	T	SC	N/A	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Unlikely: Sonoma Creek provides marginally suitable habitat for California red-legged frog. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 4.5 miles northwest of the site. The site is not within designated critical habitat for California red-legged frog (USFWS, 2006).
Foothill yellow-legged frog	<i>Rana boylei</i>	None	SC	N/A	Rocky perennial streams in the Sierra and coastal foothills.	Unlikely: Sonoma Creek provides marginally suitable habitat for foothill yellow-legged frog. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 2.5 miles southwest of the site.
Pacific pond turtle	<i>Emys marmorata</i>	None	SC	N/A	Ponds, marshes, streams, and ditches with emergent aquatic vegetation and basking areas.	Moderate: Sonoma Creek provides suitable habitat for Pacific pond turtle. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 4 miles west of the site.
Green sea turtle	<i>Chelonia mydas</i>	T	None	N/A	Tropical and subtropical waters along continental coasts.	Unlikely: the site does not provide suitable habitat for this species. There are no occurrences of green sea turtle recorded in the CNDDDB (2018) in the search area.
Red-bellied newt	<i>Taricha rivularis</i>	None	SC	N/A	Coastal forests; breeds in streams	Low: Sonoma Creek may provide suitable breeding habitat for red-bellied newt. The nearest occurrence of this species in the CNDDDB (2018) is a historical record (1977) mapped nonspecifically in the vicinity of Sonoma approximately 3.5 miles north of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Project Site
California giant salamander	<i>Dicamptodon ensatus</i>	None	SC	N/A	Coastal forests; breeds in streams.	Low: Sonoma Creek may provide suitable breeding habitat for California giant salamander. The nearest occurrence of this species in the CNDDDB (2018) search area is a historical record (1977) mapped nonspecifically just east of the site.
Fish						
Steelhead - central California coast DPS	<i>Oncorhynchus mykiss irideus</i> pop. 8	T	None	N/A	Riffle and pool complexes with adequate spawning substrates within Central Valley drainages.	High: Sonoma Creek provides suitable habitat for Central Valley steelhead. During a 2018 survey, a juvenile salmonid with steelhead coloration (bright pink lateral line) was observed in Sonoma Creek. The nearest record in the CNDDDB (2018) search area is approximately 2.5 miles southwest of the site. Sonoma Creek is designated critical habitat for Central California coast steelhead (NOAA, 2005).
Delta smelt	<i>Hypomesus transpacificus</i>	T	T	N/A	Shallow lower delta waterways with submersed aquatic plants and other suitable refugia.	Unlikely: the site does not provide suitable aquatic habitat for delta smelt. There are no occurrences of this species in the CNDDDB (2018) search area. The site is not within designated critical habitat for delta smelt (USFWS, 1994).
Invertebrates						
San Bruno elfin butterfly	<i>Incisalia mossii bayensis</i>	E	None	N/A	Rocky outcrops and cliffs in coastal scrub habitats.	Unlikely: the site does not provide suitable habitat for this species. There are no occurrences of San Bruno elfin butterfly recorded in the CNDDDB (2018) in the search area.
California freshwater shrimp	<i>Syncaris pacifica</i>	E	None	N/A	Low-elevation perennial streams in the northern Bay Area.	High: Sonoma Creek provides suitable aquatic habitat for this species. The nearest occurrence of California freshwater shrimp in the CNDDDB (2018) search area is in Sonoma Creek, approximately 1 mile southeast of the site.

1 T = Threatened; E = Endangered.

2 T = Threatened; E = Endangered; FP = State of California Fully Protected Species; SC = State of California Species of Special Concern.

3 CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere; List 2 includes plants that are rare, threatened or endangered in California but are more common elsewhere.

pusilla), fragrant fritillary (*Fritillaria liliacea*), congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), thin-lobed horkelia (*Horkelia tenuiloba*), legeneria (*Legeneria limosa*), Jepson's leptosiphon (*Leptosiphon jepsonii*), Cobb Mountain lupine (*Lupinus sericatus*), and oval-leaved viburnum (*Viburnum ellipticum*) (Table 2 and Attachment A). Sonoma sunshine and Burke's goldfields (*Lasthenia burkei*) are the only special-status plants listed in the USFWS IPaC Trust Report.

Salix Consulting Inc. queried a much larger geographical area in the CNDDDB (2018) in their analysis of special-status plants, encompassing 540+/- acres surrounding the site (see Rare Plant Survey Report in Attachment D). In addition to the Glen Ellen and Sonoma topographic quadrangles, the Salix search also included the Kenwood, Rutherford, Petaluma River and Sears Point topographic quadrangles. Twelve (12) additional plants were identified in this expanded CNDDDB search: Sonoma Alopecurus (*Alopecurus aequalis sonomensis*), Clara Hunt's milkvetch (*Astragalus claranus*), Pappose tarplant (*Centromadia parryi parryi*), streamside daisy (*Erigeron biolettii*), Jepson's coyote thistle (*Eryngium jepsonii*), Pitkin Marsh lily (*Lilium pardalinum*), Mount Diablo cottonweed (*Micropus amphibolus*), Petaluma popcornflower (*Plagiobothrys mollis vestitus*), Point Reyes checkerbloom (*Sidalcea calycosa rhizomata*), Kenwood Marsh checkerbloom (*Sidalcea oregano* ssp. *valida*), two-forked clover (*Trifolium amoenum*) and oval-leaved viburnum (*Viburnum ellipticum*).

Twenty-one (21) of the 47 special-status plant species identified by Salix Consulting Inc. were determined to have at least some potential to occur in the site based on the presence of at least marginally suitable habitat. The Rare Plant Survey Report (Attachment D) provides a full species account, description of nearby populations, and an assessment of the potential for occurrence of each of these species to occur in the site.

No areas of highly suitable for special-status plant species and no special-status plants were observed in the site during the 2017 and 2018 surveys. The

grasslands in the site provide potentially suitable habitat for congested-headed hayfield tarplant. The nearest occurrence of this species in the CNDDDB (2018) search area is an historical record from 1909 mapped nonspecifically approximately 4 miles southeast of the site. Congested-headed hayfield tarplant was not observed by Salix Consulting during the 2018 rare plant surveys (Attachment D).

The site is either entirely unsuitable or contains only marginal quality habitat for several other for special-status plant species identified in the expanded CNDDDB search or on the IPaC Trust Report. Based on marginal habitat quality, negative survey results, and paucity of records in the CNDDDB near the site, it is unlikely special-status plants occur in the site.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of the site by special-status wildlife species is low. Special-status wildlife species recorded in project area in the CNDDDB (2018) query include western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), white-tailed kite (*Elanus leucurus*), bank swallow (*Riparia riparia*), burrowing owl, San Pablo song sparrow (*Melospiza melodia samuelis*), golden eagle (*Aquila chrysaetos*), black swift (*Cypseloides niger*), grasshopper sparrow (*Ammodramus savannarum*), yellow rail (*Coturnicops noveboracensis*), American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora draytonii*), foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Emys marmorata*), red-bellied newt (*Taricha rivularis*), California giant salamander (*Dicamptodon ensatus*), Central Coast steelhead (*Oncorhynchus mykiss irideus*), and California freshwater shrimp (*Syncaris pacifica*). Northern spotted owl (*Strix occidentalis caurina*), salt-marsh harvest mouse (*Reithrodontomys raviventris*), green sea turtle (*Chelonia mydas*), San Bruno elfin butterfly (*Callophrys mossii bayensis*) and delta smelt (*Hypomesus transpacificus*) are not recorded in the CNDDDB (2018) within the search area, but are on the USFWS IPaC Trust Report (Attachment A).

While the project site may have provided habitat for several special-status wildlife species at some time in the past, development and agriculture have substantially modified natural habitats in the greater project vicinity, including those within the site. Only a few special-status wildlife species identified in the CNDDDB have the potential to occur in the site on more than a transitory or very occasional basis and are discussed further below.

CALIFORNIA RED-LEGGED FROG: California red-legged frog was listed by the USFWS as a threatened species in May 1996. Red-legged frog is also classified by CDFW as a Species of Special Concern. Once abundant in low-elevation Sierra Nevada and Coastal foothills streams, this species now occurs in a patchy distribution throughout a fraction of its historic range. The California red-legged frog typically breeds in perennial or nearly perennial well-shaded woodland ponds or the deeper plunge-pools of well-shaded streams.

California red-legged frog is not documented in Sonoma Creek in or near the site. The nearest occurrences of California red-legged frog are approximately 4.5 miles west and northwest of the site on the west side of the Sonoma Mountains (CNDDDB, 2018). The site is not within designated critical habitat for California red-legged frog (USFWS, 2006).

Sonoma Creek provides some characteristics of California red-legged frog breeding habitat, with flowing water and some pools. However, the limited shrubby or emergent riparian vegetation along the banks of the creek to provide cover, absence of deep pools, and presence of predatory fish, reduces the habitat quality and the potential for occupation of this section of Sonoma Creek by California red-legged frog. The intermittent creeks in the west part of the site do not have hydrological regimes that would provide habitat for California red-legged frog. The combined lack of highly suitable habitat and lack observations of this species within several miles of the site renders it unlikely for California red-legged frog to occur within or immediately adjacent to the site.

PACIFIC POND TURTLE: The Pacific pond turtle is a state species of concern, but is not a listed species at the state or federal level. Pacific pond turtles are associated with permanent or nearly permanent bodies of water with adequate basking sites such as logs, rocks or open mud banks. Pond turtles construct nests in sandy banks along slow moving streams and ponds in the spring and the young usually hatch in 2 to 3 months. The nearest occurrence of this species in the CNDDDB (2018) search area is approximately 4 miles west of the site.

Sonoma Creek provides suitable habitat for Pacific pond turtle. If Pacific pond turtles are present in the section of Sonoma Creek along the east edge of the site, it is possible they utilize grasslands in the project vicinity for nesting. However, due to the steep and near-vertical stream banks in and adjacent to the project site, it is unlikely Pacific pond turtles nest in the grasslands in the site. The intermittent creeks in the west part of the site do not have hydrological regimes that would provide habitat for Pacific pond turtle.

CENTRAL CALIFORNIA COAST STEELHEAD: Central California Coast steelhead Distinct Population Segment (DPS) was first listed as federally threatened on August 18, 1997 and reaffirmed on January 5, 2006. The listing was modified to include two artificial propagation programs on April 14, 2014. Currently, the Central California Coast steelhead DPS includes all naturally spawned anadromous steelhead originating below both natural and manmade barriers from the Russian River to Aptos Creek, Santa Cruz County, and drainages of both San Francisco and San Pablo Bays eastward to Chips Island at the confluence of the Sacramento and San Joaquin Rivers. Additionally, steelhead from two propagation programs (Don Clausen Fish Hatchery Program and Kingfisher Flat Hatchery Program) are included in the Central California Coast steelhead DPS (NOAA, 2014).

Critical habitat was designated for Central California Coast steelhead on September 2, 2005, and includes numerous streams in the greater project

vicinity, including Sonoma Creek along the east edge of the project site (NOAA, 2005). Sonoma Creek has been determined to support an “essential population” of Central California Coast steelhead and provides suitable spawning and rearing habitat for steelhead that occur in the creek on a seasonal basis.

Central California Coast steelhead move up main-stem rivers, and their tributaries, to spawn during the winter months. The young then live in the river for up to two years before going back out to sea. Most steelhead spawning migration occurs between from October through February and spawning occurs from December to April. Newly emerged fry move to shallow stream margins to escape high water velocities and predation. During high flow events, juveniles outmigrate to the ocean. Sonoma Creek is used by adult, fry, and juvenile steelhead; the creek provides higher water velocity habitats with suitable gravels for spawning, and shallow slower waters for rearing. The riparian corridor along the banks of the creek provides food, cover, and shade.

During the July 2018 survey, a juvenile salmonid with steelhead coloration was observed in a shallow pool in Sonoma Creek, swimming with a school of northern pikeminnow. This approximately 6-inch long fish was highly speckled with parr marks and had a bright pink lateral line. The nearest record of Central California coast steelhead in the CNDDDB (2018) search area is approximately 2.5 miles southwest of the site. Sonoma Creek is designated critical habitat for Central California coast steelhead (NOAA, 2005).

CALIFORNIA FRESHWATER SHRIMP: Historically, the California freshwater shrimp was relatively common in low elevation, perennial freshwater streams in Marin, Sonoma, and Napa counties. The species is now restricted to the Russian River watershed, several smaller coastal streams, and a few streams including Sonoma Creek that flow south into the San Pablo Bay. Preferred habitat is found in creeks with water depths between approximately 1 to 3 feet, undercut banks with exposed rootwads and overhanging riparian vegetation. The nearest

occurrence of California freshwater shrimp in the CNDDDB (2018) search area is in Sonoma Creek, approximately 1 mile southeast of the site.

Sonoma Creek provides suitable habitat for California freshwater shrimp. This species has been found in the creek both upstream and downstream of the project site and California freshwater shrimp are likely present in at least parts of Sonoma Creek along the east edge of the site. The intermittent creeks in the west part of the site do not have hydrological regimes that would provide habitat for California freshwater shrimp.

OTHER SPECIES: The project site does not provide suitable habitat for the remaining species in Table 2. Special-status birds including western yellow-billed cuckoo could potentially utilize the riparian areas of Sonoma Creek for nesting and foraging. Additionally, white-tailed kite may nest in large trees in the site and forage in the grasslands in the site. A variety of songbirds, including grasshopper sparrow, may nest in grasslands in the site. Special-status bats may also fly over the area on occasion, but would not be expected to roost in the site.

The site does not contain forest habitat required by northern spotted owl. No cliffs appearing suitable for nesting bank swallows were observed along Sonoma Creek or elsewhere in the site. The site does not contain suitable habitat for salt-marsh associated species such as San Pablo song sparrow, yellow rail, or salt-marsh harvest mouse. There is no suitable aquatic habitat for delta smelt which is generally restricted to the bay and lower delta. Sonoma Creek may provide suitable aquatic habitat for foothill yellow-legged frog, California giant salamander, and red-bellied newt. There are no vernal pools or seasonal wetlands in the site for vernal pool fairy shrimp or other listed shrimp species; the project is expected to have no effect on listed vernal pool branchiopods. The site does not provide coastal scrub habitat in the site for San Bruno elfin butterfly.

CRITICAL HABITAT: Several rivers and creeks in the project vicinity are designated critical habitat for Central Coast steelhead (NOAA, 2005), including Sonoma Creek, which borders the east edge of the site. The body of the site to the west of the Sonoma Creek is not in designated critical habitat of any federally listed species (Attachment D). There is a polygon of designated critical habitat for California red-legged frog (USFWS, 2006) a few miles west of the site and a polygon of designated critical habitat for Northern spotted owl (USFWS, 2012) several miles east of the site (Attachment D). The nearest polygon of California tiger salamander designated critical habitat is approximately 10 miles west of the site, in and surrounding Santa Rosa.

Conclusions and Recommendations

- The site consist of upland grasslands, a few patches of oak woodlands, bands of riparian woodlands along the creeks, and a few clusters of eucalyptus. The site also contains part of a Sonoma Creek, a few intermittent streams, and numerous widely scattered seasonal wetlands.
- A total of 3.22 acres of potentially jurisdictional Waters of the U.S., including wetlands were delineated in the site, including 1.25 acres of a perennial stream, 0.83 acres of intermittent streams, and 1.14 acres of seasonal wetlands. The ACOE issued a certified Preliminary Jurisdictional Determination on June 25, 2018.
- Avoidance of jurisdictional Waters of the U.S. is recommended, if possible by thoughtful project planning. Direct and impacts should be minimized to the maximum extent practicable. For example, road crossings of any creeks should be as narrow and perpendicular to the creek as possible, with “clear-span” bridges being utilized if possible to entirely span the jurisdictional areas. Storm drain outfalls should be stabilized to prevent scour and potential sedimentation of the creeks and downstream

waterways; storm water should also be cleansed prior to discharge to surface waters. Further, naturally vegetated buffers outside of jurisdictional Waters of the U.S. are recommended, as feasible, to minimize indirect impacts of the proposed development on aquatic habitats and their associated species.

- If complete avoidance of jurisdictional Waters of the U.S. is infeasible, permits from ACOE, CDFW, and the Regional Water Quality Control Board (RWQCB) will then be needed prior to the placement of any fill material (e.g., culverts, fill dirt, rock) within jurisdictional Waters of the U.S. As a part of the permit process, ACOE would be expected to consult with USFWS and the National Marine Fisheries Service on potential project effects to federally listed species.
- Due to a lack of suitable habitat and negative survey results, it is unlikely that special-status plants occur in the site.
- Due to a lack of suitable habitat, only a few special-status wildlife species have much potential to occur in or near the site on more than an occasional basis. Sonoma Creek provides suitable habitat for Central California coast steelhead California freshwater shrimp, California red-legged frog, and Pacific pond turtle. Western yellow-billed cuckoo could potentially utilize the riparian areas of Sonoma Creek for nesting. White-tailed kite may nest in large trees in the site and grasshopper sparrow, may nest in grasslands in the site.
- Sonoma Creek is designated critical habitat for Central Coast steelhead. The body of the site to the west of the Sonoma Creek is not in designated critical habitat of any federally listed species.
- Trees, shrubs, and grasslands in the site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. If tree removal is

scheduled during the nesting season of raptors (January 1 through July 31), a pre-construction survey for nesting raptors is recommended. If other vegetation removal or construction commences during the general avian nesting season (March 1 through July 31), a pre-construction survey for all species of nesting birds is recommended. If active nests are found, work in the vicinity of the nests should be delayed until the young fledge.

We hope this information is useful. Please call me at (209) 745-1159 with any questions.

Sincerely,



Diane S. Moore, M.S.
Principal Biologist

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ATTACHMENT A

CNDDDB Summary Report and Exhibits
& USFWS IPaC Trust Resource Report



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad(Glen Ellen (3812235)> OR (Sonoma (3812234))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Ammodramus savannarum</i> grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
<i>Blennosperma bakeri</i> Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
<i>Buteo regalis</i> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<i>Caecidotea tomalensis</i> Tomales isopod	ICMAL01220	None	None	G2	S2S3	
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
<i>Ceanothus sonomensis</i> Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Coturnicops noveboracensis</i> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eremophila alpestris actia</i> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Hemizonia congesta ssp. congesta</i> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<i>Horkelia tenuiloba</i> thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	PDPLM09140	None	None	G3	S3	1B.2
<i>Lupinus sericatus</i> Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<i>Myotis thysanodes</i> fringed myotis	AMACC01090	None	None	G4	S3	
<i>Myotis volans</i> long-legged myotis	AMACC01110	None	None	G5	S3	
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
<i>Oncorhynchus mykiss irideus pop. 8</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	

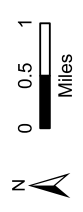
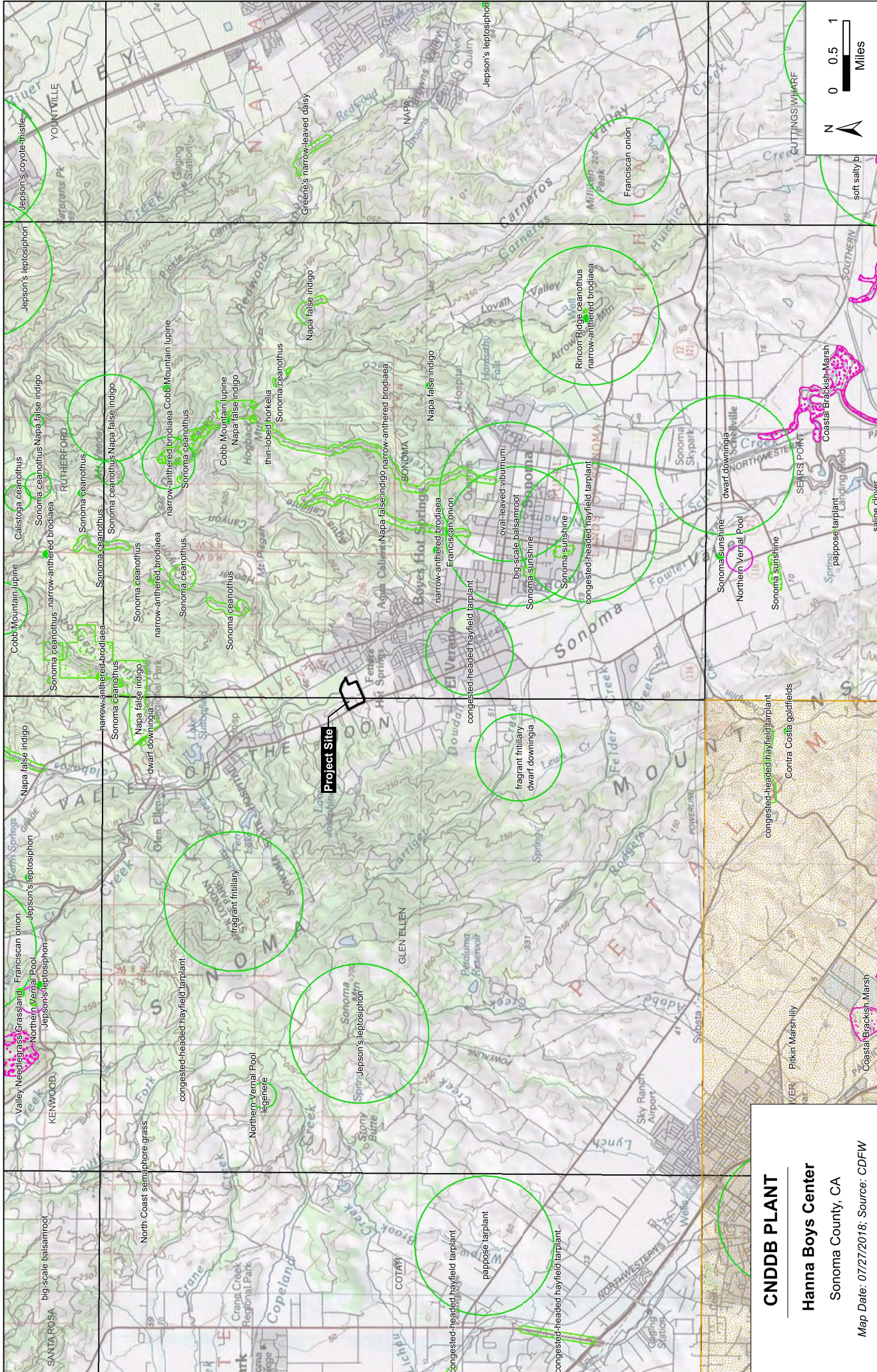


Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Viburnum ellipticum</i> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 45



Project Site

CNDDDB PLANT

Hanna Boys Center
Sonoma County, CA

Map Date: 07/27/2018; Source: CDFW

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

Sonoma County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

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 species¹ 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:

Mammals

NAME

STATUS

Salt Marsh Harvest Mouse *Reithrodontomys raviventris*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/613>

Birds

NAME

STATUS

Northern Spotted Owl *Strix occidentalis caurina*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/1123>

Yellow-billed Cuckoo *Coccyzus americanus*

Threatened

There is **proposed** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/3911>

Reptiles

NAME

STATUS

Green Sea Turtle *Chelonia mydas*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6199>

Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/2891>

Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/321>

Insects

NAME

STATUS

San Bruno Elfin Butterfly *Callophrys mossii bayensis* Endangered
There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
<https://ecos.fws.gov/ecp/species/3394>

Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4338	Endangered
Sonoma Sunshine <i>Blennosperma bakeri</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1260	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 Act¹ 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/nationwidestandardconservationmeasures.pdf>

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>

<p>Bald Eagle <i>Haliaeetus leucocephalus</i> 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</p>	<p>Breeds Jan 1 to Aug 31</p>
<p>Nuttall's Woodpecker <i>Picoides nuttallii</i> 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</p>	<p>Breeds Apr 1 to Jul 20</p>
<p>Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656</p>	<p>Breeds Mar 15 to Jul 15</p>
<p>Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds Feb 20 to Sep 5</p>
<p>Spotted Towhee <i>Pipilo maculatus clementae</i> 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</p>	<p>Breeds Apr 15 to Jul 20</p>
<p>Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds Mar 15 to Aug 10</p>

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.

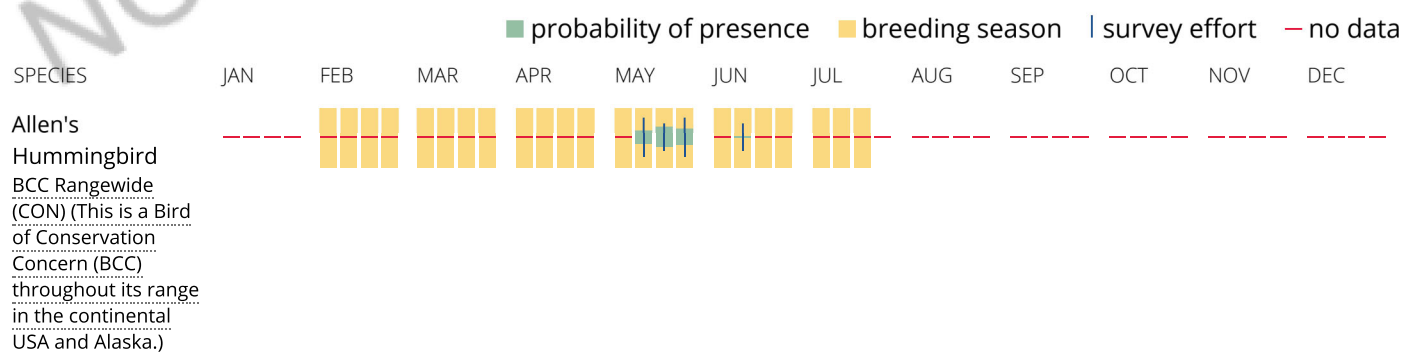
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.





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 [E-bird Explore Data 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 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 FORESTED/SHRUB WETLAND

[PFOA](#)

[PFOC](#)

[PSSC](#)

RIVERINE

[R2UBH](#)

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.

NOT FOR CONSULTATION

ATTACHMENT B

Photographs



Annual grassland in the southwest part of the site, looking southwest; 07/03/18.



Cluster of large eucalyptus trees in the southwest part of the site, looking northwest; 07/03/18.



Oak woodland on a hillside in the north-central part of the site, looking southeast; 07/03/18.



Patch of blackberry brambles near the barn on the top of the hill, looking southeast; 07/03/18.



Seasonal Wetland SW-11, looking southwest; 05/10/17. The wetlands in the east-central part of the site are situated on a flat terrace and are very shallow.



Phalaris dominated upland grassland in the northeast part of the site, looking northeast; 06/16/17.



Seasonal Wetland SW-3, looking southeast; 05/10/17. The wetlands in the east-central part of the site are situated on a flat terrace and are very shallow.



Seasonal Wetland SW-8, the deepest wetland in the site, looking northwest; 05/10/17. Later in the spring, there was a dense stand of northern water plantain in the deepest part of the wetland.



Sonoma Creek along the east edge of the site, looking northwest; 07/03/18. The creek is situated in an incised, shaded corridor.



Culvert under a road in the northeast corner of the site, looking northwest; 07/03/18. Intermittent Stream IS-2 flows in to the site in this location.



Intermittent Stream IS-1, looking northwest from just upstream of Data Point 5; 06/16/17.



Intermittent Stream IS-1, looking downstream toward the confluence with IS-2; 06/16/17.



Intermittent Stream IS-2, looking northwest; 06/16/17.



Intermittent Stream IS-3, looking west; 06/16/17.



Culvert under Agua Caliente Road, looking southeast; 07/03/18. Intermittent Stream IS-1 continues southeast and drains in to Sonoma Creek.



Raptor stick nest in a large eucalyptus tree just north of the home site, looking northeast; 07/03/18.

ATTACHMENT C

Verified Wetland Delineation Map



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

September 6, 2018

Regulatory Division

Subject: File No. 2018-00042N

Ms. Diane Moore
Moore Biological Consultants
10330 Twin Cities, Suite 30
Galt, CA 95362

Dear Ms. Moore:

This correspondence is in reference to your submittal of January 11, 2018, on behalf of Wactor & Wick, LLP, requesting a preliminary jurisdictional determination of the extent of navigable waters of the United States (U.S.) and waters of the U.S. occurring on an approximately 60-acre site on the northeast corner of the intersection of Agua Caliente Road West and Arnold Drive (APN 133-112-002), northwest of the City of Sonoma, in Sonoma County, California (38.323289 N, -122.500067 W).

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the U.S.; or below the high tide line in tidal waters of the U.S.; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*). Waters of the U.S. generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the U.S. may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

The enclosed delineation map titled "Preliminary Jurisdictional Determination Pursuant to Section 404 Clean Water Act, Hanna Boys Center, Sonoma, Sonoma County, California," in one sheet and date certified June 25, 2018, depicts the extent and location of wetlands and other

waters of the U.S. within the boundary area of the site that **may be** subject to U.S. Army Corps of Engineers' regulatory authority under Section 404 of the Clean Water Act. This preliminary jurisdictional determination is based on the current conditions of the site, as verified during a field investigation of May 7, 2018 a review of available digital photographic imagery, and a review of other data included in your submittal. While this preliminary jurisdictional determination was conducted pursuant to Regulatory Guidance Letter No. 16-01, *Jurisdictional Determinations*, it may be subject to future revision if new information or a change in field conditions becomes subsequently apparent. The basis for this preliminary jurisdictional determination is fully explained in the enclosed *Preliminary Jurisdictional Determination Form*. You are requested to sign and date this form and return it to this office within two weeks of receipt.

You are advised that the preliminary jurisdictional determination may **not** be appealed through the U.S. Army Corps of Engineers' *Administrative Appeal Process*, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000). Under the provisions of 33 C.F.R § 331.5(b)(9), non-appealable actions include preliminary jurisdictional determinations since they are considered to be only advisory in nature and make no definitive conclusions on the jurisdictional status of the water bodies in question. However, you may request this office to provide an approved jurisdictional determination that precisely identifies the scope of jurisdictional waters on the site; an approved jurisdictional determination may be appealed through the *Administrative Appeal Process*. If you anticipate requesting an approved jurisdictional determination at some future date, you are advised not to engage in any on-site grading or other construction activity in the interim to avoid potential violations and penalties under Section 404 of the Clean Water Act. Finally, you may provide this office new information for further consideration and request a reevaluation of this preliminary jurisdictional determination.

You may refer any questions on this matter to Sarah Firestone of my Regulatory staff by telephone at 415-503-6776 or by e-mail at sarah.m.firestone@usace.army.mil. All correspondence should be addressed to the Regulatory Division, North Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would

like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website:
<http://www.spn.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,

for
Rick M. Bottoms, Ph.D.
Chief, Regulatory Division

Enclosures

Copy Furnished (w/ encls):
Wactor & Wick, LLP, 180 Grand Avenue, Suite 150, Oakland, CA 94612

Copy Furnished (w/ encl 1 only):
CA RWQCB, Oakland, CA

Potential Waters of the U.S. and Wetlands

Hanna Boys Center

Sonoma County, CA
Map Date: 05/16/2018

U.S. Army Corps of Engineers
San Francisco District
Regulatory Division

Preliminary Jurisdictional Determination,
Pursuant to Section 404 Clean Water Act

Hanna Boys Center
Sonoma, Sonoma County, California
(APN: 133-112-002)

Study Area Boundary
Accurate as depicted in legend

File ID: 2018-00042N Date: June 25, 2018 Sheet 1 of 1

POTENTIAL WATERS OF THE U.S. AND WETLANDS

Feature	Label	Area (sf)	Area (acre)
Seasonal Wetland	SW-1	951	0.02
	SW-2	366	0.01
	SW-3	931	0.02
	SW-4	3,029	0.07
	SW-5	2,605	0.06
	SW-6	3,166	0.07
	SW-7	1,603	0.04
	SW-8	5,665	0.13
	SW-9	245	0.01
	SW-10	515	0.01
SW-11	2,600	0.06	
SW-12	8,934	0.21	
SW-13	1,321	0.03	
SW-14	199	0.01	
SW-15	461	0.01	
SW-16	2,499	0.06	
SW-17	6,497	0.15	
SW-18	2,148	0.05	
SW-19	4,601	0.11	
SW-20	628	0.01	
subtotal		48,854	1.14
Intermittent Stream	IS-1	27,159	0.62
	IS-2	5,004	0.11
	IS-3	4,428	0.10
subtotal		36,591	0.83
Perennial Stream	PS-1	56,891	1.25
	subtotal	56,891	1.25
Total		142,336	3.22

Project Area (±60 acres)

3-Parameter Data Point

Existing Culvert

0 200 400
1 inch = 200 feet

Moore Biological Consultants

Ortho Source: Saiki Consulting, Inc. (April 2018)



38.3206722°, -122.4965417°

Data Disclaimer:
This delineation has been done in accordance with the 1987 Wetlands Delineation Manual, the 2001 Wetlands Delineation Manual, and the 2008 Regional Supplement to the Corps of Engineers Wetlands Delineation Manual Arid West Region. The boundaries shown on this map are preliminary and subject to verification by the U.S. Army Corps of Engineers.

ATTACHMENT D

Rare Plant Survey (Salix Consulting, Inc.)



September 11, 2018

Diane S. Moore, M.S.
Principal Biologist
Moore Biological Consultants
10330 Twin Cities Road, Ste. 30
Galt, CA 95632

RE: Hanna Boys Center Rare Plant Survey

Dear Ms. Moore:

At your request, I have conducted a rare plant survey to determine the presence/absence of special-status plant species on approximately 60 acres of the Hanna Boys Center property in Sonoma County. The survey covered state- or federally listed species as well as California Native Plant Society (CNPS) Rank 1, 2, and 3 species.

The Hanna Boys Center is located at 810 Agua Caliente Road (APN #133-112-020), Sonoma, in Sonoma County, California (Figures 1 and 2). The Study Area is located directly east of the Hanna Boys Center campus, east of Arnold Drive, and north of Agua Caliente Road. The approximate coordinates for the center of study area are 38°19'24.05"N and 122°30'01.23"W.

METHODS

The California Natural Diversity Data Base (CNDDDB) (2018) was queried prior to conducting the rare plant survey. The six-quadrangle search area included the Glen Ellen, Sonoma, Kenwood, Rutherford, Petaluma River, and Sears Point USGS quadrangles. Salix also queried the California Native Plant Society Inventory (CNPS 2018) for reported occurrences of special-status plant species within the six-quad area. Figure 3 illustrates special-status plant species occurrences reported by the CNDDDB in the region of the study area.

Of the 47 plant species identified in the CNDDDB and CNPS queries (Appendix A), 26 species were determined to have no potential to occur within the study area due to the lack of suitable habitats or substrates (see descriptions in Appendix A). Twenty-one (21) species were determined to have some potential to occur within the study and are listed in Table 1 below. These species were the focus of the field survey; 14 are reported to have occurred within a 5-mile radius of the study area (Figure 3).

Table 1.
Special-Status Plant Species Determined to Have Potential to Occur within the
Hanna Boys Center Study Area

Species	Status*			Habitat	Potential for Occurrence Within Study Area**
	Federal	State	CNPS		
Plants					
Franciscan onion <i>Allium peninsulare franciscanum</i>	-	-	1B.2	Cismontane woodland; valley and foothill grassland [clay, often serpentine].	Unlikely. Marginal woodland habitat with volcanic substrate.
Sonoma Alopecurus <i>Alopecurus aequalis sonomensis</i>	FE	-	1B.1	Marshes & swamps (freshwater); riparian scrub.	Unlikely. Marginal habitat present.
Napa false indigo <i>Amorpha californica napensis</i>	-	-	1B.2	Broadleaved upland forest (openings); chaparral, cismontane woodland.	Unlikely. Site has marginal woodland habitat.
Clara Hunt's milkvetch <i>Astragalus claranus</i>	FE	CT	1B.1	Cismontane woodland; valley and foothill grassland; [serpentine, volcanic clay].	Unlikely. Marginal grassland and woodland habitat underlain by volcanic substrate present.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	-	-	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, sometimes serpentine	Unlikely. Marginal habitat present in woodland and grassland.
Narrow-flowered California brodiaea <i>Brodiaea leptandra</i>	-	-	1b.2	Broadleaved upland forest; chaparral; lower montane coniferous forest. Volcanic.	Unlikely. Species prefers rocky soil/ barren areas which are lacking. Site below elevational range of species.
Pappose tarplant <i>Centromadia parryi parryi</i>	-	-	1B.2	Coastal prairie; meadows and seeps; marshes and swamps; vernal wet grassland (sometimes alkaline).	Unlikely. Marginal mesic grasslands present, but only one documented occurrence in vicinity from 1933.
Dwarf downingia <i>Downingia pusilla</i>	-	-	2B.2	Valley and foothill grassland (mesic), Vernal pools	Unlikely. Marginal habitat occurs in seasonal wetlands.
Streamside daisy <i>Erigeron biolettii</i>	-	-	3	Broad-leaved upland forest; cismontane woodland; northern coniferous forest [rocky, mesic].	Unlikely. Marginal woodland habitat, but no dry rocky places. Only known occurrence from 1891 around St. Helena.
Jepson's coyote thistle <i>Eryngium jepsonii</i>	-	--	1B.2	Clay. Valley and foothill grassland. Vernal pools.	Unlikely. Marginal habitat present.
Fragrant fritillary <i>Fritillaria liliacea</i>	-	-	1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland, Often serpentine	Unlikely. Marginal grassland habitat present.

**Table 1.
Special-Status Plant Species Determined to Have Potential to Occur within the
Hanna Boys Center Study Area**

Species	Status*			Habitat	Potential for Occurrence Within Study Area**
	Federal	State	CNPS		
Congested-headed hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	-	-	1B.2	Valley and foothill grassland, sometimes roadsides	Possible. Potential suitable grassland habitat present. Occurs within 5 miles of study area.
Legenere <i>Legenere limosa</i>	-	-	1b.1	Vernal pools	Unlikely. Marginal habitat occurs in seasonal wetlands.
Pitkin Marsh lily <i>Lilium pardalinum pitkinense</i>	FE	CE	1B.1	Mesic, sandy. Cismontane woodland. Meadows and seeps. Marshes and swamps (freshwater).	Unlikely. Known only from Pitkin Marsh near Sebastopol. Only documented in 1880 around Petaluma presumed extirpated.
Cobb Mountain lupine <i>Lupinus sericatus</i>	-	-	1B.2	Chaparral; cismontane woodland; lower coniferous forest.	Unlikely. Site below elevational range of species.
Mount Diablo cottonweed <i>Micropus amphibolus</i>	-	-	3.2	Broad-leaf upland forest; cismontane woodland; valley and foothill grassland.	Unlikely. Marginal woodland habitat present.
Petaluma popcornflower <i>Plagiobothrys mollis vestitus</i>	-	-	1.A	Marshes and swamps (coastal salt); valley and foothill grassland (mesic).	Unlikely. Marginal grassland within elevational range, but last reported occurrence from 1880.
Point Reyes checkerbloom <i>Sidalcea calycosa rhizomata</i>	-	-	1B.2	Marshes (near the coast).	Unlikely. Marginal habitat present below elevational range of species.
Kenwood Marsh checkerbloom <i>Sidalcea oregana</i> ssp. <i>valida</i>	FE	-CE	1B.1	Marshes and swamps (freshwater)	Unlikely. Marginal habitat present below elevational range of species.
Two-fork clover <i>Trifolium amoenum</i>	-FE	-	1B.1	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)	Unlikely. Marginal habitat present. Serpentinite not present.
Oval-leaved viburnum <i>Viburnum ellipticum</i>	-	-	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Unlikely. Site below elevational range of species.

**Table 1.
Special-Status Plant Species Determined to Have Potential to Occur within the
Hanna Boys Center Study Area**

Species	Status*			Habitat	Potential for Occurrence Within Study Area**
	Federal	State	CNPS		

***Status Codes:**

Federal

FE Federal Endangered

State

CE California Endangered

CNPS

Rank 1B Rare, Threatened, or Endangered in California

Rank 2 R, T, or E in California, more common elsewhere

1- Seriously threatened in California

2- Fairly threatened in California

****Definitions for the Potential to Occur:**

None. No suitable habitat (or nesting habitat) present within the study area.

Unlikely: Minimal or marginal quality habitat in the study area. Disturbance or other activities may restrict or eliminate possibility of species occurring.

Possible. Suitable habitat occurs within the study area. Study area within range of species.

Likely. Study area provides desirable habitat for species and there is a very high probability for its occurrence. Species documented to occur nearby in similar habitat.

Observed: Species was observed within the study area.

Field surveys were conducted on the site on April 19, May 7, and May 24, by Jeff Glazner. The site was also reviewed on May 10 and June 1, 2017 during preliminary work on the property. Areas of proposed disturbance were walked along meandering transects with emphasis on areas that were not dense with weedy grasses. The survey was floristic in nature with emphasis on habitats that could support any of the species listed in Table 1. Species observed were recorded and are presented in Appendix B.

FINDINGS

Biological Communities

Within the project site, five biological communities were identified: annual grassland, oak woodland, riparian, eucalyptus grove, and residential (developed). Biological communities are illustrated in Figure 4, and representative site photos are presented in Figures 5a, 5b, and 5c.

Annual Grassland

All of the non-wetland grassland areas are occupied by a dense cover of primarily weedy grasses. The potential for special status plant species in the upland grasslands is very low due to the ongoing disturbance of regular disking and abundance of non-native Mediterranean grasses. Dominant grasses are Italian ryegrass (*Festuca perennis*) and bulbous canarygrass (*Phalaris aquatica*), which are dense in most areas. Other common species throughout the grassland include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), small quaking grass (*Briza minor*), chicory (*Cichorium intybus*) bristly ox-tounge (*Helminthotheca echioides*), bindweed (*Convolvulus arvensis*) and cut leaf geranium (*Geranium dissectum*). Seasonal wetlands embedded in the grassland represent the highest probability of supporting special status species on the property. The seasonal wetlands supported abundant meadow barley (*Hordeum brachycarpum*), and the wettest locations supported annual semaphore grass (*Pleuropogon californicus*). Overall, species diversity in the upland and wetland grasslands was low. None of the seasonal wetlands are vernal pools and none support a vernal pool flora. Each seasonal wetland was surveyed in detail for special status species and none were detected.

Oak Woodland

The oak woodland habitat occurs along much of the perimeter of the property and in one large band in the north central area (Figure 4). The oak woodland areas are primarily coast live oak (*Quercus agrifolia*) and common shrubs. The oak woodland areas were surveyed, and no special status plant species were detected.

Riparian

The riparian areas occur along the drainages of the site (streamside woodland) (Figure 4). These corridors contain woody hydrophytes (willow, cottonwood, valley oak) as well as oak woodland typical oak woodland species. The riparian corridors were surveyed, and no special status species were detected.

Eucalyptus Grove

Two stands of very tall eucalyptus (*Eucalyptus globulus*) occur along the western boundary of the site, both associated with oak woodland and riparian corridors. No special status plant species were detected in the Eucalyptus areas.

Developed (Residential)

The developed/residential areas are primarily paved or landscaped and are not habitat for any special status species.

Special-status Plants

Based on the 2016 report and the queries of the California Natural Diversity Data Base (CNDDB 2018) and the California Native Plant Society (CNPS 2018) Inventory of Rare and Endangered Plants, the following species were determined to have some potential to occur within the study area due to the presence of some level of suitable habitat. 14 of these species have been reported to occur within a five-mile radius of the study area, as illustrated in Figure 3.

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a perennial bulbiferous herb in the Alliaceae family that occurs in central California from Mendocino County to Monterey County on dry hillsides below 1000 feet elevation, in clay, volcanic, often serpentinite substrates. It has no state or federal status, but it is a CNPS Rank 1B.2 species. It booms from May to June.

Suitable habitat areas were surveyed and this species was not detected.

Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) is a tufted perennial in the Poaceae (grass) family that reaches 12-30 in in height. It is federally listed as Endangered, has no state status, but has CNPS Rank 1B.2. Populations of Sonoma alopecurus occur in moist soils in permanent freshwater marshes at elevations between 15 and 1200 feet elevation. It blooms from May to July.

The nearest reported occurrence of Sonoma alopecurus is 8 miles northwest of the study area, on the east and west margins of Ledson Marsh, within Annadel State Park, where it was observed and collected in 1961 and seen in the western area in 2000 and in the eastern

area in 2001. The seasonal marsh near the residence represents suitable habitat, which was surveyed. The species was not detected.

Napa false indigo (*Amorpha californica* var. *napensis*) is a perennial deciduous shrub of the Fabaceae family that occurs north of the San Francisco Bay Area in mostly coastal areas in broadleaved upland forest (openings), chaparral, and cismontane woodland below 6500 feet elevation. It has no state or federal status, but it is a CNPS Rank 1B.2 species. It blooms from May through July. Suitable habitat areas were surveyed, and this species was not detected.

Clara Hunt's milkvetch (*Astragalus claranus*) is an annual herb of the Fabaceae family that occurs north of the Bay Area in open grassy areas Chaparral (openings), Cismontane woodland, Valley and foothill grassland on serpentinite or volcanic, rocky, clay soil between 245-900 feet elevation. It is federally listed as Endangered, state listed as Threatened and has CNPS Rank 1B.1. It blooms from March to May. Suitable habitat areas were surveyed, and this species was not detected.

Big-scale balsamroot (*Balsamorhiza macrolepis*) is an herbaceous perennial member of the sunflower family (Asteraceae). It has no state or federal status, but it is a CNPS Rank 1B.2 species. This species has large yellow flowering heads and leaves that arise from the ground. It differs, in part, from other balsam-roots by having coarsely serrate leaves. Big-scale balsam-root grows in open woodlands and grasslands at widely scattered locations in northern California, between 145 and 5100 feet elevation and will tolerate serpentine soil. It blooms from March to June.

The nearest reported occurrence of big-scale balsamroot is from approximately 3 miles southeast of the study area, near Sonoma (exact location unknown), from an undated collection. The edges of the oak woodland represent suitable habitat for this species, but it was not detected.

Narrow-flowered California brodiaea (*Brodiaea leptandra*) is a perennial herb of the Themidaceae family that is native and endemic to California. It is ranked by CNPS as 1B.2. It occurs in open mixed-evergreen forest, chaparral, and on gravelly soil. Between one and six narrow leaves are produced from the corm. The bare flowering stem (scape) carries an umbel of flowers with six blue to purple tepals. It blooms from May to July. Suitable habitat areas were surveyed, and this species was not detected.

Pappose tarplant (*Centromadia parryi* ssp. *parryi*) is an annual glandular herb in the Asteraceae (sunflower) family. It is ranked by CNPS as 1B.2. Pappose tarplant grows to up to 28 inches tall, producing arrays of numerous yellow flower heads with both ray florets and disc florets. It occurs in coastal prairie, meadows and seeps, marshes, and vernal wet grassland, sometimes in alkaline conditions, and it blooms May to November. Suitable habitat areas were surveyed, and this species was not detected.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status and is ranked 2B.2 by CNPS. Dwarf downingia is distinguished from other members of the genus by having very small flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools at elevations ranging from 0 to 1460 feet. It blooms from March to May, depending on the amount and distribution of winter rains.

The nearest reported occurrence of dwarf downingia is 3 miles north of the study area, on the southwest side of Hwy. 12 at Sonoma Valley Regional Park, on both sides of the entrance road, east of Glen Ellen. The population was “abundant” in 1960 and 10,000 plants were reported in 1989. The seasonal wetlands on the study area were surveyed, and this species was not detected.

Streamside daisy (*Erigeron biolettii*) is a perennial herb species in the sunflower family. It has no state or federal status, but it is a CNPS Rank 3 species. It occurs in broadleaved upland forest, cismontane woodland, and North Coast coniferous forests on dry slopes, among rocks, and on ledges along rivers from the North Coast Ranges from Marin and Solano Counties north to Humboldt County. It blooms from June-September. It was not observed during field surveys.

Jepson's coyote thistle (*Eryngium jepsonii*) is a perennial herb in the Apiaceae family. It has no state or federal status, but it is a CNPS Rank 1B.2 species. It is found in shallow vernal pools, low places in valley fields, and in flats of hills throughout valley and foothill grassland and is believed to be found only in soils with moderate to high clay content. It occurs from Napa to San Mateo County and blooms from April to August. It was not observed during field surveys.

Fragrant fritillary (*Fritillaria liliacea*) is a perennial bulb of the Liliaceae (lily) family. It has no federal or state status and is ranked 1B.2 by CNPS. The bell-shaped white flowers have greenish stripes and are set on a nodding pedicel about 37 centimeters in height. It blooms from February to April. Fragrant fritillary prefers heavy soils including clays; for example, andesitic and basaltic soils derived from the Sonoma Volcanic soil layers are suitable substrate for this species. It occurs at elevations ranging from 5 to 1345 feet.

The nearest reported occurrence of fragrant fritillary is 2.5 miles south-southwest of the study area, at Van Hoosear Wildflower Preserve (mapped as a best guess by CNDDDB). The only source of information for this occurrence is a Calflora area checklist dated 2003; actual observation date unknown. This species was not detected during surveys.

Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), an annual member of the sunflower family (Asteraceae), has no state or federal listing but is a CNPS Rank 1B.2 species. It is a very glandular, spindly, thin-stemmed herb growing erect to 10 to 80 centimeters in height. Ray flowers are white with purple-veins. It grows in grassy areas, often near marshy edges, primarily near the coast. It blooms from April to November.

The nearest reported occurrence of congested-headed hayfield tarplant is approximately 1.5 miles south of the study area, at El Verano, northwest of Sonoma, mapped as a “best guess” by CNDDDB, from a 1931 collection. This species was not detected during the surveys.

Legenere (*Legenere limosa*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status, and it is a CNPS Rank 1B.1 species. It is the only species in the genus and has small, inconspicuous flowers that have pedicels rather than being sessile. Legenere grows in the drying mud of late season vernal pools, and it blooms from April to June.

The nearest reported occurrence of legenere is 6 miles northeast of the study area, in a vernal pool on Lichau Road, 6.5 miles northeast of Pengrove in the Sonoma Mountains, in

1969. The site was reportedly destroyed in 1973. This species was not detected during the surveys.

Pitkin Marsh lily (*Lilium pardalinum* ssp. *pitkinense*) is a perennial herb of the Liliaceae family. It is both state or federally listed as Endangered and is a CNPS Rank 1B.1 species. It occurs in mesic, sandy areas of cismontane woodland, in meadows and seeps and freshwater marshes and swamps. It is known only from Sebastopol in Sonoma County. The blooming period is June and July. This species was not detected.

Cobb Mountain lupine (*Lupinus sericatus*) is a perennial herb in the pea family. It is endemic to the North Coast Ranges of California north of the San Francisco Bay Area. It has no state or federal status, and it is a CNPS Rank 1B.2 species. It grows in the forest, woodlands, and chaparral of the slopes and canyons at elevations between 900 and 5000 feet. It blooms from March to June. This species was not detected.

Mount Diablo cottonweed (*Micropus amphiboles*) is an annual species in the sunflower family. It has no federal or state status but is ranked 3.2 by CNPS. It occurs in openings on slopes, ridges, in shallow soils, and on sedimentary or volcanic rocks at an elevation between 145 to 2705 feet. It blooms from March through May. This species was not detected.

Petaluma popcornflower (*Plagiobothrys mollis* var. *vestitus*) is a perennial herb of the Boraginaceae family. It has no federal or state status but is ranked 1A by CNPS. It is presumed extinct (Jepson) and is known only from the type collection (in 1880) near Petaluma. CNPS indicates that field work is needed. Habitats include coastal salt marshes and swamps and mesic areas of valley and foothill grassland. The species is not reported to occur within 5 miles of the study area and was not detected during the surveys.

Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*) is a native perennial rhizomatous herb of the Malvaceae family. It has no federal or state status but is ranked 1B.2 by CNPS. It grows in central and northern California, primarily in the north and central coast regions. It prefers marshes and other wet places at elevations from 0-3900 feet. It bears pink flowers April through September. The species is not reported to occur within 5 miles of the study area and was not detected during the surveys.

Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*), a perennial rhizome, is a member of the Malvaceae family. It is federally- and state-listed as endangered and has a CNPS rank of 1B.1. Spike-like, dense clusters of pink flowers are produced from late June to September. It occurs at the edges of freshwater marshes and swamps at elevations ranging from 375 to 490 feet.

The nearest reported occurrence of Kenwood Marsh checkerbloom is 6 miles north of the study area, at Kenwood Marsh, south of Kenwood, north of Hwy. 1. CNDDDB reports that "the quality of the site has declined over the last 30 years," with fewer plants being reported. Last reported as present in 2013. This species was not detected during the surveys.

Two-fork clover (*Trifolium amoenum*) is an annual member of the Fabaceae (legume or pea) family. It is federally endangered, with no state status and has CNPS Rank 1B.1. It occurs in coastal bluff scrub, valley and foothill grassland, sometimes in serpentinite, between 15

and 1360 feet elevation. The flowers are purple with white tips, occurring in dense, round or ovoid heads from April-June. This species is similar in appearance to *T. macraei*, although it is generally larger and the flowers lack subtending bracts.

The nearest reported occurrence of two-fork clover is approximately 6.5 miles north of the study area, around Kenwood, from a 1928 collection (mapped as best guess by CNDDDB). This species was not detected during the surveys.

Oval-leaved viburnum (*Viburnum ellipticum*), a perennial deciduous shrub, is a member of the Adoxaceae family. It has no federal or state status and is ranked 2B.3 by CNPS. It occurs in chaparral, cismontane woodland, and lower montane coniferous forest at elevations between 705 and 4595 feet. White flowers are borne in clusters, and it blooms from May to June.

The nearest reported occurrence of oval-leaved viburnum is approximately 3.5 miles southeast of the study area, near El Cerrito Ranch, between Buena Vista and Sonoma, based on two 1914 collections and a 1916 observation. This species was not detected during the surveys.

CONCLUSION

Salix Consulting conducted a rare plant survey of the Hanna Boys Center project site observed in Sonoma County. Three field visits were conducted during April and May 2018, and no special-status species were observed on the property.

Please contact me if you have any questions regarding the survey results.

Sincerely,



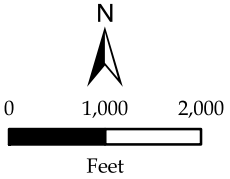
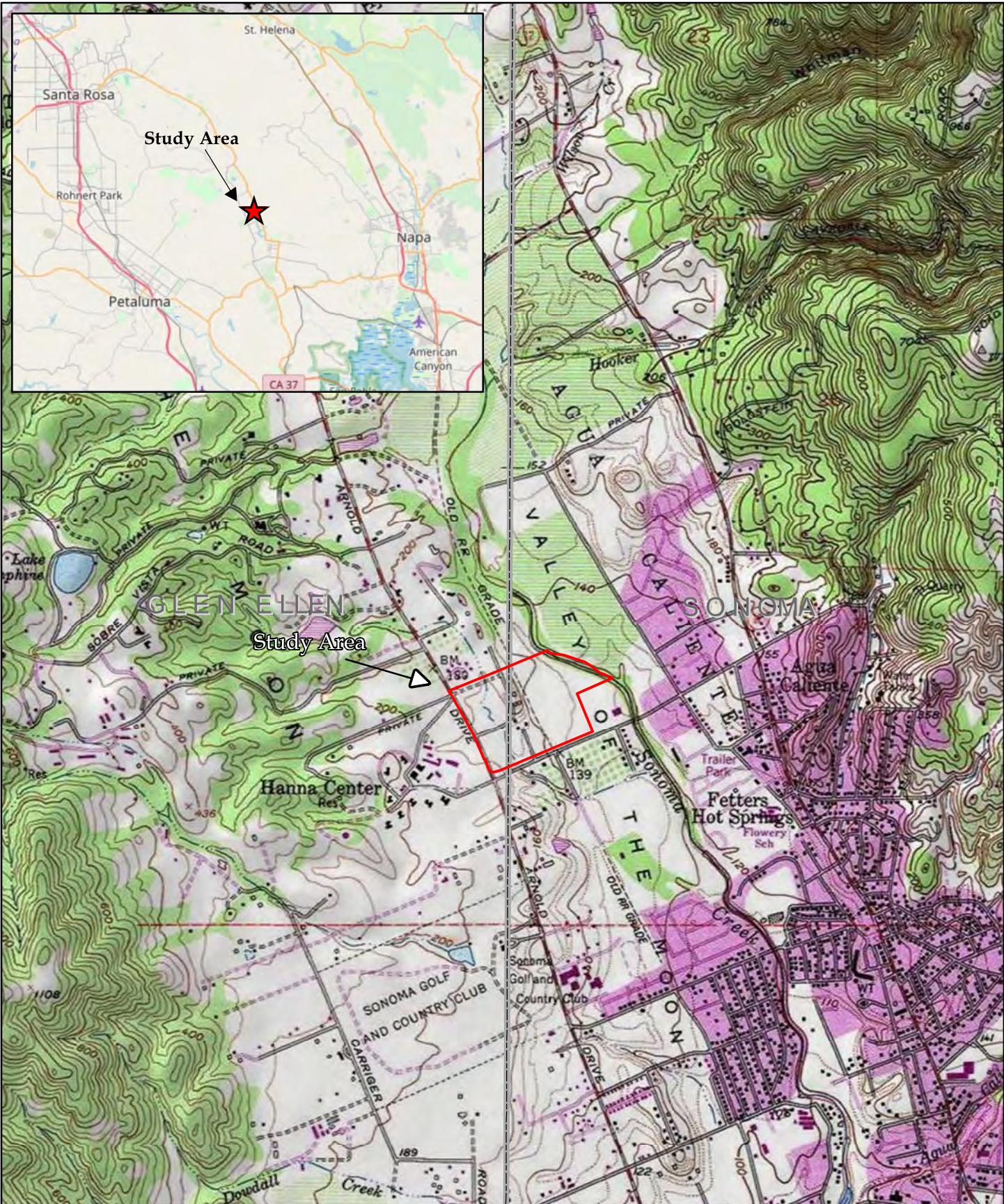
Jeff Glazner
Principal Biologist

Attachments:

- Figure 1. USGS Site & Vicinity Map
- Figure 2. Aerial photo
- Figure 3. CNDDDB Occurrence Map
- Figure 4. Habitat map
- Figures 5a-c. Site photos

Appendix A. Potentially-occurring Special-Status Plants

Appendix B. List of Plants Observed within the Study Area 2018

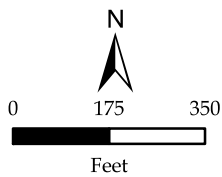


Source Maps: USGS Topographic Map
 Glen Ellen and Sonoma Quads 1:24,000
 G49 T06N R06W

Figure 1
SITE AND VICINITY MAP
Hanna Boys Center
 Sonoma County, CA



Google

















Study Area
(±60 acres)

Imagery: 4-19-18 Salix Consulting, Inc.

Figure 2

AERIAL MAP
Hanna Boys Center
Sonoma County, CA

CNDDDB Special-Status Plant Species

- | | | |
|--|--|---|
|  <i>Allium peninsulare</i> var. <i>franciscanum</i> |  <i>Ceanothus sonomensis</i> |  <i>Leptosiphon jepsonii</i> |
|  <i>Amorpha californica</i> var. <i>napensis</i> |  <i>Downingia pusilla</i> |  <i>Lilium pardalinum</i> ssp. <i>pitkinense</i> |
|  <i>Balsamorhiza macrolepis</i> |  <i>Fritillaria liliacea</i> |  <i>Lupinus sericatus</i> |
|  <i>Blennosperma bakeri</i> |  <i>Hemizonia congesta</i> ssp. <i>congesta</i> |  <i>Viburnum ellipticum</i> |
|  <i>Brodiaea leptandra</i> |  <i>Horkelia tenuiloba</i> | |

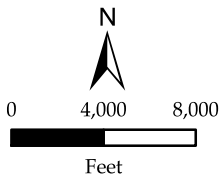
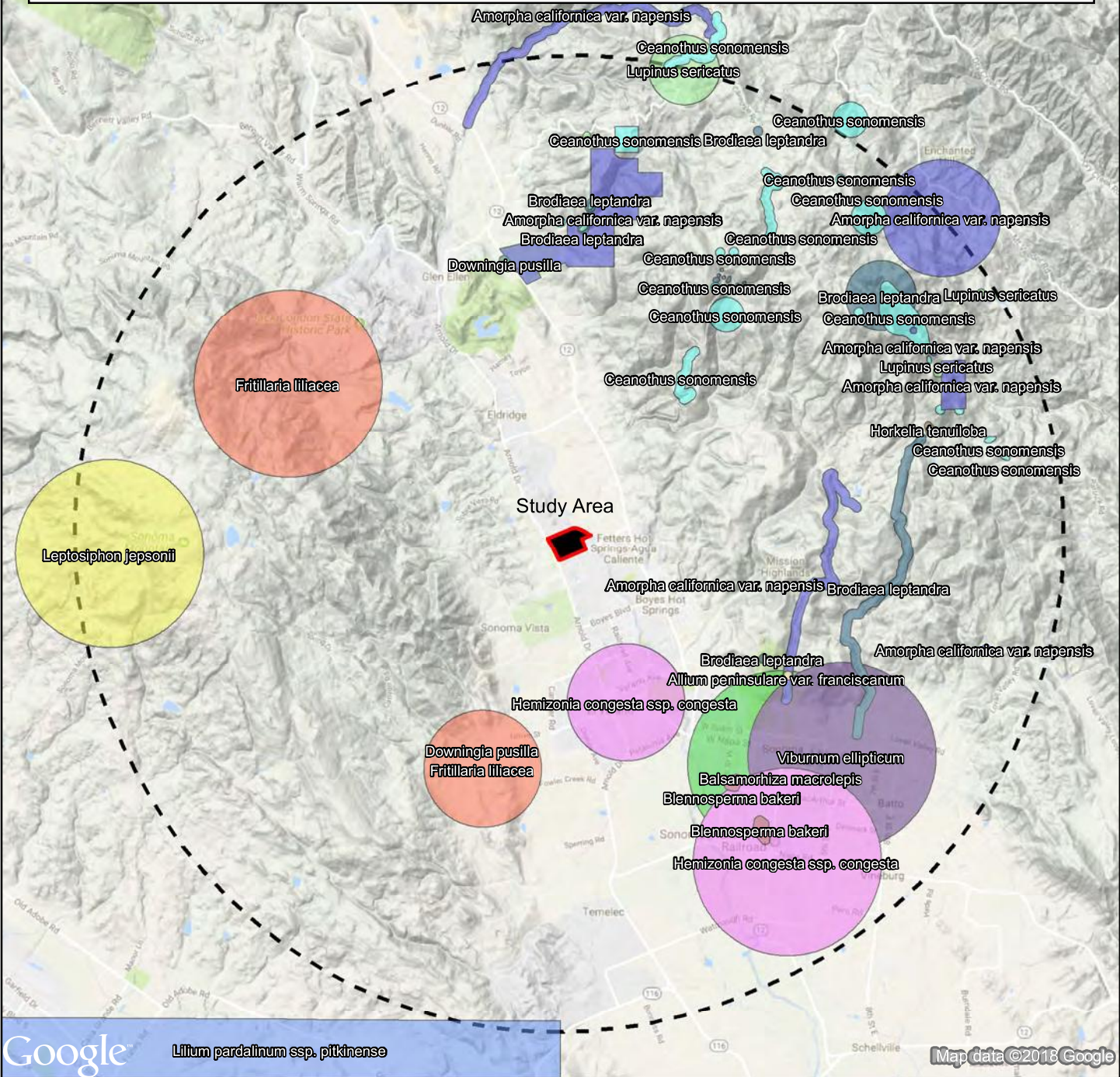






Figure 3
CNDDDB OCCURRENCES MAP
Hanna Boys Center
 Sonoma County, CA

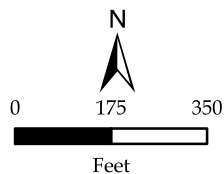
Habitat Components



- | | |
|--|--|
|  Annual Grassland (±42 acres) |  Residential/Developed (±3 acres) |
|  Riparian (±9 acres) |  Eucalyptus (±1 acre) |
|  Oak Woodland (±4 acres) | |



Google

Imagery ©2018, DigitalGlobe, USDA Farm Service Agency



-  Study Area (±60 acres)
-  Wetlands

Imagery: 4-19-18 Salix Consulting, Inc.

Figure 4
HABITAT MAP
Hanna Boys Center
 Sonoma County, CA



Seasonal wetland embedded in annual grassland habitat.
Photo date: 4-19-18



Seasonal wetland supporting mostly Italian ryegrass.
Photo date: 5-24-18



Seasonal marsh with abundant curly dock and creeping spikerush. *Photo date: 4-19-18*



Seasonal marsh with abundant low mannagrass and California water plantain. *Photo date: 5-24-18*



Creek flowing south along west side of property.
Photo date: 4-19-18



Looking north over upland grassland toward creek corridor
and riparian habitat. *Photo date: 4-19-18*



Figure 5c

SITE PHOTOS
Hanna Boys Center
Sonoma County, CA

Appendix A

Hanna Boys Center - Potentially-occurring Special-status Plants

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae <i>Viburnum ellipticum</i> Western viburnum	Fed: - State: - CNPS: Rank 2B.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	Unlikely. Site below elevational range of species.
Alliaceae <i>Allium peninsulare franciscanum</i> Franciscan onion	Fed: - State: - CNPS: Rank 1B.2	May-June	Cismontane woodland; valley and foothill grassland [clay, often serpentine]. 100-300 m.	Unlikely. Marginal woodland habitat with volcanic substrate.
Apiaceae (Umbelliferae) <i>Eryngium jepsonii</i> Jepson's coyote thistle	Fed: - State: - CNPS: Rank 1B.2	April-August	Clay. Valley and foothill grassland. Vernal pools.	Unlikely. Marginal habitat present.
Asteraceae (Compositae) <i>Balsamorhiza macrolepis</i> Big-scale balsam-root	Fed: - State: - CNPS: Rank 1B.2	March-June	Cismontane woodland; valley and foothill grassland; [sometimes serpentine].	Unlikely. Marginal woodland and grassland. Only one occurrence in vicinity of study area at an unknown location.
<i>Blennosperma bakeri</i> Sonoma sunshine	Fed: FE State: CE CNPS: Rank 1B.1	February-April	Valley and foothill grassland (mesic); vernal pools.	None. Site lacks suitable wetland habitat.
<i>Centromadia parryi parryi</i> Pappose tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernally wet grassland (sometimes alkaline).	Unlikely. Marginal mesic grasslands present, but only one documented occurrence in vicinity from 1933.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Erigeron biolettii</i> Streamside daisy	Fed: - State: - CNPS: Rank 3.	June-September	Broad-leaved upland forest; cismontane woodland; northern coniferous forest [rocky, mesic].	Unlikely. Marginal woodland habitat, but no dry rocky places. Only known occurrence from 1891 around St. Helena.
<i>Erigeron greenei</i> Narrow-leaved daisy	Fed: - State: - CNPS: Rank 1B.2	May-September	Chaparral (serpentine).	None. Site lacks chaparral. Site lacks serpentine.
<i>Hemizonia congesta congesta</i> Pale yellow hayfield tarplant	Fed: - State: - CNPS: Rank 1B.2	April-November	Valley and foothill grassland. 20 to 560 meters.	Possible. Potential suitable grassland habitat present. Occurs within 5 miles of study area.
<i>Lasthenia conjugens</i> Contra Costa goldfields	Fed: FE State: - CNPS: Rank 1B.1	March-June	Valley and foothill grassland (mesic); vernal pools.	None. No vernal pools or alkaline sites associated with species present.
<i>Layia septentrionalis</i> Colusa layia	Fed: - State: - CNPS: Rank 1B.2	April-May	Chaparral; cismontane woodland, valley and foothill grassland; [sandy, serpentine].	None. No serpentine or sandy soils present.
<i>Lessingia hololeuca</i> Woolly-headed lessingia	Fed: - State: - CNPS: Rank 3.	June-October	Coastal scrub; lower montane coniferous forest; valley and foothill grassland; [clay, serpentine].	None. Site lacks clay, serpentine soils.
<i>Micropus amphibolus</i> Mount Diablo cottonweed	Fed: - State: - CNPS: Rank 3.2	March-May	Broad-leaf upland forest; cismontane woodland; valley and foothill grassland.	Unlikely. Marginal woodland habitat present.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Boraginaceae <i>Amsinckia lunaris</i> Bent-flowered fiddleneck	Fed: - State: - CNPS: Rank 1B.2	March-June	Coastal bluff scrub; cismontane woodland, valley and foothill grassland	None. Site lacks suitable soil conditions (gravelly or serpentine).
<i>Plagiobothrys mollis vestitus</i> Petaltuna popcornflower	Fed: - State: - CNPS: Rank 1A.	June-July	Marshes and swamps (coastal salt); valley and foothill grassland (mesic).	Unlikely. Marginal grassland within elevational range, but last reported occurrence from 1880.
Brassicaceae (Cruciferae) <i>Streptanthus hesperidis</i> Jewelflower	Fed: - State: - CNPS: Rank 1B.2	May-July	Serpentine, rocky. Chaparral (openings). Cismontane woodland	None. Site lacks rocky, serpentine soils.
Campanulaceae <i>Downingia pusilla</i> Dwarf downingia	Fed: - State: - CNPS: Rank 2B.2	March-May	Vernal pools and seasonal wetlands.	Unlikely. Marginal habitat in seasonal wetlands. Known to occur within 5 miles of study area. Not observed.
<i>Legenere limosa</i> Legenere	Fed: - State: - CNPS: Rank 1B.1	April-June	Vernal pools and seasonal wetlands.	Unlikely. Marginal habitat in seasonal wetlands. Not observed.
Ericaceae <i>Arctostaphylos bakeri bakeri</i> Baker's manzanita	Fed: - State: CR CNPS: Rank 1B.1	February-April	Broad-leaved upland forest; chaparral; [often serpentine].	None. Site lacks chaparral; site lacks serpentine soils.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Arctostaphylos stanfordiana decumbens</i> Rincon manzanita	Fed: - State: - CNPS: Rank 1B.1	February-April	Chaparral (rhyolitic).	None. Site lacks chaparral and rhyolitic substrate. No manzanita observed.
Fabaceae (Leguminosae) <i>Amorpha californica napensis</i> Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	Unlikely. Site has marginal woodland habitat.
<i>Astragalus claranus</i> Clara Hunt's milkvetch	Fed: FE State: CT CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland; [serpentine, volcanic clay].	Unlikely. Marginal grassland and woodland habitat underlain by volcanic substrate present.
<i>Astragalus tener tener</i> Alkali milkvetch	Fed: - State: - CNPS: Rank 1B.2	March-June	Playas; valley and foothill grassland (adobe clay), vernal pools (alkaline).	None. No vernal pools or alkaline substrates present.
<i>Lupinus sericatus</i> Cobb Mountain lupine	Fed: - State: - CNPS: Rank 1B.2	March-June	Chaparral; cismontane woodland; lower coniferous forest.	Unlikely. Site below elevational range of species.
<i>Trifolium amoenum</i> Showy Indian clover	Fed: FE State: - CNPS: Rank 1B.1	April-June	Coastal bluff scrub; Valley and foothill grassland (sometimes serpentine)	Unlikely. Marginal habitat present, serpentine not present.
<i>Trifolium hydrophilum</i> Saline clover	Fed: - State: - CNPS: Rank 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	None. Site lacks salt marshes and alkaline soils.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Liliaceae <i>Fritillaria liliacea</i> Fragrant fritillary	Fed: - State: - CNPS: Rank 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentine].	Unlikely. Marginal grassland habitat present, but no serpentine.
<i>Lilium pardalinum pitkinense</i> Pitkin Marsh lily	Fed: FE State: CE CNPS: Rank 1B.1	June-July	Mesic, sandy, Cismontane woodland. Meadows and seeps. Marshes and swamps (freshwater).	Unlikely. Known only from Pitkin Marsh near Sebastopol. Only documented occurrence in vicinity from 1880 around Petaluma presumed extirpated.
Linaceae <i>Hesperolinon congestum</i> Marin dwarf flax	Fed: FT State: CT CNPS: Rank 1B.1	April-July	Chaparral; valley and foothill woodland; [serpentine].	None. No serpentine present.
Malvaceae <i>Sidalcea calycosa rhizomata</i> Point Reyes checkerbloom	Fed: - State: - CNPS: Rank 1B.2	April-September	Marshes (near the coast).	Unlikely. One seasonal marsh occurs onsite.
<i>Sidalcea oregana valida</i> Kenwood Marsh checkerbloom	Fed: FE State: CE CNPS: Rank 1B.1	June-September	Marshes and swamps (freshwater).	Unlikely. Marginal habitat present below elevational range of species.
Orobanchaceae <i>Chloropyron maritimum palustre</i> Point Reyes salty bird's-beak	Fed: - State: - CNPS: Rank 1B.2	June-October	Marshes and swamps (coastal salt).	None. No coastal salt marsh present.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Chloropyron molle molle</i> Soft salty bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	July-September	Marshes and swamps (coastal salt).	None. No coastal salt marsh present.
Plantaginaceae <i>Penstemon newberryi sonomensis</i> Sonoma beardtongue	Fed: - State: - CNPS: Rank 1B.3	May-July	Chaparral (rocky).	None. No chaparral present onsite. Site below elevational range of species.
Poaceae (Gramineae) <i>Alopecurus aequalis sonomensis</i> Sonoma alopecurus	Fed: FE State: - CNPS: Rank 1B.1	May-July	Marshes & swamps (freshwater); riparian scrub.	Unlikely. Marginal habitat present.
Polemoniaceae <i>Leptosiphon jepsonii</i> Jepson's leptosiphon	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; cismontane woodland (usually volcanic).	None. No chaparral present. Site below elevational range of species.
<i>Navarretia leucocephala bakeri</i> Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	None. Site lacks vernal pools.
<i>Navarretia leucocephala plicantha</i> Many-flowered navarretia	Fed: FE State: CE CNPS: Rank 1B.2	May-June	Vernal pools (volcanic ash flow).	None. Site lacks vernal pools.

Appendix A
Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Polygonaceae <i>Chorizanthe valida</i> Sonoma spineflower	Fed: FE State: CE CNPS: Rank 1B.1	June-August	Coastal prairie (sandy).	None. Site lacks coastal prairie.
<i>Eriogonum luteolum caninum</i> Tiburon buckwheat	Fed: - State: - CNPS: Rank 1B.2	June-September	Chaparral, coastal prairie; valley and foothill grassland; [serpentine].	None. Site lacks chaparral. Site lacks serpentine.
<i>Polygonum marinense</i> Marin knotweed	Fed: - State: - CNPS: Rank 3.1	June-August	Marshes and swamps (coastal salt).	None. Site lacks coastal salt marsh.
Rhamnaceae <i>Ceanothus confusus</i> Rincon Ridge ceanothus	Fed: - State: - CNPS: Rank 1B.1	February-April	Closed-cone coniferous forest; chaparral; cismontane woodland; [volcanic or serpentine].	None. Site lacks coniferous forest, chaparral, serpentine. No ceanothus species observed.
<i>Ceanothus divergens</i> Calistoga ceanothus	Fed: - State: - CNPS: Rank 1B.2	March-April	Chaparral (serpentine or volcanic).	None. Site lacks chaparral, serpentine. No ceanothus species observed.
<i>Ceanothus purpureus</i> Holly-leaf ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (volcanic).	None. Site lacks chaparral. No ceanothus species observed.

Appendix A

Hanna Boys Center - CNDDDB/CNPS Potentially-occurring Special-status Plants

Family	Taxon	Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
	<i>Ceanothus sonomensis</i>	Sonoma ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (sandy, serpentinite, or volcanic).	None. Site lacks chaparral, serpentinite. No ceanothus species observed.
Rosaceae	<i>Horkelia tenuiloba</i>	Thin-lobed horkelia	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral (mesic openings).	None. Site lacks chaparral, sandy soil.
Themidiaceae	<i>Brodiaea leptandra</i>	Narrow-flowered California brodiaea	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleaved upland forest; chaparral; lower montane coniferous forest. Volcanic.	Unlikely. Species prefers rocky soil/barren areas which are lacking. Site below elevational range of species.

***Status**

Federal:
 FE - Federal Endangered
 FT - Federal Threatened
 FPE - Federal Proposed Endangered
 FPT - Federal Proposed Threatened
 FC - Federal Candidate
 FSS - Forest Service Sensitive
 FSW - Forest Service Watchlist

State:
 CE - California Endangered
 CT - California Threatened
 CR - California Rare
 CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):

Rank 1A - Extinct
 Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
 Rank 2A - Plants extinct in California, but more common elsewhere
 Rank 2B - Plants rare, threatened, or endangered in California, more common elsewhere
 Rank 3 - Plants about which more information is needed, a review list
 Rank 4 - Plants of limited distribution, a watch list

RED Code
 1 - Seriously endangered (>80% of occurrences threatened)
 2 - Fairly endangered (20 to 80% of occurrences threatened)
 3 - Not very endangered (<20% of occurrences threatened)

Appendix B

Hanna Boys Center - Plants Observed -2018

Appendix B

Hannah Boys Center - Plants Observed - May-June 2018

Ferns and Allies

Dryopteridaceae - Wood Fern Family

Dryopteris arguta Wood fern

Polypodiaceae - Polypody Family

Polypodium californicum California polypody

Pteridaceae - Brake Family

Pentagramma triangularis Gold back fern

Angiosperms - Dicots

Anacardiaceae - Cashew or Sumac Family

Toxicodendron diversilobum Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Foeniculum vulgare* Sweet fennel

Sanicula crassicaulis Gamble weed

**Torilis arvensis* Field hedgeparsley

Apocynaceae - Dogbane/Milkweed Family

Asclepias californica California milkweed

**Vinca major* Periwinkle

Asteraceae (Compositae) - Sunflower Family

Baccharis pilularis Coyote brush

**Carduus pycnocephalus* Italian thistle

**Centaurea calcitrapa* Purple starthistle

**Centaurea solstitialis* Yellow starthistle

**Cichorium intybus* Chicory

**Hypochaeris glabra* Smooth cat's-ear

**Lactuca serriola* Prickly lettuce

**Matricaria discoidea* Pineapple-weed

**Silybum marianum* Milk thistle

Xanthium spinosum Spiny cocklebur

Boraginaceae - Borage Family

Amsinckia menziesii Rancher's fireweed

Brassicaceae (Cruciferae) - Mustard Family

**Brassica nigra* Black mustard

Cardamine oligosperma Western bitter-cress

**Hirschfeldia incana* Short-podded mustard

**Raphanus sativus* Wild radish

Caprifoliaceae - Honeysuckle Family

Symphoricarpos albus var. *laevigatus* Common snowberry

Caryophyllaceae - Pink Family

**Cerastium glomeratum* Sticky mouse-ear chickweed

**Spergularia rubra* Ruby sand-spurrey

* Indicates a non-native species

<i>*Stellaria media</i>	Common chickweed
Convolvulaceae - Morning-Glory Family	
<i>*Convolvulus arvensis</i>	Bindweed
Cucurbitaceae - Gourd Family	
<i>Marah fabacea</i>	California manroot
Euphorbiaceae - Spurge Family	
<i>Croton setiger</i>	Turkey mullein
<i>*Euphorbia pepulus</i>	Petty spurge
Fabaceae (Leguminosae) - Legume Family	
<i>*Acacia baileyana</i>	Cootamundra wattle
<i>Acmispon americanus</i>	Spanish lotus
<i>*Genista monspessulana</i>	French broom
<i>*Lathyrus cicera</i>	Wild-pea
<i>*Lotus corniculatus</i>	Bird's-foot trefoil
<i>Lupinus bicolor</i>	Miniature lupine
<i>Lupinus nanus</i>	Sky lupine
<i>*Medicago polymorpha</i>	California burclover
<i>*Robinia pseudoacacia</i>	Black locust
<i>*Trifolium dubium</i>	Little hop clover
<i>*Trifolium hirtum</i>	Rose clover
<i>*Trifolium repens</i>	White clover
<i>*Trifolium subterraneum</i>	Subterranean clover
<i>*Vicia sativa</i>	Common vetch
<i>*Vicia villosa</i>	Winter vetch
Fagaceae - Oak Family	
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak
<i>Quercus lobata</i>	Valley oak
Geraniaceae - Geranium Family	
<i>*Erodium botrys</i>	Broad-leaf filaree
<i>*Erodium cicutarium</i>	Red-stem filaree
<i>*Geranium dissectum</i>	Cut-leaf geranium
<i>*Geranium molle</i>	Dove's-foot geranium
<i>*Geranium purpureum</i>	Cranesbill
Hypericaceae - St. John's Wort Family	
<i>*Hypericum perforatum</i> subsp. <i>perforatum</i>	Klamathweed
Lamiaceae (Labiatae) - Mint Family	
<i>*Marrubium vulgare</i>	White horehound
<i>*Mentha pulegium</i>	Pennyroyal
Lauraceae - Laurel Family	
<i>Umbellularia californica</i>	California bay
Lythraceae - Loosestrife Family	
<i>*Lythrum hyssopifolia</i>	Hyssop loosestrife
Malvaceae - Mallow Family	
<i>*Malva neglecta</i>	Common mallow
Moraceae - Mulberry Family	
<i>*Ficus carica</i>	Common fig

Myrsinaceae - Myrsine Family**Lysimachia arvensis*

Scarlet pimpernel

Myrtaceae - Myrtle Family**Eucalyptus globulus*

Blue gum

Oleaceae - Olive Family*Fraxinus dipetala*

California ash

**Olea europaea*

Olive

Orobanchaceae - Broomrape Family**Parentucellia viscosa*

Yellow glandweed

Oxalidaceae - Oxalis Family**Oxalis pes-caprae*

Bermuda buttercup

Plantaginaceae - Plantain Family**Kickxia elatine*

Sharppoint fluvellin

**Plantago lanceolata*

English plantain

Polemoniaceae - Phlox Family*Collomia grandiflora*

Large-flowered collomia

Polygonaceae - Buckwheat Family**Polygonum aviculare*

Common knotweed

**Rumex acetosella*

Sheep sorrel

**Rumex crispus*

Curly dock

**Rumex pulcher*

Fiddle dock

Ranunculaceae - Buttercup Family**Ranunculus muricatus*

Spiny-fruit buttercup

Rosaceae - Rose Family**Prunus cerasifera*

Cherry plum

**Prunus dulcis*

Almond tree

**Rubus armeniacus*

Himalayan blackberry

Rubiaceae - Madder Family*Galium aparine*

Goose grass

Salicaceae - Willow Family*Salix lasiolepis*

Arroyo willow

Sapindaceae - Soapberry Family*Aesculus californica*

California buckeye

Verbenaceae - Vervain Family*Phyla nodiflora*

Common frog-fruit

Angiosperms -Monocots

Agavaceae - Agave Family*Chlorogalum pomeridianum*

Soaproot

Alismataceae - Water-Plantain Family*Alisma triviale*

California water plantain

Cyperaceae - Sedge Family*Carex barbarae*

Whiteroot sedge

Carex praeegracilis

Clustered field-sedge

Cyperus eragrostis

Tall flatsedge

Eleocharis macrostachya

Creeping spikerush

* Indicates a non-native species

Juncaceae - Rush Family

Juncus bufonius

**Juncus effusus*

Juncus patens

Juncus phaeocephalus

Toad rush

Soft rush

Spreading rush

Brown-headed rush

Poaceae (Gramineae) - Grass Family

**Avena fatua*

**Briza maxima*

**Briza minor*

**Bromus diandrus*

**Bromus hordeaceus*

**Cynodon dactylon*

**Cynosurus echinatus*

**Elymus caput-medusae*

**Festuca bromoides*

**Festuca myuros*

**Festuca perennis*

**Glyceria declinata*

Hordeum brachyantherum

**Hordeum marinum subsp. gussoneanum*

**Hordeum murinum*

Melica californica

**Phalaris aquatica*

Pleuropogon californicus var. californicus

**Poa annua*

Stipa pulchra

Wild oat

Rattlesnake grass

Small quaking grass

Ripgut grass

Soft chess

Bermudagrass

Hedgehog dogtail

Medusahead

Brome fescue

Rattail sixweeks grass

Italian ryegrass

Low mannagrass

Meadow barley

Mediterranean barley

Wall barley

California melic

Harding grass





Annual semaphore grass

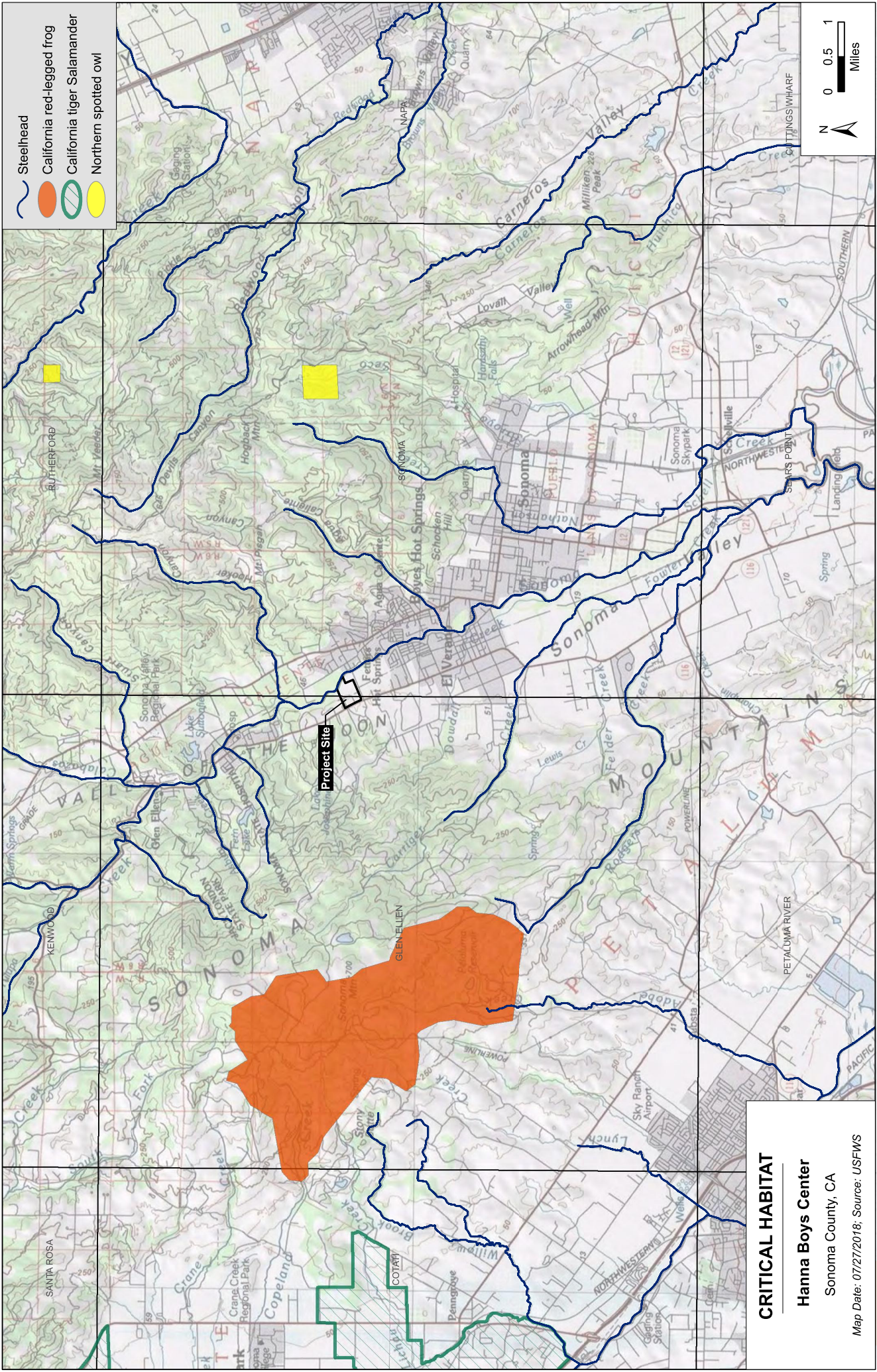
Annual bluegrass

Purple needlegrass

APPENDIX E

Designated Critical Habitat

-  Steelhead
-  California red-legged frog
-  California tiger Salamander
-  Northern spotted owl



CRITICAL HABITAT

Hanna Boys Center
Sonoma County, CA

Map Date: 07/27/2016; Source: USFWS