



## SYCAMORE ENVIRONMENTAL CONSULTANTS, INC.

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25 November 2019

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***Subject: 2019 Biological Survey Update for the Aggie Research Campus, Yolo County, CA***

Dear Mr. Pappani,

This letter provides a biological resource update for the Aggie Research Campus (ARC) Project located just east of the City of Davis in Yolo County, CA. Sycamore Environmental completed a biological and botanical survey of the Aggie Research Campus (ARC) Project site on 7 August 2019. The survey supplements the results of the previously prepared biological resources evaluation (BRE) and supplemental botanical survey (Sycamore Environmental 2015b, 2015c).

### **SUMMARY**

Existing conditions are similar to those documented in the BRE with three notable exceptions: 1) there has been additional development west of the Project, including the Residence Inn – Mace Ranch Project located south of 2nd Street and west of Mace Boulevard, and Mace and Alhambra Project located north of Alhambra Drive and west of Mace Boulevard; 2) there have been additional recent sightings of burrowing owl to the north and west of the Project site, including observations of occupied burrows along Mace Boulevard and County Road 104, along the perimeter of the Project site; and 3) three additional elderberry shrubs were observed along the perimeter of the site. Mitigation measures for biological resources in the Project Environmental Impact Report (EIR; certified by the City of Davis on 19 September 2017) remain adequate for the proposed ARC development. The biological mitigation measures in the EIR include a contingency measure (Measure 4.4-11) to implement all applicable mitigation/conservation requirements of the Yolo Habitat Conservation Plan / Natural Community Conservation Plan (Yolo HCP) in the event that the Yolo HCP is in place at the time of development, and a stipulation that Yolo HCP measures shall supersede those in the EIR if there is duplication for a species.

### **STUDY AREA**

#### ***Project Site***

The 265.09-acre Biological Study Area (BSA) is located northeast of the intersection of Mace Boulevard and Interstate 80, east of the City of Davis, CA, in the Central Valley. An aerial photograph of the BSA is in Attachment A. Soils and vegetation communities present in the BSA are described in the Biological Resources Evaluation (BRE; Sycamore Environmental 2015b). The BSA is heavily disturbed by existing development and ongoing agricultural uses. The BSA includes two off-site sewer line alternatives to the east and north.

### ***Off-site Stormwater Capacity***

In addition to the 265.09-acre BSA, agricultural fields located approximately 1.5 miles east of the Project will be lowered in elevation to increase stormwater capacity, as described in the EIR. The area in which stormwater capacity is contemplated (550.25 acres) was previously evaluated for biological resources (Sycamore Environmental 2015a). Biological conditions in the area of proposed stormwater capacity appear unchanged in 2019 based on an 8 October 2019 site visit to inspect site conditions, and a review of aerial photographs available in Google Earth. The fields where stormwater capacity is contemplated remain in active agricultural production, and were not re-surveyed on foot as part of this update.

## **METHODS**

### ***Updated Database Queries***

Updated database queries from the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC), the California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants were reviewed (Attachment D). The updated queries were compared with the queries analyzed previously in the BRE. This letter includes an evaluation of eight special-status species that were not previously considered (Table 1). Additional sources of special-status species occurrence information reviewed include records of special-status birds from eBird (2019).

### ***Biological and Botanical Survey***

Sycamore Environmental biologists Mike Bower, M.S., and Juan Mejia, B.S., conducted a biological and botanical survey on 7 August 2019. The survey consisted of walking through the BSA while searching for special-status plant and wildlife species and their habitat/sign. The survey focused on the areas outside active agricultural cultivation (i.e., the edges of agricultural fields, and fallow fields). Plants and wildlife species were identified and recorded (Attachment E). Areas within 200 feet of the BSA were searched for elderberry (*Sambucus* sp.) shrubs. Areas within 500 feet of the BSA were searched for burrowing owl (*Athene cunicularia*) and potentially suitable burrows. Areas within 1,320 feet of the BSA were searched for potential Swainson's hawk (*Buteo swainsoni*) nest trees, and other sensitive habitats as required under the Yolo HCP. The occupancy status of potential burrowing owl burrows was determined based on the presence of owls, or sign of burrowing owl consisting of whitewash, feathers, pellets, etc. The *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) considers burrow sites to be occupied if a burrowing owl has been observed occupying a burrow, or burrowing owl sign has been observed at a burrow, within the last three years. Within the last three years, Sycamore Environmental biologists have conducted numerous burrowing owl surveys and monitoring events covering the areas within 500 feet of the BSA. The results of all surveys within the last three years are incorporated in the survey results for burrowing owl presented in this letter.

### ***Mapping & Land Cover Type Map***

Coverage under the Yolo HCP requires evaluation of habitat within up to 1,320 feet of the Project, and preparation of a Land Cover Type Map. Habitat mapping conducted in the BRE did not extend 1,320 feet from the Project, and did not utilize Yolo HCP land cover types. An updated Land Cover Type Map consistent with Yolo HCP requirements is in Attachment B. The mapping was conducted in Google Earth and ArcGIS using field notes and photos from the 7 August 2019 survey.

## RESULTS

### *Existing Conditions*

Within the BSA, there have been no noteworthy changes to biological communities and land use documented in the BRE and EIR. Field crops in the actively farmed agricultural fields north of County Road 32A have rotated (safflower, sunflower, and corn were cultivated in these fields in 2019). The previously fallow/ruderal detention basin located along the eastern edge of the BSA was planted with sunflower in 2019. Areas south of County Road 32A remain fallow and dominated by nonnative weeds (mostly yellow star-thistle; *Centaurea solstitialis*).

West of the BSA and Mace Boulevard, there are two new developments under construction: 1) the Residence Inn – Mace Ranch Project located south of 2nd Street and west of Mace Boulevard, and 2) the Mace and Alhambra Project located north of Alhambra Drive and west of Mace Boulevard. No other noteworthy changes to biological communities and land use have occurred.

### *Updated Land Cover Type Mapping*

An updated land cover type map is in Appendix C. Yolo HCP land cover types in the BSA include Bulrush-Cattail Wetland (in the Mace Drainage Channel), Field Crops, Deciduous Fruit/Nuts, Semiagricultural/Incidental to Agriculture, Urban Ruderal, and Urban or Built Up. Within 1,320 feet of the BSA, the same land cover types are present, plus Eucalyptus Groves, and Vegetated Corridor. The locations of elderberry shrubs observed in 2019 are shown on the land cover type map (EB #3, 4, and 5).

### *Special-status Species not Previously Evaluated*

The updated database queries (Attachment D) include eight special-status species not previously evaluated. These species are listed and evaluated in Table 1 below. The BSA provides potential habitat for northern harrier (*Circus hudsonius*; foraging habitat only), pappose tarplant (*Centromadia parryi* ssp. *parryi*), and Jepson's coyote thistle (*Eryngium jepsonii*). None of the eight species evaluated in Table 1 were observed in the BSA during biological or botanical surveys, including the protocol floristic botanical surveys conducted on 19 May 2015, 11 September 2015, and 7 August 2019.

Table 1. Evaluation of Special-status Species Not Previously Considered.

Special-Status Species/ Common Name	Federal Status <sup>a</sup>	State Status <sup>a,b</sup>	Source <sup>c</sup>	Habitat Requirements	Potential to Occur in the BSA?
<b>Invertebrates</b>					
<i>Bombus occidentalis occidentalis</i> Western bumble bee	--	C	2	Colony-nesting bumble bee found in meadows and grasslands with abundant floral sources. Requires adequate nectar and pollen supplies from February to November. Common nectar sources include <i>Cirsium</i> , <i>Eriogonum</i> , <i>Solidago</i> , <i>Aster</i> , and <i>Ceanothus</i> . Requires floral resources distributed over the spring, summer, and fall. Nests in underground cavities such as squirrel burrows and in open west- and southwest-facing slopes often bordered by trees. Occasionally nests above ground in logs. Isolated patches of habitat are not sufficient to fully support bumble bee populations. Historically common on the west coast of North America from southern British Columbia, through central CA, south to NM. In CA, western bumble bee is now restricted to high-elevation Sierra Nevada sites and a few records along the north coast (Xerces 2018).	No. The BSA is mostly disked agricultural fields. The primarily agricultural region lacks sufficient floral resources distributed over the spring, summer, and fall. This species has been extirpated from the valley floor. There are no CNDDDB records of this species in the Central Valley after 1980.
<i>Bombus crotchii</i> Crotch bumble bee	--	C	2	Inhabits open grassland and scrub habitats. Primarily nests underground. Generalist foragers visiting a wide variety of flowering plants including plants in the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae. Requires floral resources distributed over the spring, summer, and fall. Isolated patches of habitat are not sufficient to fully support bumble bee populations. Historically common in the Central Valley, now considered extirpated from the northernmost part of the Valley, and nearly absent from Arbuckle, south (Hatfield et al. 2014; Xerces 2018).	No. The BSA is mostly of disked agricultural fields. The primarily agricultural region lacks sufficient floral resources distributed over the spring, summer, and fall. This species is potentially extirpated from the valley floor. There are no CNDDDB records of this species in the Central Valley after 2007.
<b>Birds</b>					
<i>Circus hudsonius</i> Northern harrier	--	SSC	2	Occurs in annual grassland up to lodgepole pine and alpine meadow habitat as high as 10,000 ft. Breeds from sea level to 5,700 ft in the Central Valley and Sierra Nevada Mountains, and up to 3,600 ft in northeastern CA. Frequents meadows, grasslands, open rangelands, desert sinks, and both fresh and saltwater emergent wetlands. Seldom found in wooded areas. Uses tall grasses and forbs in wetlands, or at the wetland/field border, for cover. Roosts and nests on the ground in shrubby vegetation, usually at marsh edges. Typically nests in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water (CWHR 2019). Nesting sites are of concern to CDFW (2019).	There is no suitable nesting habitat in the BSA. This species was not observed during biological surveys. Agricultural and ruderal habitat in the BSA provide potential foraging habitat for this species.

Special-Status Species/ Common Name	Federal Status <sup>a</sup>	State Status <sup>a,b</sup>	Source <sup>c</sup>	Habitat Requirements	Potential to Occur in the BSA?
<i>Laterallus jamaicensis coturniculus</i> California black rail	--	T	2	Inhabits saline, brackish, and freshwater emergent wetlands in the Bay Area, Sacramento-San Joaquin Delta, the Salton Sea, the lower Colorado River, a few locations in coastal southern CA, and the northern Sierra foothills of Butte, Nevada, Placer, and Yuba cos. Typically found in the immediate vicinity of tidal sloughs near the upper limit of tidal flooding in tidal emergent wetlands dominated by pickleweed and in brackish marshes supporting bulrushes in association with pickleweed. In freshwater areas, generally found in marshes dominated by bulrush, cattail, or saltgrass (CWHR 2019). Water regime is a critical habitat factor; black rails are often found in wetlands with perennial standing or flowing water. Black rails use wetland zones with shallower water than other North American rails, generally less than 1.2 in. Wetlands in the Sacramento Valley managed for waterfowl or rice typically lack sufficient shallow water habitat (Richmond et al. 2010).	No. There is no suitable habitat in the BSA. The band of cattail in the Mace Drainage Channel is of limited extent, is periodically cleared, does not provide sufficient cover, and does not contain sufficient water during the summer and fall. This species was not observed during biological surveys.
<b>Plants</b>					
<i>Centromadia parryi</i> ssp. <i>parryi</i> Pappose tarplant	--	--/1B.2	2, 3	Annual herb found in chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, and vernal mesic valley and foothill grassland from 7 to 1,380 ft. Often found in alkaline conditions. Known from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma, and Yolo cos. Blooms from May through November (CNPS 2019).	No. This species was not observed during protocol floristic botanical surveys conducted on 19 May 2015, 11 September 2015, and 7 August 2019. The edges of agricultural fields and other open areas not subject to active cultivation provide potential habitat for this species.
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	--	--/1B.2	2, 3	Perennial herb found on clay soils in Valley and foothill grasslands and vernal pools from 9 to 985 ft. Known from Alameda, Amador, Calaveras, Contra Costa, Fresno, Napa, San Mateo, Solano, Stanislaus, Tuolumne, and Yolo cos. Blooms April through August (CNPS 2019).	No. This species was not observed during protocol floristic botanical surveys conducted on 19 May 2015, 11 September 2015, and 7 August 2019. Shallow clay depressions along the edges of agricultural fields and in other open areas not subject to active cultivation provide potential habitat for this species.
<i>Puccinellia simplex</i> California alkali grass	--	--/1B.2	2, 3	Annual herb found in alkaline, vernal mesic sinks, flats, and lake margins within chenopod scrub, meadows, seeps, Valley and foothill grassland, and vernal pools from 7 to 3,050 ft. Known from Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo cos. Presumed extirpated from Kings Co. Blooms March through May (CNPS 2019). Habitat also described as "saline flats, mineral springs" (Baldwin et al. 2012).	No. This species was not observed during protocol floristic botanical surveys conducted on 19 May 2015, 11 September 2015, and 7 August 2019. There is no suitable habitat in the BSA. There are no saline flats or mineral springs in the BSA. There are no suitable vernal mesic habitats in the BSA.

Special-Status Species/ Common Name	Federal Status <sup>a</sup>	State Status <sup>a,b</sup>	Source <sup>c</sup>	Habitat Requirements	Potential to Occur in the BSA?
<i>Sidalcea keckii</i> Keck's checkerbloom	E	R/1B.1	2	Annual herb found on serpentine and clay soils of cismontane woodland and valley and foothill grassland from 245 to 2,135 ft. Known from Fresno, Merced, and Tulare cos, and possibly from Colusa, Napa, Solano and Yolo cos. Blooms April through June (CNPS 2019). In Napa and Colusa cos. occur in a range of habitats including serpentine outcrops, serpentine chaparral, roadsides, blue-oak-dominated woodland, south-facing slopes, and grasslands within oak-gray pine woodland. Genetic analyses have identified Colusa and Yolo Co. plants as more closely related to a common <i>Sidalcea</i> species than to <i>S. keckii</i> (USFWS 2012).	No. This species was not observed during protocol floristic botanical surveys conducted on 19 May 2015, 11 September 2015, and 7 August 2019. The BSA is outside the geographic and elevation range. There is no suitable habitat in the BSA.

<sup>a</sup> **Status:** Endangered (E); Threatened (T); Proposed (P); Candidate (C), Delisted (D), Fully Protected (FP); Rare (R); State Species of Special Concern (SSC); Proposed Critical Habitat (PCH); Critical Habitat (CH) - Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

<sup>b</sup> **CNPS California Rare Plant Rank:** 1A = Presumed Extinct in CA; 1B = Rare or Endangered in CA and elsewhere; 2 = R/E in CA and more common elsewhere; 3 = More information is needed about this plant species (review list); 4 = Limited distribution (watch list).

CNPS Decimal Extensions: .1 = Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in CA (20-80% occurrences threatened); .3 = Not very endangered in CA (<20% of occurrences threatened or no current threats known).

<sup>c</sup> **Sources:** 1 = USFWS (2019) List; 2 = CNDDDB (2019) query of the Davis Quad and all surrounding quads; 3 = CNPS (2019) query of the Davis Quad and all surrounding quads.

### **Biological and Botanical Survey**

Except for the burrowing owl observed on-site and discussed below, no special-status wildlife species were observed in the BSA during the 7 August 2019 biological survey. No special-status wildlife species were previously documented on the site (Sycamore Environmental 2015b). No potential raptor nests were observed in the trees in the BSA.

During the 7 August 2019 survey, three additional elderberry shrubs were observed just outside the BSA. Two of these occur along the eastern boundary of the site, approximately 280 and 600 feet north of County Road 32A, respectively. The third shrub is on the road shoulder north of the ‘Mace Curve’ just north of the intersection County Road 104 intersection. No Valley elderberry longhorn beetle exit holes were observed on these shrubs. The elderberry shrubs previously documented along the western edge of the site and at the north end of the Northern Sewer Line Alternative are still present. The locations of the five elderberry shrubs are shown on the map in Attachment B.

During the 7 August 2019 survey, Parry’s rough tarplant (*Centromadia parryi* ssp. *rudis*; CNPS California Rare Plant Rank 4.2) was observed growing in approximately the same location and abundance as documented previously (i.e., roughly 90 plants, mostly within a shallow depression adjacent to the gravel parking lot serving Ikeda’s Market).

### **Discussion of Burrowing Owl**

A burrowing owl observation map is in Attachment C. The map includes observations of burrowing owl and burrow complexes made by Sycamore Environmental within 500 feet of the BSA, within the last three years. A total of 5 occupied burrow complexes occur within 500 feet of the BSA (Sites A through E). Two of the complexes (Sites C and D) may not represent separate breeding colonies since they do not contain known breeding burrows. Numerous unoccupied burrows occur west and south of the site as shown on the map in Attachment C.

Table 2. Occupied Burrowing Owl Burrow Complexes

<b>SITE</b>	<b>LOCATION</b>	<b>OWLS LAST OBSERVED</b>	<b>BREEDING COLONY</b>
<b>A</b>	Approximately 530 feet north of the BSA, along north side of County Rd 30B	<b>Fall 2019</b> (2 owls at a burrow on 8 October 2019)	<b>Yes</b> (based on eBird checklists)
<b>B</b>	Northwestern edge of BSA, along east side of County Rd 104	<b>Fall 2019</b> (1 owl at a burrow on 7 August 2019)	<b>Yes</b> (based on eBird checklists)
<b>C</b>	Western edge of the BSA, along east side of Mace Blvd, south of intersection with County Rd 104	<b>Fall 2018</b> (1 owl at a burrow on 8 October 2018)	<b>Unknown</b> (potential satellite burrows of Sites B/E)
<b>D</b>	Approximately 400 feet west of the BSA, in vacant lot north of 2nd St	<b>Fall 2019</b> (1 owl at a burrow on 7 August 2019)	<b>Unknown</b> (potential satellite burrows of Sites B/E)
<b>E</b>	Approximately 100 feet west of the BSA, along west side of Mace Blvd; includes artificial burrows southwest of Mace Blvd/ 2nd St intersection	<b>Fall 2019</b> (3 owls at burrows on 7 August 2019)	<b>Yes</b> (based on eBird checklists)

The 2019 distribution and abundance of burrowing owl on the Project site and within 500 feet are similar to that described in the EIR, with known occupied burrow complexes to the west and north. The recent construction of the Residence Inn – Mace Ranch Project and the Mace and Alhambra Project have converted approximately 9 acres in total to urban habitat unsuitable for burrowing owl. The City required mitigation for burrowing owl for both of these projects. The Residence Inn – Mace Ranch Project constructed artificial burrows for burrowing owl immediately southwest of the Mace Boulevard/ 2<sup>nd</sup> Street intersection (northern part of Site E shown on the map in Attachment C).

Chapter 4 of the EIR (Responses to Comments) concludes: “The project avoids take of individual owls and will permanently protect foraging habitat. Therefore, the project does not substantially reduce foraging habitat for burrowing owl or reduce the local or regional burrowing owl populations below self-sustaining levels. By permanently protecting foraging habitat within Yolo County, the project will not restrict the range or substantially reduce the number of burrowing owl within Yolo County.” The EIR concludes that impacts to burrowing owl will be less than significant with incorporation of mitigation. In the analysis of cumulative effects, the EIR concludes that the project will have cumulatively considerable effects that are significant and unavoidable. These EIR conclusions remains accurate given conditions observed in 2019, and given implementation of applicable mitigation measures (see discussion below).

#### ***Discussion of Biological Resource Impacts and Mitigation***

The EIR included mitigation measures for special-status plants (Measure 4.4-1), Valley elderberry longhorn beetle (VELB; Measure 4.4-2), giant garter snake (GGS; Measure 4.4-3), burrowing owl (Measure 4.4-4), Swainson’s hawk (Measure 4.4-5), other nesting birds (Measure 4.4-6), riparian/sensitive habitat (Measure 4.4-7), a contingency to implement Yolo HCP measures should the Yolo HCP be adopted prior to the first phase of the Project (Measure 4.4-11), and a City design review for consistency with applicable plans, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects related to biological resources (Measure 4.4-12).

No new potentially significant impacts to biological resources have been identified in this biological resource evaluation update. The EIR measures remain feasible and mitigate potential Project impacts to biological resources to less-than-significant levels. The contingency for the Yolo HCP outlined in EIR Measure 4.4-11 will take effect, triggering applicable Yolo HCP mitigation measures. The final part of EIR Measure 4.4-11 states, “To the extent there is duplication in mitigation for a given species, the requirements of the HCP/NCCP shall supersede.”

Based on the Yolo HCP Draft Permitting Guide (1 May 2019 version), and the Yolo HCP land cover type mapping (Attachment B), the following species-specific Yolo HCP measures will apply:

- AMM 12 *Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle*
- AMM 15 *Minimize Take and Adverse Effects on Habitat of Giant Garter Snake*
- AMM 16 *Minimize Take and Adverse Effects on Habitat of Swainson’s Hawk & White-Tailed Kite*
- AMM 18 *Minimize Take and Adverse Effects on Burrowing Owl*
- AMM 21 *Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird*



The Project will also be required to implement the standard Yolo HCP Measures AMM 1 through 10 covering general project design, general construction and operations and maintenance, and sensitive natural communities.

The Project will not affect habitat or individuals of the following Yolo HCP species: palmate-bracted birds beak, California tiger salamander, western pond turtle, western yellow-billed cuckoo, least Bell's vireo, and bank swallow. Suitable habitat for these species does not occur in the BSA or within applicable Yolo HCP buffers extending up to 1,320 feet around the Project (Attachment B). Therefore, the following HCP measures are not applicable to the Project: AMM 11, AMM 13, AMM 14, AMM 17, AMM 19, and AMM 20.

Tricolored blackbird (*Agelaius tricolor*) was evaluated in the EIR as a Candidate species, and has since been listed as State threatened. The change in listing does not change the evaluation. Coverage under the Yolo HCP requires implementation of Yolo HCP AMM 21 for Tricolored Blackbird.

While additional occupied burrowing owl burrows have been documented at several locations along the perimeter of the project site, this does not change the impact analysis or mitigation described in the EIR (see especially the Master Response to Comments #7 for burrowing owl in the Final EIR).

Please contact me if you have any questions.

Yours truly,



Mike Bower, M.S.  
Botanist/Biologist

- Attachment A. Aerial Photograph of the Study Area
- Attachment B. Yolo HCP Land Cover Type Map
- Attachment C. Burrowing Owl Observation Map
- Attachment D. Updated Database Queries (USFWS, CNDDDB, CNPS)
- Attachment E. Plant and Wildlife Species Observed in the Study Area

## Literature Cited

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- Xerces Society for Invertebrate Conservation (Xerces). October 2018. A petition to the state of California Fish and Game Commission to list the Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western blumble bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act. Submitted by Xerces Society for Invertebrate Conservation, Defenders of Wildlife, and Center for Food Safety. <https://xerces.org/wp-content/uploads/2018/10/CESA-petition-Bombus-Oct2018.pdf>

# **Attachment A.**

## **Aerial Photograph**

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Aggie Research Campus  
 Yolo County, CA  
 18 October 2019

 Biological Study Area (BSA)

 **SYCAMORE**  
 Environmental  
 Consultants, Inc.

Aerial Photograph: 13 August 2018  
 2018 Yolo County Orthos Imagery  
 ESRI World Imagery Arcmap Service Layer

Attachment A.  
 Aerial Photograph

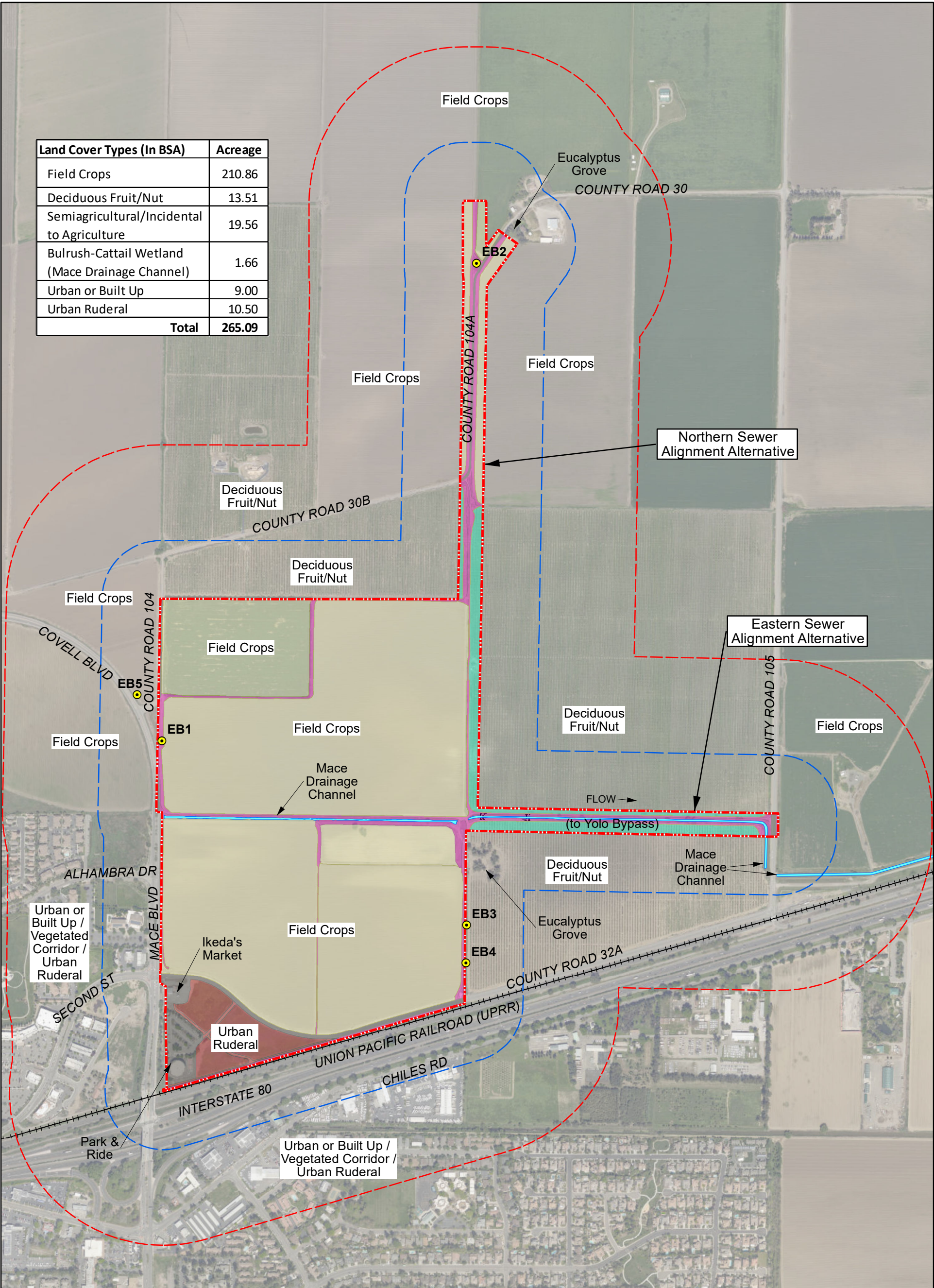
## **Attachment B.**

### Yolo HCP Land Cover Type Map

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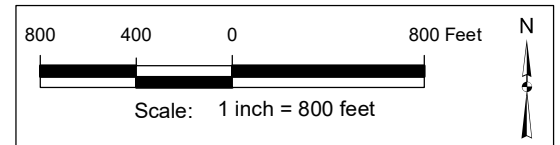


Land Cover Types (In BSA)	Acreage
Field Crops	210.86
Deciduous Fruit/Nut	13.51
Semiagricultural/Incidental to Agriculture	19.56
Bulrush-Cattail Wetland (Mace Drainage Channel)	1.66
Urban or Built Up	9.00
Urban Ruderal	10.50
<b>Total</b>	<b>265.09</b>



Aggie Research Campus  
Yolo County, CA  
18 October 2019

- Biological Study Area (BSA)
- 500 ft Buffer
- 1,320 ft Buffer
- Elderberry Shrub Location
- Field Crops
- Deciduous Fruit/Nut
- Bulrush-Cattail Wetland (Mace Drainage Channel)
- Semiagricultural/Incidental to Agriculture
- Urban or Built Up
- Urban Ruderal



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 13 August 2018  
2018 Yolo County Orthos Imagery  
ESRI World Imagery Arcmap Service Layer

Attachment B.  
Land Cover Type Map



## **Attachment C.**

### **Burrowing Owl Observation Map**

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Land Cover Types (In BSA)	Acreage
Field Crops	210.86
Deciduous Fruit/Nut	13.51
Semiagricultural/Incidental to Agriculture	19.56
Bulrush-Cattail Wetland (Mace Drainage Channel)	1.66
Urban or Built Up	9.00
Urban Ruderal	10.50
<b>Total</b>	<b>265.09</b>

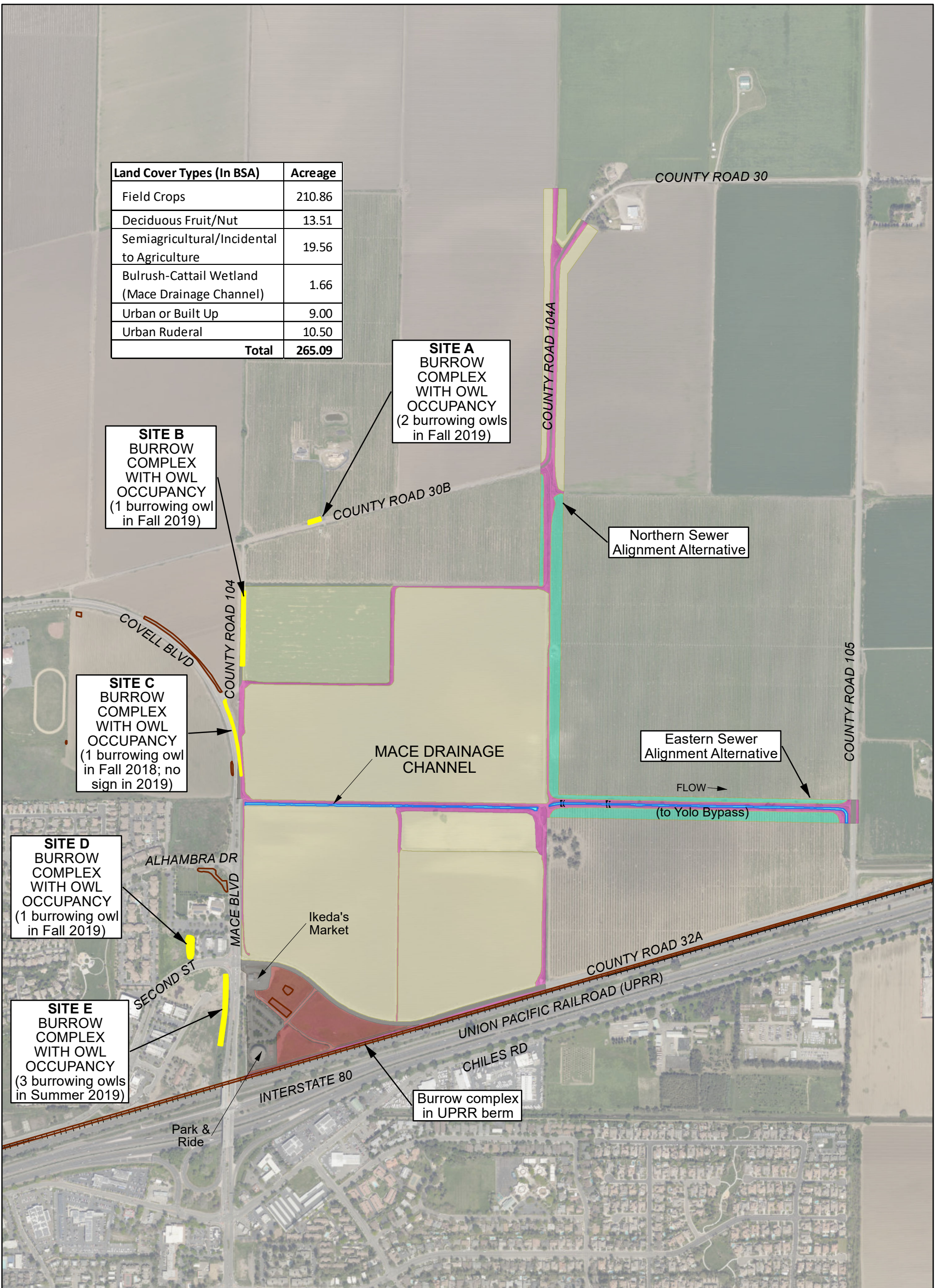
**SITE A**  
BURROW COMPLEX WITH OWL OCCUPANCY (2 burrowing owls in Fall 2019)

**SITE B**  
BURROW COMPLEX WITH OWL OCCUPANCY (1 burrowing owl in Fall 2019)

**SITE C**  
BURROW COMPLEX WITH OWL OCCUPANCY (1 burrowing owl in Fall 2018; no sign in 2019)

**SITE D**  
BURROW COMPLEX WITH OWL OCCUPANCY (1 burrowing owl in Fall 2019)

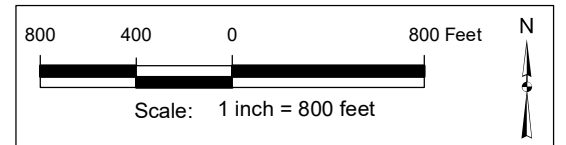
**SITE E**  
BURROW COMPLEX WITH OWL OCCUPANCY (3 burrowing owls in Summer 2019)



Aggie Research Campus  
Yolo County, CA  
18 October 2019

- Mace Drainage Channel
- Burrow Complex With Owl Occupancy (Year Observed Occupied)
- Burrow Complex - Occupancy Unknown

- Field Crops
- Deciduous Fruit/Nut
- Bulrush-Cattail Wetland (Mace Drainage Channel)
- Semiagricultural/Incidental to Agriculture
- Urban or Built Up
- Urban Ruderal



**SYCAMORE**  
Environmental  
Consultants, Inc.

Aerial Photograph: 13 August 2018  
2018 Yolo County Orthos Imagery  
ESRI World Imagery Arcmap Service Layer

Attachment C.  
Burrowing Owl  
Observation Map



## **Attachment D.**

### Updated Database Queries (USFWS, CNDDDB, CNPS)

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# 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.

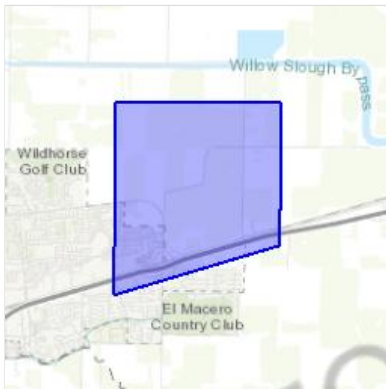
## Project information

### NAME

Aggie Research Campus

### LOCATION

Yolo County, California



### DESCRIPTION

Approximately 265 acre mixed use development. Project in the planning phase.

## 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



# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Davis (3812156) OR Woodland (3812167) OR Grays Bend (3812166) OR Taylor Monument (3812165) OR Merritt (3812157) OR Sacramento West (3812155) OR Dixon (3812147) OR Saxon (3812146) OR Clarksburg (3812145))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<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>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Archoplites interruptus</i> Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
<i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Atriplex cordulata var. cordulata</i> heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
<i>Atriplex depressa</i> brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branchinecta mesovallensis</i> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	



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
<b>Carex comosa</b> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<b>Centromadia parryi ssp. parryi</b> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<b>Charadrius alexandrinus nivosus</b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b>Charadrius montanus</b> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<b>Chloropyron palmatum</b> palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
<b>Cicindela hirticollis abrupta</b> Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
<b>Circus hudsonius</b> northern harrier	ABNKC11011	None	None	G5	S3	SSC
<b>Coccyzus americanus occidentalis</b> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b>Desmocerus californicus dimorphus</b> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<b>Egretta thula</b> snowy egret	ABNGA06030	None	None	G5	S4	
<b>Elanus leucurus</b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b>Elderberry Savanna</b> Elderberry Savanna	CTT63440CA	None	None	G2	S2.1	
<b>Emys marmorata</b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b>Eryngium jepsonii</b> Jepson's coyote-thistle	PDAP10Z130	None	None	G2	S2	1B.2
<b>Extriplex joaquinana</b> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<b>Falco columbarius</b> merlin	ABNKD06030	None	None	G5	S3S4	WL
<b>Fritillaria pluriflora</b> adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
<b>Great Valley Cottonwood Riparian Forest</b> Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
<b>Hibiscus lasiocarpus var. occidentalis</b> woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
<b>Lasionycteris noctivagans</b> silver-haired bat	AMACC02010	None	None	G5	S3S4	
<b>Lasiurus cinereus</b> hoary bat	AMACC05030	None	None	G5	S4	



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
<b><i>Laterallus jamaicensis coturniculus</i></b> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<b><i>Lepidium latipes var. heckardii</i></b> Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
<b><i>Lepidurus packardi</i></b> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<b><i>Lilaeopsis masonii</i></b> Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
<b><i>Linderiella occidentalis</i></b> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<b><i>Melospiza melodia</i></b> song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
<b><i>Myrmosula pacifica</i></b> Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
<b><i>Navarretia leucocephala ssp. bakeri</i></b> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<b><i>Neostapfia colusana</i></b> Colusa grass	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Oncorhynchus mykiss irideus pop. 11</i></b> steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<b><i>Oncorhynchus tshawytscha pop. 6</i></b> chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
<b><i>Oncorhynchus tshawytscha pop. 7</i></b> chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	G5	S1	
<b><i>Plagiobothrys hystriculus</i></b> bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
<b><i>Plegadis chihi</i></b> white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
<b><i>Pogonichthys macrolepidotus</i></b> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<b><i>Progne subis</i></b> purple martin	ABPAU01010	None	None	G5	S3	SSC
<b><i>Puccinellia simplex</i></b> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<b><i>Sidalcea keckii</i></b> Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1
<b><i>Spirinchus thaleichthys</i></b> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<b><i>Symphotrichum lentum</i></b> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2



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
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Thamnophis gigas</i></b> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<b><i>Trifolium hydrophilum</i></b> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<b><i>Tuctoria mucronata</i></b> Crampton's tuctoria or Solano grass	PMPOA6N020	Endangered	Endangered	G1	S1	1B.1
<b>Valley Oak Woodland</b> Valley Oak Woodland	CTT71130CA	None	None	G3	S2.1	
<b><i>Vireo bellii pusillus</i></b> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
<b><i>Xanthocephalus xanthocephalus</i></b> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 67

# 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. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> 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 Fisheries<sup>2</sup>).

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

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

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

## Birds

NAME	STATUS
Western Snowy Plover <i>Charadrius nivosus nivosus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened

## Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

California Tiger Salamander *Ambystoma californiense* Threatened  
There is **final** critical habitat for this species. Your location is outside the critical habitat.  
<https://ecos.fws.gov/ecp/species/2076>

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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.)
<b>Bald Eagle</b> <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. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Jan 1 to Aug 31
<b>Burrowing Owl</b> <i>Athene cunicularia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Breeds Mar 15 to Aug 31
<b>Clark's Grebe</b> <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
<b>Common Yellowthroat</b> <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/2084">https://ecos.fws.gov/ecp/species/2084</a>	Breeds May 20 to Jul 31
<b>Costa's Hummingbird</b> <i>Calypte costae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9470">https://ecos.fws.gov/ecp/species/9470</a>	Breeds Jan 15 to Jun 10
<b>Golden Eagle</b> <i>Aquila chrysaetos</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. <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds Jan 1 to Aug 31

<p>Lawrence's Goldfinch <i>Carduelis lawrencei</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9464">https://ecos.fws.gov/ecp/species/9464</a></p>	Breeds Mar 20 to Sep 20
<p>Lewis's Woodpecker <i>Melanerpes lewis</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a></p>	Breeds Apr 20 to Sep 30
<p>Long-billed Curlew <i>Numenius americanus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a></p>	Breeds elsewhere
<p>Marbled Godwit <i>Limosa fedoa</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9481">https://ecos.fws.gov/ecp/species/9481</a></p>	Breeds elsewhere
<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  <a href="https://ecos.fws.gov/ecp/species/9410">https://ecos.fws.gov/ecp/species/9410</a></p>	Breeds Apr 1 to Jul 20
<p>Oak Titmouse <i>Baeolophus inornatus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9656">https://ecos.fws.gov/ecp/species/9656</a></p>	Breeds Mar 15 to Jul 15
<p>Rufous Hummingbird <i>selasphorus rufus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a></p>	Breeds elsewhere
<p>Short-billed Dowitcher <i>Limnodromus griseus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a></p>	Breeds elsewhere
<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>	Breeds Feb 20 to Sep 5
<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  <a href="https://ecos.fws.gov/ecp/species/4243">https://ecos.fws.gov/ecp/species/4243</a></p>	Breeds Apr 15 to Jul 20
<p>Tricolored Blackbird <i>Agelaius tricolor</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3910">https://ecos.fws.gov/ecp/species/3910</a></p>	Breeds Mar 15 to Aug 10
<p>Whimbrel <i>Numenius phaeopus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a></p>	Breeds elsewhere

**Willet** *Tringa semipalmata*

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

Breeds elsewhere

**Wrentit** *Chamaea fasciata*

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

Breeds Mar 15 to Aug 10

**Yellow-billed Magpie** *Pica nuttalli*

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

Breeds Apr 1 to Jul 31

<https://ecos.fws.gov/ecp/species/9726>

## 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.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES

JAN

FEB

MAR

APR

MAY

JUN

JUL

AUG

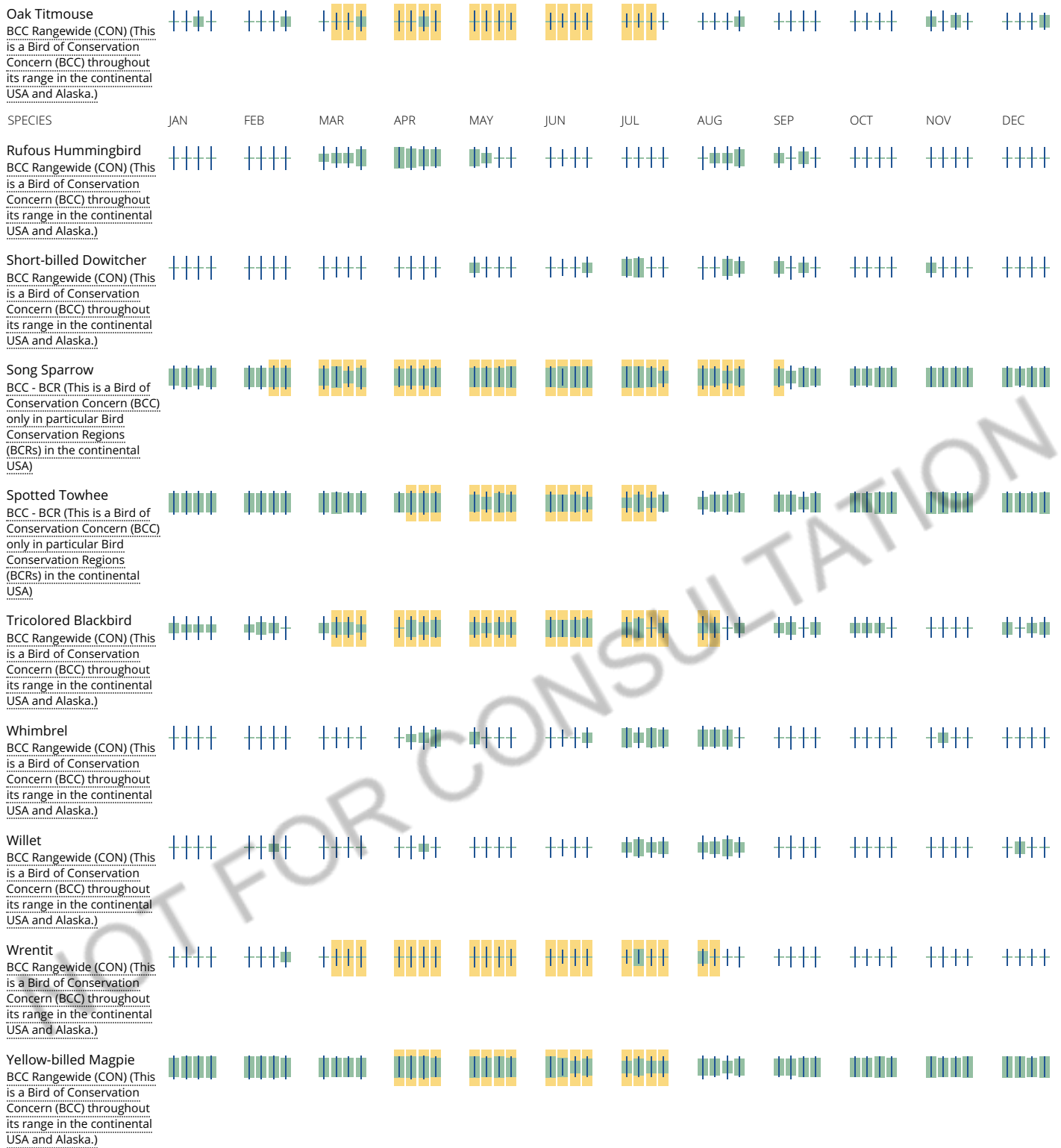
SEP

OCT

NOV

DEC





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

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

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

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

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

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

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

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

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

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

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

### What are the levels of concern for migratory birds?

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

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

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

### Details about birds that are potentially affected by offshore projects

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

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

### What if I have eagles on my list?

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

### Proper Interpretation and Use of Your Migratory Bird Report

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

# Facilities

## National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

### FRESHWATER EMERGENT WETLAND

[PEM1Cx](#)  
[PEM1Fx](#)  
[PEM1C](#)  
[PEM1A](#)

### RIVERINE

[R2UBFx](#)  
[R5UBFx](#)  
[R4SBCx](#)

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

### Data limitations

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

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

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

### Data exclusions

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

#### Data precautions

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

NOT FOR CONSULTATION



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

## Plant List

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

### Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], Found in Quads 3812167, 3812166, 3812165, 3812157, 3812156, 3812155, 3812147, 3812146 and 3812145;

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

Scientific Name	Common Name	Lifeform	Blooming Period	CA Rare Plant Rank	State Listing Status	Federal Listing Status
<a href="#">Astragalus pauperculus</a>	depauperate milk-vetch	annual herb	Mar-Jun	4.3		
<a href="#">Astragalus tener var. ferrisiae</a>	Ferris' milk-vetch	annual herb	Apr-May	1B.1		
<a href="#">Astragalus tener var. tener</a>	alkali milk-vetch	annual herb	Mar-Jun	1B.2		
<a href="#">Atriplex cordulata var. cordulata</a>	heartscale	annual herb	Apr-Oct	1B.2		
<a href="#">Atriplex depressa</a>	brittlescale	annual herb	Apr-Oct	1B.2		
<a href="#">Carex comosa</a>	bristly sedge	perennial rhizomatous herb	May-Sep	2B.1		
<a href="#">Centromadia parryi ssp. parryi</a>	pappose tarplant	annual herb	May-Nov	1B.2		
<a href="#">Centromadia parryi ssp. rudis</a>	Parry's rough tarplant	annual herb	May-Oct	4.2		
<a href="#">Chloropyron palmatum</a>	palmete-bracted bird's-beak	annual herb (hemiparasitic)	May-Oct	1B.1	CE	FE
<a href="#">Eryngium jepsonii</a>	Jepson's coyote thistle	perennial herb	Apr-Aug	1B.2		
<a href="#">Extriplex joaquinana</a>	San Joaquin spearscale	annual herb	Apr-Oct	1B.2		
<a href="#">Fritillaria pluriflora</a>	adobe-lily	perennial bulbiferous herb	Feb-Apr	1B.2		
<a href="#">Hesperevax caulescens</a>	hogwallow starfish	annual herb	Mar-Jun	4.2		
<a href="#">Hibiscus lasiocarpus var. occidentalis</a>	woolly rose-mallow	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2		
<a href="#">Juglans hindsii</a>	Northern California black walnut	perennial deciduous tree	Apr-May	1B.1		
<a href="#">Lepidium latipes var. heckardii</a>	Heckard's pepper-grass	annual herb	Mar-May	1B.2		
<a href="#">Lessingia hololeuca</a>	woolly-headed lessingia	annual herb	Jun-Oct	3		
<a href="#">Lilaeopsis masonii</a>	Mason's lilaeopsis	perennial rhizomatous herb	Apr-Nov	1B.1	CR	
<a href="#">Myosurus minimus ssp. apus</a>	little mousetail	annual herb	Mar-Jun	3.1		
<a href="#">Navarretia leucocephala ssp. bakeri</a>	Baker's navarretia	annual herb	Apr-Jul	1B.1		
<a href="#">Neostapfia colusana</a>	Colusa grass	annual herb	May-Aug	1B.1	CE	FT
<a href="#">Plagiobothrys hystriculus</a>	bearded popcornflower	annual herb	Apr-May	1B.1		
<a href="#">Puccinellia simplex</a>	California alkali grass	annual herb	Mar-May	1B.2		
<a href="#">Symphyotrichum lentum</a>	Suisun Marsh aster	perennial rhizomatous herb	(Apr)May-Nov	1B.2		
<a href="#">Trifolium hydrophilum</a>	saline clover	annual herb	Apr-Jun	1B.2		
<a href="#">Tuctoria mucronata</a>	Crampton's tuctoria or Solano grass	annual herb	Apr-Aug	1B.1	CE	FE

### Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 02 October 2019].

#### Search the Inventory

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[Glossary](#)

#### Information

[About the Inventory](#)  
[About the Rare Plant Program](#)  
[CNPS Home Page](#)

#### Contributors

[The Calflora Database](#)  
[The California Lichen Society](#)  
[California Natural Diversity Database](#)

#### Questions and Comments

[rareplants@cnps.org](mailto:rareplants@cnps.org)

## **Attachment E.**

### **Plant and Wildlife Species Observed**

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## Plant and Wildlife Species Observed

*Note: This list of species is cumulative. It includes species observed on the Project site during all biological and botanical surveys conducted by Sycamore Environmental 2015-2019)*

Plant Species Observed. Taxonomy follows Baldwin et al. (2012).

Family	Scientific Name	Common Name	N/I <sup>1</sup>	Cal-IPC <sup>2</sup>
<b>FERNS</b>				
Azollaceae	<i>Azolla filiculoides</i>	Mosquito fern	N	
<b>EUDICOTS</b>				
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry	N	
Amaranthaceae	<i>Amaranthus albus</i>	Tumbleweed	I	
	<i>Amaranthus blitoides</i>	Procumbent pigweed	N	
	<i>Amaranthus retroflexus</i>	Redroot pigweed	I	
Anacardiaceae	<i>Pistacia chinensis</i> <sup>3</sup>	Chinese pistache	I	
Apiaceae	<i>Ammi visnaga</i>	Bisnaga	I	
	<i>Anethum graveolens</i>	Dill	I	
	<i>Conium maculatum</i>	Poison hemlock	I	Moderate
	<i>Daucus carota</i>	Carrot, Queen Anne's lace	I	
	<i>Torilis arvensis</i>	Tall sock-destroyer	I	Moderate
Apocynaceae	<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	N	
	<i>Nerium oleander</i> <sup>3</sup>	Common oleander	I	
Asteraceae	<i>Anthemis cotula</i>	Mayweed	I	
	<i>Baccharis pilularis</i>	Coyote brush	N	
	<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	I	Moderate
	<i>Carthamnus tinctorium</i> <sup>3</sup>	Safflower	I	
	<i>Centaurea solstitialis</i>	Yellow star-thistle	I	High
	<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's rough tarplant	N	
	<i>Centromadia pungens</i> ssp. <i>pungens</i>	Common spikeweed	N	
	<i>Cichorium intybus</i>	Chicory	I	
	<i>Cirsium vulgare</i>	Bull thistle	I	Moderate
	<i>Dittrichia graveolens</i>	Stinkwort	I	Moderate
	<i>Erigeron bonariensis</i>	Flax-leaved horseweed	I	
	<i>Erigeron canadensis</i>	Horseweed	N	
	<i>Grindelia</i> sp.	Gumplant	--	
	<i>Helianthus</i> sp. (crop)	Sunflower	--	
	<i>Helianthus annuus</i>	Sunflower	N	
	<i>Heterotheca grandiflora</i>	Telegraph weed	N	
	<i>Helminthotheca echioides</i>	Bristly ox-tongue	I	Limited
	<i>Hypochaeris glabra</i>	Smooth cat's-ear	I	Limited
	<i>Lactuca saligna</i>	Lettuce	I	
	<i>Lactuca serriola</i>	Prickly lettuce	I	
	<i>Leontodon saxatilis</i>	Hairy hawkbit	I	
	<i>Matricaria discoidea</i>	Pineapple weed, rayless chamomile	I	
	<i>Senecio vulgaris</i>	Common groundsel	I	
	<i>Silybum marianum</i>	Milk thistle	I	Limited
	<i>Sonchus asper</i> ssp. <i>asper</i>	Prickly sow thistle	I	
	<i>Sonchus oleraceus</i>	Common sow thistle	I	
	<i>Symphyotrichum subulatum</i>	Annual saltmarsh aster	--	
	<i>Tragopogon porrifolius</i>	Salsify, oyster plant	I	

	<i>Xanthium strumarium</i>	Cocklebur	N	
Bignoniaceae	<i>Catalpa bignonioides</i>	Southern catalpa	I	
Boraginaceae	<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	Seaside heliotrope, alkali heliotrope	N	
	<i>Amsinckia menziesii</i>	Common fiddleneck, small-flowered fiddleneck	N	
	<i>Plagiobothrys</i> sp.	Popcornflower	N	
Brassicaceae	<i>Brassica nigra</i>	Black mustard	I	Moderate
	<i>Capsella bursa-pastoris</i>	Shepherd's purse	I	
	<i>Cardamine oligosperma</i>	Bitter-cress	N	
	<i>Hirschfeldia incana</i>	Perennial, shortpod, or summer mustard	I	Moderate
	<i>Raphanus sativus</i>	Radish	I	Limited
	<i>Lepidium latifolium</i>	Perennial pepperweed	I	High
Cannabaceae	<i>Celtis</i> sp. <sup>3</sup>	Hackberry	I	
Caryophyllaceae	<i>Spergularia rubra</i>	Red sand-spurrey	I	
Chenopodiaceae	<i>Atriplex prostrata</i>	Fat-hen	I	
	<i>Atriplex</i> sp. <sup>4</sup>	Saltbush, orach	--	
	<i>Chenopodium album</i>	Lamb's quarters	I	
	<i>Salsola tragus</i>	Russian thistle, tumbleweed	I	Limited
Convolvulaceae	<i>Convolvulus arvensis</i>	Bindweed, orchard morning-glory	I	
	<i>Cressa truxillensis</i>	Alkali weed	N	
Ericaceae	<i>Arctostaphylos</i> sp. <sup>3</sup>	Manzanita	N	
Euphorbiaceae	<i>Chamaesyce maculata</i>	Spotted spurge	I	
	<i>Chamaesyce serpens</i>	Prostrate spurge	I	
	<i>Croton setigerus</i>	Turkey-mullein	N	
	<i>Triadica sebifera</i>	Chinese tallowtree	I	Moderate
Fabaceae	<i>Acmispon americanus</i> var. <i>americanus</i>	Deervetch, deerweed	N	
	<i>Medicago polymorpha</i>	California burclover	I	Limited
	<i>Medicago sativa</i>	Alfalfa	I	
	<i>Melilotus albus</i>	White sweetclover	I	
	<i>Melilotus indicus</i>	Sourclover	I	
	<i>Prosopis</i> sp.	Mesquite	--	
	<i>Trifolium</i> sp. (growing in disturbed upland; likely <i>T. subterraneum</i> )	Clover	--	
	<i>Trifolium hirtum</i>	Rose clover	I	Limited
	<i>Vicia sativa</i>	Vetch	I	
	<i>Vicia villosa</i> ssp. <i>villosa</i>	Hairy vetch, winter vetch	I	
Fagaceae	<i>Quercus agrifolia</i> <sup>3</sup>	Coast live oak, encina	N	
	<i>Quercus lobata</i>	Valley oak, roble	N	
	<i>Quercus suber</i> <sup>3</sup>	Cork oak	I	
Frankeniaceae	<i>Frankenia salina</i>	Alkali heath	N	
Geraniaceae	<i>Erodium cicutarium</i>	Redstem filaree	I	Limited
	<i>Erodium botrys</i>	Storksbill, filaree	I	
	<i>Erodium moschatum</i>	Greenstem filaree	I	
	<i>Geranium dissectum</i>	Cranesbill, geranium	I	Limited
	<i>Geranium molle</i>	Cranesbill, geranium	I	
Lamiaceae	<i>Lavandula</i> sp. <sup>3</sup>	Lavender	I	
	<i>Rosmarinus</i> sp. <sup>3</sup>	Rosemary	I	
Lythraceae	<i>Lythrum hyssopifolia</i>	Loosestrife	I	Limited
	<i>Lagerstroemia</i> sp.	Crapemyrtle	I	
Malvaceae	<i>Abutilon theophrasti</i>	Velvet-leaf	I	

	<i>Malva nicaeensis</i>	Bull mallow	I	
	<i>Malva parviflora</i>	Cheeseweed, little mallow	I	
	<i>Malvella leprosa</i>	Alkali-mallow, white-weed	N	
Martyniaceae	<i>Proboscidea lutea</i>	Unicorn-plant	I	
Oleaceae	<i>Fraxinus latifolia</i>	Oregon ash	N	
Onagraceae	<i>Epilobium ciliatum</i>	Willowherb	N	
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	N	
Plantaginaceae	<i>Kickxia elatine</i>	Kickxia	I	
Platanaceae	<i>Platanus x acerifolia</i>	London plane tree	I	
	<i>Veronica</i> sp.	Speedwell, brooklime	--	
Polygonaceae	<i>Persicaria</i> sp.	Smartweed	--	
	<i>Polygonum aviculare</i> ssp. <i>depressum</i>	Knotweed, knotgrass	I	
	<i>Rumex crispus</i>	Curly dock	I	Limited
Portulacaceae	<i>Portulaca oleracea</i>	Purslane	I	
Rosaceae	<i>Malus</i> sp. (seedling)	Apple	I	
	<i>Heteromeles arbutifolia</i> <sup>3</sup>	Christmas berry, toyon	N	
	<i>Prunus</i> sp. <sup>3</sup>	Prunus	--	
	<i>Pyrus communis</i>	Common pear	I	
	<i>Rubus armeniacus</i>	Himalayan blackberry	I	High
Rubiaceae	<i>Galium aparine</i>	Goose grass	N	
Salicaceae	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Freemont cottonwood	N	
	<i>Salix gooddingii</i>	Goodding's black willow	N	
Solanaceae	<i>Datura wrightii</i>	Jimson weed	N	
	<i>Lycopersicon</i> sp. <sup>3</sup>	Tomato	I	
	<i>Solanum nigrum</i>	Black nightshade	I	
	<i>Solanum</i> sp.	Nightshade	--	
Tamaricaceae	<i>Tamarix</i> sp. (likely <i>parviflora</i> or <i>ramosissima</i> )	Tamarisk, saltcedar	I	High
Ulmaceae	<i>Ulmus parvifolia</i>	Chinese elm	I	
	<i>Zelkova</i> sp. <sup>3</sup>	Zelkova	I	
Zygophyllaceae	<i>Tribulus terrestris</i>	Puncture vine, caltrop	I	
<b>MONOCOTS</b>				
Araceae	<i>Lemna</i> sp.	Duckweed	N	
Arecaceae	<i>Phoenix</i> sp. (fan palm seedlings)	Palm	I	
Asparagaceae	<i>Asparagus</i> sp.	Asparagus	I	
Cyperaceae	<i>Cyperus eragrostis</i>	Nutsedge	N	
	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Common tule	N	
Poaceae	<i>Avena fatua</i>	Wild oat	I	Moderate
	<i>Avena barbata</i>	Slender wild oat	I	Moderate
	<i>Bromus diandrus</i>	Ripgut grass	I	Moderate
	<i>Bromus hordeaceus</i>	Soft chess	I	Moderate
	<i>Crypsis</i> sp.	Prickle grass	I	
	<i>Cynodon dactylon</i>	Bermuda grass	I	Moderate
	<i>Distichlis spicata</i>	Salt grass	N	
	<i>Elymus caput-medusae</i>	Medusa head	I	High
	<i>Elymus glaucus</i>	Blue or western wild-rye	N	
	<i>Elymus triticoides</i>	Beardless wild rye	N	
	<i>Festuca perennis</i>	Rye grass	I	Moderate
	<i>Festuca myuros</i>	Rattail sixweeks grass	I	Moderate
	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	I	Moderate
	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley	I	Moderate
	<i>Muhlenbergia rigens</i> <sup>3</sup>	Deer grass	N	
	<i>Phalaris</i> sp.	Canary grass	--	
	<i>Pennisetum</i> sp.	Fountain grass	I	

	<i>Polygonum monspeliensis</i>	Annual beard grass, rabbitfoot grass	I	Limited
	<i>Setaria</i> sp.	Bristle grass	--	
	<i>Sorghum halepense</i>	Johnson grass	I	
	<i>Stipa pulchra</i>	Purple needle grass	N	
	<i>Triticum aestivum</i>	Wheat, goat grass	I	
	<i>Zea mays</i> <sup>3</sup>	Corn	I	
Typhaceae	<i>Typha domingensis</i>	Southern cattail	N	

<sup>1</sup> N = Native to CA; I = Introduced.

<sup>2</sup> Degree of negative ecological impact (Cal-IPC 2019).

<sup>3</sup> Observed only as a horticultural planting or agricultural crop.

<sup>4</sup> Specimen could not be identified to species. Specimen was not *A. cordulata* ssp. *cordulata*, *A. depressa*, or *A. joaquinana* based on plant height, inflorescence, and fruit bract characteristics. Specimen observed in a recently tilled agricultural field and most likely a nonnative agricultural weed.

## Wildlife Species Observed

COMMON NAME	SCIENTIFIC NAME
<b>BIRDS</b>	
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch	<i>Spinus tristis</i>
American kestrel	<i>Falco sparverius</i>
Anna's hummingbird	<i>Calypte anna</i>
Black phoebe	<i>Sayornis nigricans</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Burrowing owl <sup>1</sup>	<i>Athene cunicularia</i>
Cattle egret	<i>Bubulcus ibis</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Common raven	<i>Corvus corax</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
European starling	<i>Sturnus vulgaris</i>
Great horned owl	<i>Bubo virginianus</i>
House finch	<i>Carpodacus mexicanus</i>
Killdeer	<i>Charadrius vociferus</i>
Mourning dove	<i>Zenaida macroura</i>
Northern flicker	<i>Colaptes auratus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rock dove	<i>Columbia livia</i>
Swainson's Hawk <sup>2</sup>	<i>Buteo swainsoni</i>
Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Western meadowlark	<i>Sturnella neglecta</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western tanager	<i>Piranga ludoviciana</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-tailed kite	<i>Elanus leucurus</i>
Yellow-billed magpie	<i>Pica nuttalli</i>
<b>FISH</b>	
Mosquitofish	<i>Gambusia affinis</i>
<b>REPTILES</b>	
Western fence lizard	<i>Sceloporus occidentalis</i>
<b>MAMMALS</b>	
California ground squirrel	<i>Otospermophilus beecheyi</i>
Jackrabbit	<i>Lepus californicus</i>

<sup>1</sup> Observed west of the site along Mace Boulevard and County Road 104. See discussion.

<sup>2</sup> Observed soaring overhead north of the site.