HARMONY VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Initial Study/Proposed Mitigated Negative Declaration

Prepared for
County of Colusa
Community Development Department

October 2024

ESA

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HARMONY VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Proposed Mitigated Negative Declaration

Project Title: Harmony VELB Conservation Bank

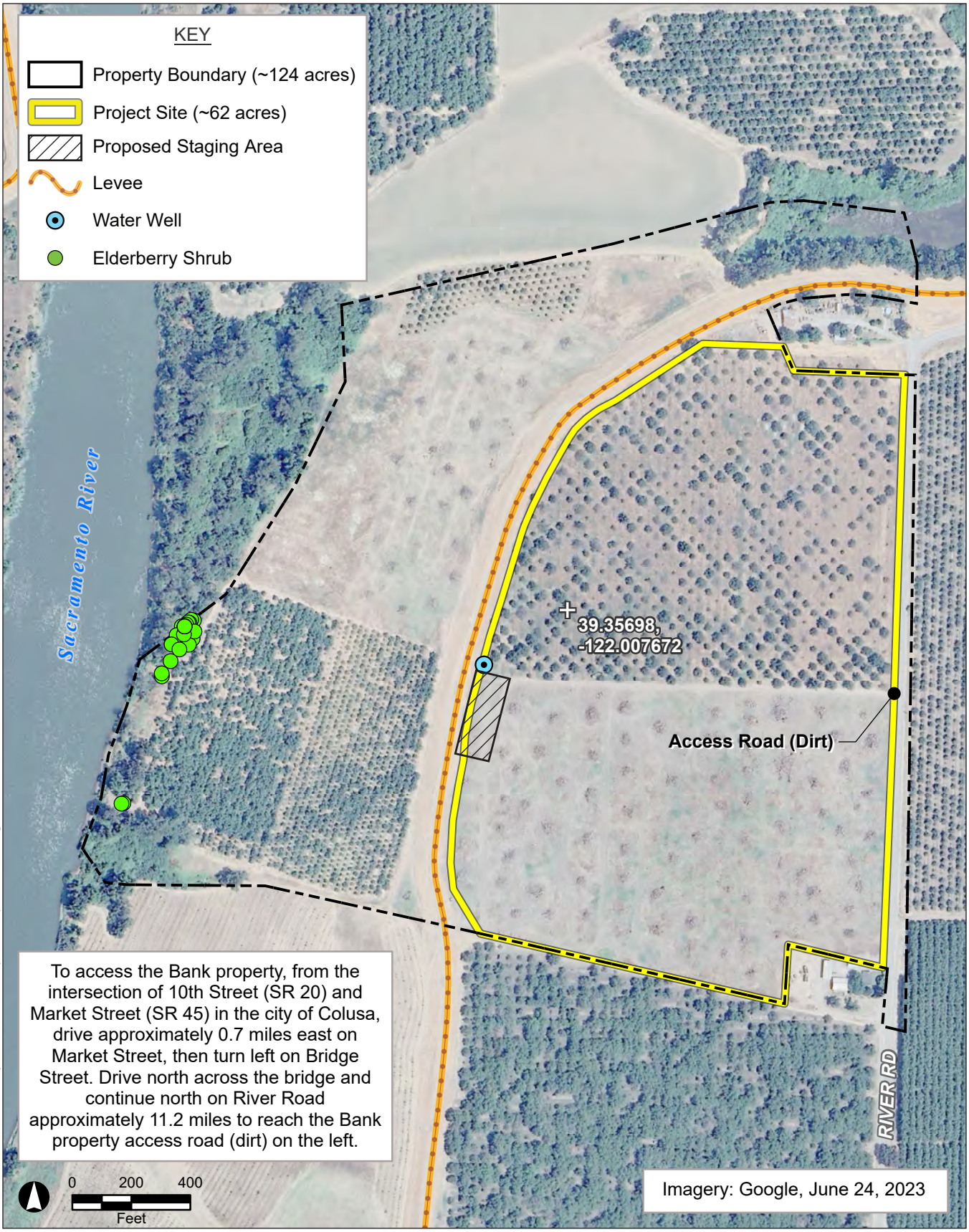
Lead Agency: County of Colusa Community Development Department

Project Location: The subject property is located just west of River Road and just east of the Sacramento River in Colusa County, approximately 9.5 miles north of the City of Colusa (Section 6 of Township 17 North, Range 1 West, Mount Diablo Base and Meridian, within the Moulton Weir U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. The approximately 62-acre project site located in the eastern half of the subject property (identified as Assessor's Parcel Number 012-170-032 and as seen in **Figure MND-1**) is a subset of a larger property (approximately 130 acres, including Assessor's Parcel Number 012-170-069) owned by Westervelt Ecological Services, LLC (WES).

Project Description: The proposed project would provide habitat for the federally listed Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*) within a 62-acre project site. The proposed project would provide approximately 1,478 compensatory mitigation credits for unavoidable impacts to VELB by developing suitable habitat that would be protected and maintained in perpetuity.

The proposed project would be designed to provide suitable habitat for VELB with a shrub-dominated riparian habitat. The proposed project would be designed to be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999); however, the design treats the site holistically and is intended to mimic a natural system.

All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur for site preparation and planting would occur by hand. During irrigation installation, there may be the need for some light trenching, up to 12 inches in depth, maximum.



SOURCE: Westervelt Ecological Services

HCB Project

Figure MND-1
Project Site

ESA

The created VELB habitat would be irrigated to help establish the plantings. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. Habitat monitoring to document the achievements of performance standards would begin immediately.

Findings: An Initial Study/proposed Mitigated Negative Declaration (IS/MND) has been prepared to assess the proposed project's potential effects on the physical environment and the significance of those effects. Based on the analysis conducted in the IS, it is determined that implementing the proposed project would clearly not have any significant adverse effects on the environment with incorporation of the best management practices (BMPs) in the project description that would be implemented with the contract specifications and after adoption and implementation of mitigation measures. This conclusion is supported by the following findings:

The proposed project would have no effects on aesthetics, air quality, biological resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire.

The proposed project would have a less-than-significant impact on agriculture and forestry resources, cultural resources and tribal cultural resources, and land use and planning with the adoption and implementation of the mitigation measures proposed in the IS.

The proposed project would not have the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

The proposed project would not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

The proposed project would not have possible environmental effects that are individually limited but cumulatively considerable and contribute to a significant cumulative impact. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The environmental effects of the proposed project would not cause substantial adverse effects on human beings, either directly or indirectly.

The proposed project incorporates BMPs in its project description that would be implemented with the contract specifications, as well as all mitigation measures listed below and described in the IS.

MITIGATION MEASURES: The following mitigation measures will be implemented as part of the project to avoid, minimize, rectify, reduce or eliminate, or compensate for potentially significant environmental impacts. Implementation of these mitigation measures would reduce the potentially significant environmental impacts of the proposed project to less-than-significant levels:

Mitigation Measure AG-1: General Plan Amendment and Zoning Amendment

Prior to project implementation, the Colusa County Board of Supervisors shall approve the proposed General Plan land use designation change from Agriculture General (AG) to Resource Conservation (RC) and Zoning Amendment change from Exclusive Agriculture (E-A) to Resource Management (R-M) for the project site.

Mitigation Measure CUL-1: Tribal Resources Sensitivity Training

Before the start of project planting activities, a Tribal Resources Sensitivity Training shall be implemented. A representative from Yocha Dehe Wintun Nation (YDWN) shall conduct the training for project personnel regarding background on indigenous use of the vicinity and protocol to follow should potential indigenous archaeological materials and/or tribal cultural resources be discovered. WES shall ensure that project personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-2: Discovery or Recognition of Archaeological Resources During Construction

If archaeological resources are encountered during proposed project construction, all construction activities within 100 feet shall immediately halt, and a qualified archaeologist, defined as an archaeologist meeting the U.S. *Secretary of the Interior's Historic Preservation Professional Qualification Standards* for Archeology, shall inspect the find within 24 hours of discovery and shall notify the County of their initial assessment. Indigenous archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls; and deposits of metal, glass, and/or ceramic refuse.

If the County determines, based on recommendations from the qualified archaeologist and California Native American Tribes, if the resource is indigenous, that the resource may qualify as an historical resource, unique archaeological resource, or tribal cultural resource (as defined by CEQA), the resource shall be avoided, if feasible. This may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If avoidance of the resource is not feasible, the County shall continue to consult with California Native American Tribes, if the resource is indigenous, and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to CEQA. This shall include preparation and implementation of a detailed treatment plan to recover the scientifically consequential information from the resource before any excavation at the resource site. The treatment

plan shall be prepared in consultation with the County, and, if the resource is indigenous, relevant California Native American Tribes. Treatment for most resources would consist of (but would not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be affected by the proposed project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals. Any technical report developed to document the implementation mitigation shall be submitted to Northwest Information Center (NWIC) upon approval by the County, unless the document contains information that California Native American Tribes involved in the development of the mitigation deem should not be filed with the Northwest Information Center, in which case, the report shall be submitted to the Native American Heritage Commission.

Mitigation Measure CUL-3: Discovery or Recognition of Human Remains During Construction

In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall immediately cease until the Colusa County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission shall be contacted within 24 hours if it is determined that the remains are Native American. The Native American Heritage Commission shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the lead agency for the appropriate means of treating the human remains and any grave goods. Per Public Resources Code Section 5097.98, the County shall ensure that the immediate vicinity of the location of the human remains is not damaged or disturbed by further development activity until the County has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Mitigation Measure CUL-4: Protection of WBC-01 and WBC-02

In order to protect archaeological resources WBC-01 and WBC-02, no plantings or any ground-disturbing activities shall occur within 50 feet of the boundaries of either site. Additionally, fencing shall be installed at the 50-foot buffer around WBC-02 to prevent driving through the sensitive area.

Mitigation Measure LU-1: Mitigation Bank Credit Reservation and Discount

A condition of approval shall be required that makes the General Plan land use designation change and Zoning Amendment approval contingent upon entering a mitigation bank credit and reservation agreement with the County of Colusa. The terms of this agreement shall include discounts for the County's purchase of mitigation credits generally consistent with the discounts provided in the Sacramento River VELB Mitigation Bank Reservation and Discount Agreement, and shall be mutually acceptable to the County and WES and shall specify the number of credits reserved for the County, the discount amount, the amount of time of the reservation, and other applicable factors detailed in said agreement.

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HARMONY VALLEY ELDERBERRY LONGHORN BEETLE (VELB) CONSERVATION BANK

Environmental Checklist - Initial Study

1. **Project Title:** Harmony VELB Conservation Bank

2. **Lead Agency Name and Address:** Colusa County Community Development Department, Planning Division 1213 Market Street, Colusa, CA 95932

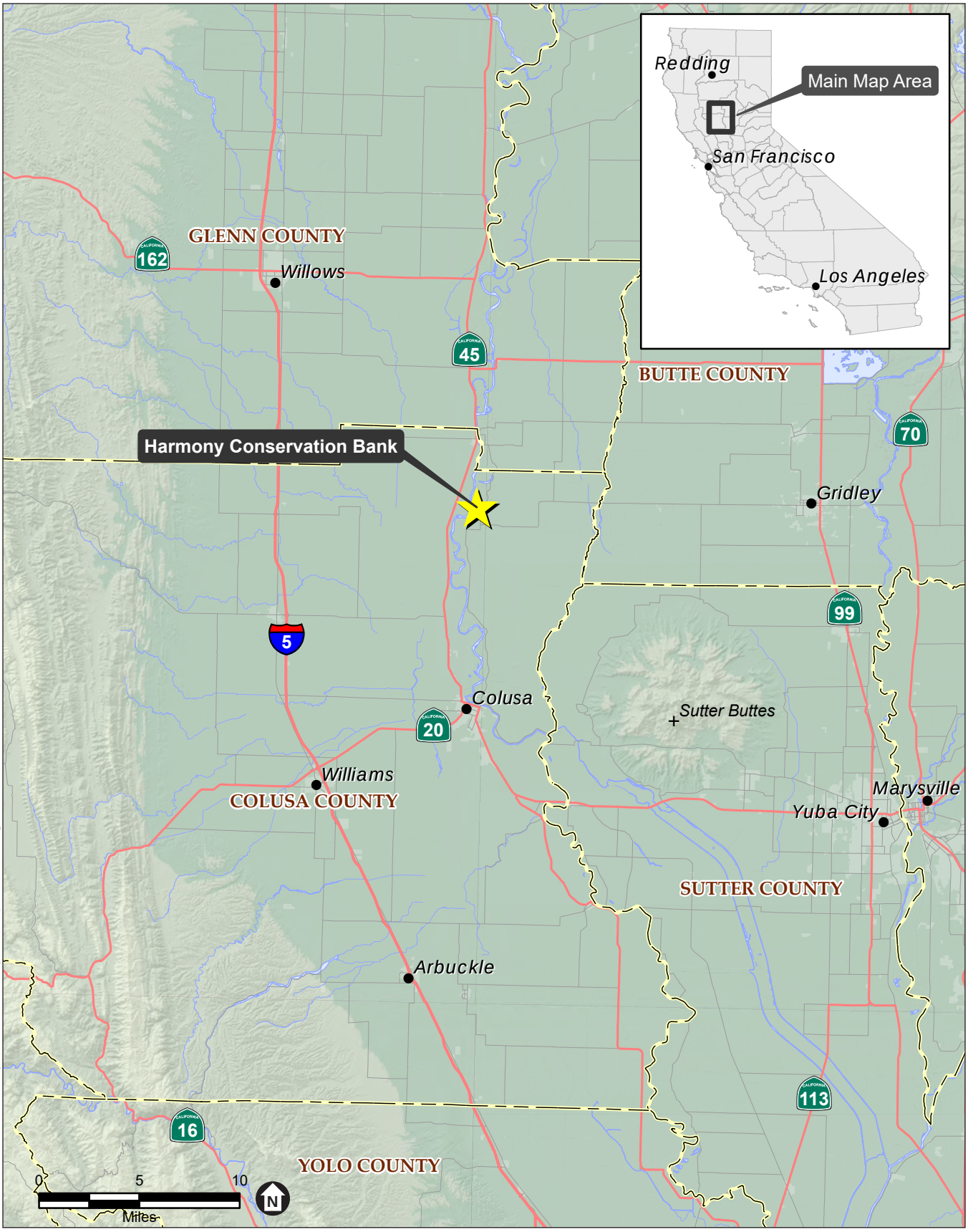
3. **Contact Person and Phone Number:** Steve Geiger Principal Planner (530) 458-0891

4. **Project Location:** The subject property is located just west of River Road and east of the Sacramento River in Colusa County, approximately 9.5 miles north of the City of Colusa (**Figures 1 and 2**) (Section 6 of Township 17 North, Range 1 West, Mount Diablo Base and Meridian, within the Moulton Weir U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 3**). The approximately 62-acre project site located in the eastern half of the subject property is a subset of a larger property (approximately 130 acres) owned by Westervelt Ecological Services, LLC (WES) and identified as Assessor's Parcel Numbers (APN) 012-170-032 and 012-170-069.

5. **Project Sponsor's Name and Address:** Westervelt Ecological Services, LLC 3636 American River Drive, Suite 120 Sacramento, CA 95864

6. **General Plan Designation(s):** Agricultural General (AG) and Designated Floodway (DF)

7. **Zoning:** Exclusive Agriculture (E-A) and River Frontage (R-F)



SOURCE: Westervelt Ecological Services

HCB Project

Figure 1
Regional Vicinity

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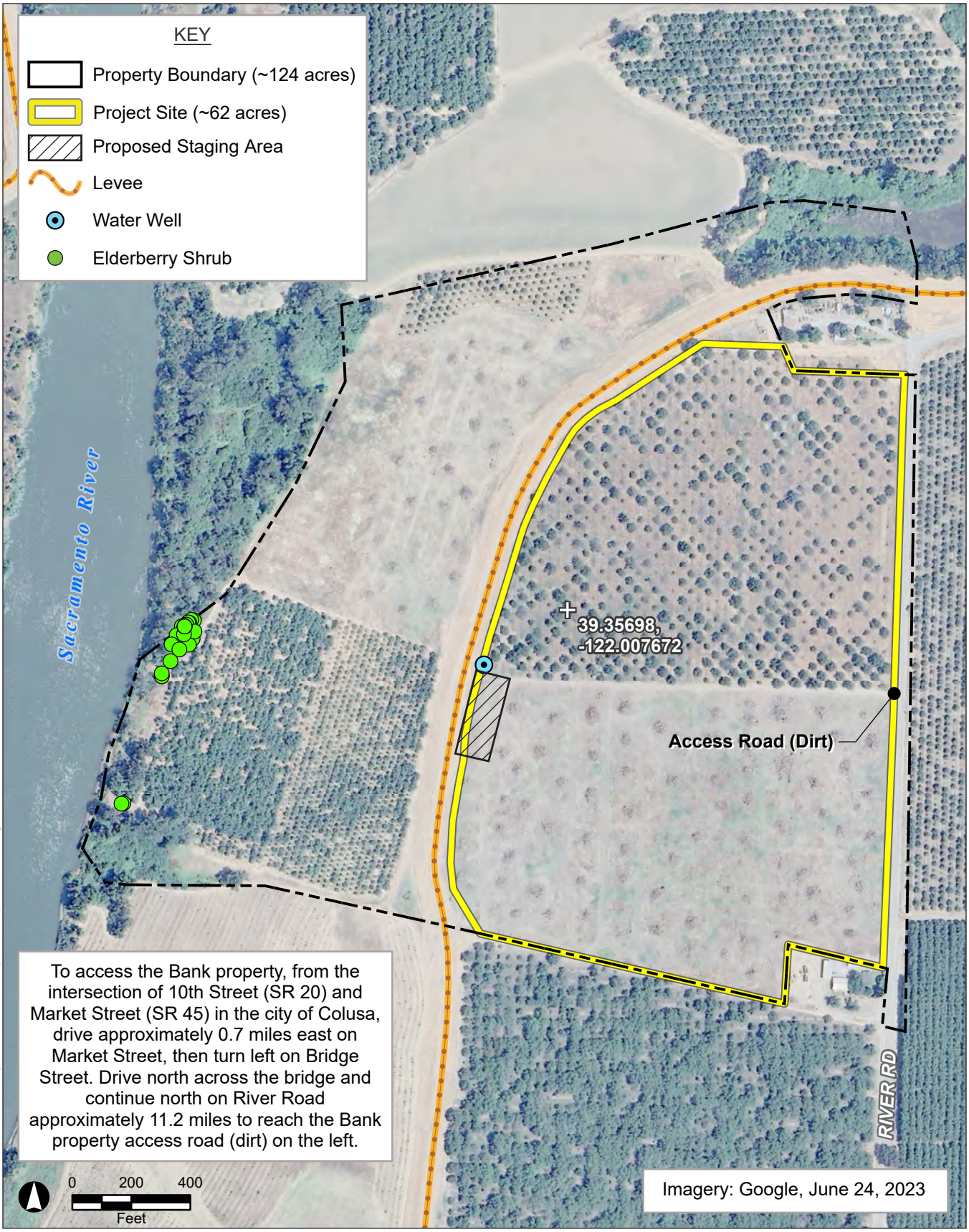
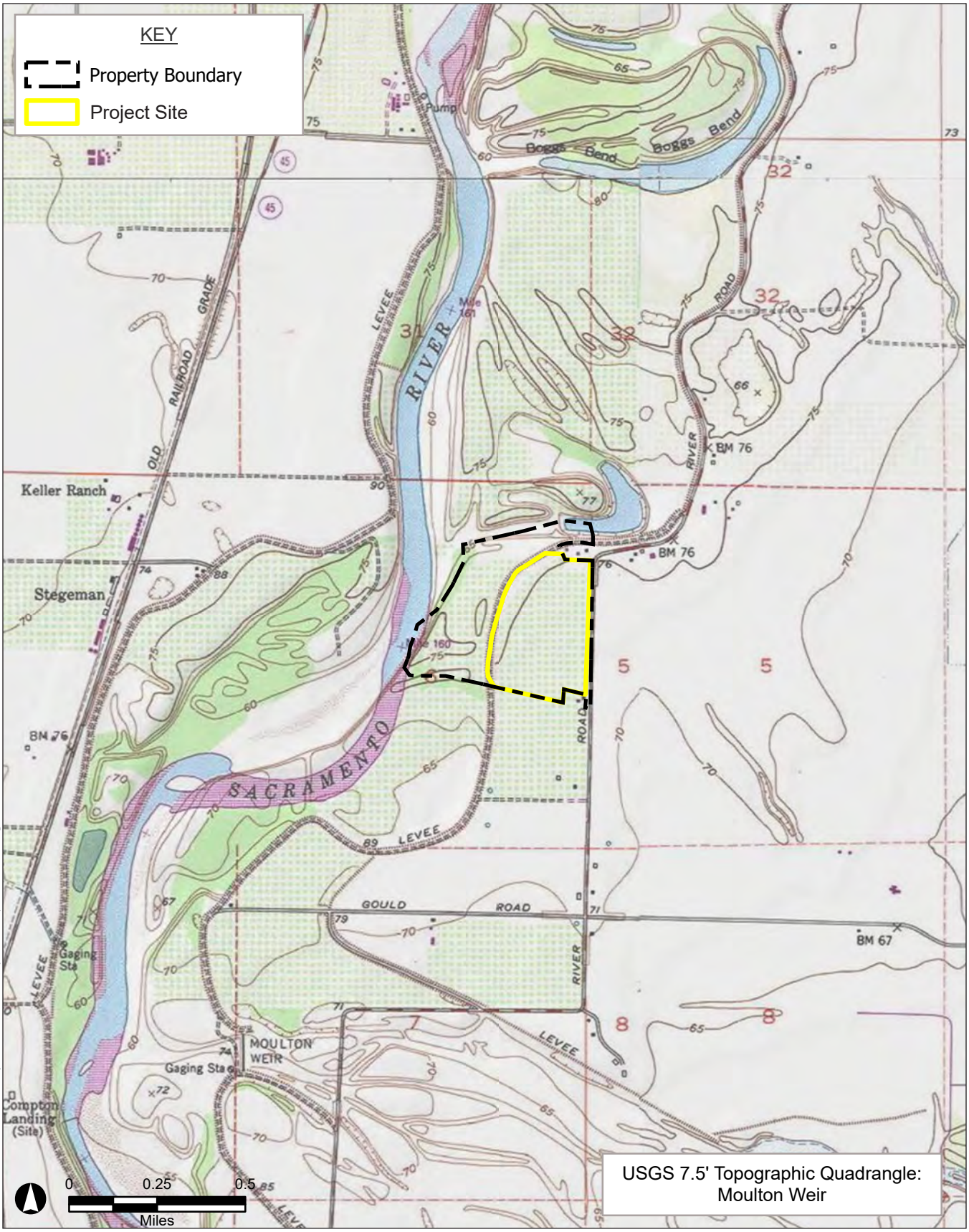


SOURCE: Westervelt Ecological Services

HCB Project

Figure 2
Project Site

ESA



SOURCE: Westervelt Ecological Services

HCB Project

Figure 3
USGS Topography

ESA

8. Description of Project

Purpose and Objectives

The Harmony VELB Conservation Bank Project (proposed project) would provide habitat for the federally listed Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*).

Specifically, the purpose of the proposed project is to provide compensatory mitigation credits for unavoidable impacts to VELB by developing suitable habitat that would be protected and maintained in perpetuity. The proposed project would maximize benefits and recovery efforts for VELB in a manner consistent with the *Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle* (USFWS 2018). The proposed project would be considered "private commercial" by the Recovery Plan and would serve a variety of public and private clients with projects that would impact VELB and its habitat. Credits would offset impacts regulated by the U.S. Fish and Wildlife Service (USFWS).

The proposed project objectives are to:

- Develop sustainable VELB habitat that maximizes habitat benefits and recovery efforts for VELB in a manner consistent with the *Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle* (USFWS 2018).
- Ensure that the VELB habitat is maintained and monitored in perpetuity so that it would continue to support habitat for VELB.
- Provide approximately 1,478 species credits, based on the project's 62-acre size.

Proposed Project

The proposed project would restore the 62-acre project site to provide suitable habitat for VELB. The proposed project would be designed to provide suitable habitat for VELB with a shrub-dominated riparian habitat. The proposed project would be designed to be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999); however, the design treats the site holistically and is intended to mimic a natural system.

Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. Plants that may be used include but are not limited to: box elder (*Acer negundo* ssp. *californica*), black walnut (*Juglans hindsii*), Fremont's cottonwood (*Populus fremontii*), Valley oak (*Quercus lobata*), California wild grape (*Vitis californica*), arroyo willow (*Salix lasiolepis*) and Coyote bush (*Baccharis pilularis*).

The number of elderberry plantings and associated trees and shrubs to be planted are summarized in **Table 1**. New elderberry plantings would be strategically placed to take advantage of the transplants as a potential beetle source, while making maximum use of the project site and utilizing a "natural" design.

TABLE 1
MINIMUM NUMBER OF ELDERBERRY PLANTINGS AND ASSOCIATED NATIVE TREES AND SHRUBS TO BE PLANTED

Planting Area					
(Acres)	(Square feet)	VELB Credits	Minimum Number of Elderberry Plantings	Minimum Number of Associate Trees and Shrub Plantings	Minimum Number of Plantings (acres)
61.08	2,660,644.8	1478.14	7,391	7,391	57.32

Source: WES 2024

Plantings would avoid the boundaries of two known archaeological resources (WBC-01 and WBC-02, discussed in **Section V [Cultural Resources**]) within the project site with minimum 50-foot buffers, and fencing would be installed around WBC-02 to prevent disturbance to the area.

Construction Activities

Site Preparation and Best Management Practices

All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur for site preparation and planting would occur by hand. During irrigation installation, there may be the need for some light trenching, up to 12 inches in depth maximum.

WES staff would come from Sacramento (approximately 80 miles from the project site) while the farmer and his staff are located in Colusa County. Up to 20 workers at a time may install the plants.

A WES staff member, or other qualified biologist, would observe and manage the initial planting for the proposed project on a weekly basis. They would direct planting to ensure the planting proceeds as approved by the USFWS. Planting activities would be managed to ensure that the habitats are installed as designed and to avoid impacting sensitive habitat.

The following best management practices (BMPs) would be implemented prior to and during construction to protect existing elderberry shrubs and other resources:

- The driplines of all existing elderberry shrubs would be clearly marked in the field for avoidance by a qualified biologist. The location of existing elderberry shrubs would be shown on all site plans for avoidance. No excavation or fill would occur within the driplines of existing elderberries.
- Erosion control BMPs would be implemented.
- If needed to minimize disturbance to existing vegetation, vehicle movement corridors and haul routes would be marked on the planting scheme to minimize vehicular movement across the property.

- All staging activities would occur within a designated staging area (shown in Figure 2) that is currently used to stage farm equipment. This designated staging area would be located no closer than 300 feet from any existing threatened or endangered species habitat (e.g., VELB habitat) and would be marked in the field and on the planting schemes.
- All refueling and equipment maintenance activities would occur within the designated staging area located on the western side of the project site within the subject property (shown in Figure 2). Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations.
- Construction activities would be stopped if any corrective actions are required and would be allowed to resume only after corrective actions have been implemented and alleviated the potential for detrimental activities.
- Any debris would be removed after planting is completed.

Planting and Seeding

Elderberry seedlings and associated native tree and shrub species would be obtained from local nurseries that specialize in restoration and implement BMPs to eliminate potential for pests. Source materials would be from the general Central Valley. Transplants would be allowed from throughout the VELB range. **Table 2** provides the species percent composition proposed to be installed. The plant composition was determined by reviewing plants that are already present on the property and in the vicinity, as well as a review of the soil types present.

TABLE 2
ELDERBERRY AND ASSOCIATED NATIVE PLANTINGS

Scientific Name	Common Name	Percent (%) of Plant Total
Trees		
Quercus lobata	Valley oak	15.4%
Quercus wislizeni	Live Oak	1%
Populus fremontii	Fremont's cottonwood	0.5%
Acer negundo ssp. *californicum*	Box elder	0.7%
Juglans hindsii	Black walnut	3.1%
Cercis occidentalis	Redbud	0.1%
Fraxinus latifolia	Oregon ash	1.2%
Shrubs		
Baccharis pilularis	Coyote brush	11.6%
Rhamnus californica	Coffeeberry	2.1%
Cephalanthus occidentalis	Buttonwillow	0.3%
Baccharis salicifolia	Mulefat	1%
Understory		
Rosa californica	California wild rose	12%
Vitis californica	California wild grape	1%
	Total Associates	**50%**
Sambucus nigra ssp. *caerulea*	Elderberry	50%
	Total	**100%**

SOURCE: WES 2024

Irrigation

The created VELB habitat would be irrigated to help establish the plantings. The main irrigation system that is currently in place on the property would be used to irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site (see **Figure 2**). The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as walnut orchard.

Elderberry Transplants

The proposed project has been designed to include a space for transplanted elderberry plants. Transplants would be allowed from throughout the VELB range[1]. If the USFWS identifies transplantation of an affected elderberry shrub from a future location as an appropriate conservation measure, those shrubs may be transplanted to the project site. Transplantation would employ horticultural best practices and would be conducted during the onset of elderberry dormancy or later, but prior to the bud break in the late winter. Prior to installation, transplantation locations within the project site would require some vegetation mowing as well as excavation to accept the root ball of the transplanted shrub. Transplants would receive deep watering following transplantation. Transplants would be accepted and planted at the project site up until the time the final credit sale occurs.

Phasing and Schedule

Planting activities would occur as early as fall/winter 2024, upon receipt of regulatory and permit approvals. Planting activities may occur as frequently as seven days a week until completion (14 days total), generally during daylight hours, to the best extent possible; however, some activities, such as preparation, staging activities, and maintenance to equipment, may occur outside of daylight hours.

Operations and Maintenance

Habitat monitoring to document the achievements of performance standards would begin immediately. Post-restoration project components would be limited to the following monitoring and land management activities to maintain restored habitat conditions.

[1] The VELB range of occupancy is based on the VELB range map provided by the USFWS. The northern boundary of the Service Area is located near Redding. The western border of the Service Area runs west of Interstate 5, past Red Bluff, Orland, Williams, Maxwell, and Vacaville before shifting east between Fairfield and Vacaville. It then continues just west of Interstate 580 until near Mendota. The southern border is located just north of Mendota and continues east past Madera. The Service Area then turns north and follows the 500-foot elevation just east of Madera, Merced, Modesto, Sacramento, Yuba City, and Chico before following just east of Interstate 5 back to Redding. The Service Are includes all or a portion of the following counties: Shasta Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Yolo, Solano, Placer, Sacramento, Amador, Contra Costa San Joaquin Calaveras, Tuolumne, Stanislaus, Mariposa, Merced, and Madera. The range of the species is contained within these areas up to an elevation of approximately 500 feet.

Habitat Establishment (Project Outcome) Monitoring

The project site would be monitored on a regular basis during the habitat establishment period to ensure that the proposed project is performing as designed and anticipated (one person, three days a year). Activities during the habitat establishment period may include corrective measures, if necessary, to address potential problems identified during ongoing monitoring of the project site.

Long-term Operations and Management Monitoring

The project site would continue to be monitored and managed on a regular basis in perpetuity to ensure the proposed project's desired ecological benefits and trajectory are maintained into the future. The need for corrective actions after the project site has stabilized is anticipated to be minor.

A mower is the only anticipated equipment needed for operations. WES staff would perform all maintenance activities, most of which is related to mowing and irrigation. The amount of maintenance would decrease over time and would be less compared to historic farming needs on the project site.

Sheep grazing would be included on the project site and overall property during long term operations as part of vegetation management. Although it may vary by year, grazing would generally occur in the spring to early summer when the grasses and forbs are highly palatable. The number of sheep on the project site would range from 120 to 600 head, with the potential for additional grazing densities on the overall property. Duration would vary from one week to several weeks depending on the number of sheep. Fencing would be installed around the project site, which would keep the sheep in the project site.

Adaptive Management Monitoring

The project site would be monitored and managed adaptively over time to determine if the site is functioning as intended. This includes whether physical attributes should be changed to enhance ecosystem function, if there any potential problems developing that may require corrective measures, and if monitoring or maintenance/management protocols need to be modified to ensure they are accomplishing their intended purposes.

9. Surrounding Land Uses and Setting:

The property has historically been maintained as a walnut orchard. In late 2022/early 2023 walnut trees were removed by the former landowner in the southern portion of the project site. The remaining walnut trees in the northern portion of the project site were removed in late 2023. Past walnut tree removal activity is not part of the proposed project. Most of the property is mapped as "Prime Farmland" and "Unique Farmland" by the California Department of Conservation's Farmland Mapping and Monitoring Program. The property is not currently enrolled in the Williamson Act.

A levee extends along the western side of the property. The adjacent parcel to the west along the Sacramento River will be restored in the future for riparian and salmonid habitat under a separate project.

The land to the north, south and east of the property is agriculture crops, mostly walnut orchard, and includes rural residential uses. The Sacramento River flows along the western border approximately 0.25 mile west of the property. The property is in proximity to the Willow Bend Preserve (located immediately to the southeast of the property) and near various other conservation areas representing various high-priority conservation along the Sacramento River.

The project site is located within two watersheds, the Sacramento River watershed (HUC10 1802010412) and Lower Butte Creek watershed (HUC10 1802015). Riparian woodland habitat is mapped on the property adjacent to the Sacramento River and in the northeast corner of the property; no riparian habitat occurs in the project site. The project site currently consists of fallow fields. Other vegetation communities within the overall property include cropland, orchard, freshwater emergent wetland, riparian scrub, riparian woodland, developed, disturbed and ruderal (**Appendix A** Figure 9).

The topography of the project site is relatively flat with elevations ranging from 69 to 80 feet above mean sea level. The western half of the project site, along the levee, is slightly higher than the eastern half with the lowest point occurring in the southeast corner. The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey maps the project site as containing Moonbend silt loam, 0 to 2 percent slopes, occasionally flooded. (WES 2024)

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

Prior to project implementation, the following discretionary permits and approvals would be required:

- County of Colusa General Plan and Zoning Amendment
- Central Valley Flood Protection Board Encroachment Permit

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

In December 2023, Environmental Science Associates (ESA) sent letters and email to Tribal representatives of: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community,

Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Grindstone Rancheria of Wintun-Wailaki, Kletsel Dehe Band of Wintun Indians, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation (YDWN). These letters and emails provided details, including a map, of the proposed project and requesting that the Tribe provide any concerns they may have regarding potential impacts from the proposed project on cultural resources and tribal cultural resources. The email correspondence also invited the Tribes to participate in a site visit to the project site to discuss the proposed project and any concerns the Tribes may have. YDWN replied to ESA the same month via email and letter, requesting engagement on the proposed project and additional information on its associated cultural resources studies. On January 19, 2024, representatives from WES and ESA conducted a site visit at the project site with Tribal representatives from YDWN; see **Section V (Cultural Resources)** for additional detail.

In addition to this early consultation with the Tribal representatives discussed above, Colusa County processed the required Assembly Bill (AB) 52 notification using the contact list maintained by the Native American Heritage Commission. In addition, this notification also included those tribes that had previously requested to be notified. The YDWN initially requested consultation with the County. Staff provided YDWN with information from the Initial Study prepared by the applicant, citing required mitigation measures for tribal cultural resources including Tribal Resources Sensitivity Training. After reviewing this information, YDWN commented that no formal consultation was necessary, but they wanted to be kept informed of any significant updates or information.

References

U.S. Fish and Wildlife Service. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Sacramento Fish and Wildlife Office, Sacramento CA. Dated July 9, 1999.

———. 2018. Draft Revised Recovery Plan for Valley Elderberry Longhorn Beetle. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. iii + 18 pp.

Westervelt Ecological Services (WES). 2024. Project Description. Harmony VELB Conservation Bank.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☒ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
I.	**AESTHETICS —** Except as provided in Public Resources Code Section 21099, would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Discussion

a-d) The project site does not lie within a designated scenic vista or in proximity to a state scenic highway (Caltrans 2019), and the proposed project would not have any adverse impact upon a scenic vista or scenic resource. The land to the north, south and east of the property includes agricultural land and rural residential uses and the Sacramento River is located to the west of the property. The design of the proposed project is intended to mimic a natural system and would provide habitat for VELB with a shrub-dominated riparian habitat. Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. The proposed project does not include industrial, residential, commercial, highways, or any other type of urban land use that would drastically change the character of the surrounding area. No structures are proposed. Planting activities would occur until completion over approximately 14 days, generally during daylight hours, to the best extent possible; however, some activities, such as preparation, staging activities, and maintenance to equipment, may occur outside of daylight hours. While some lighting may be needed outside of daylight hours for planting activities, these activities would be limited in scale and of short duration and would not be a new source of substantial light or glare. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista or scenic resource, degrade the visual character of the area or create a new source of light or glare. The project would have **no impact** on aesthetics.

References

California Department of Transportation (Caltrans). List of Eligible and Officially Designated State Scenic Highways. Available: https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx. Accessed May 21, 2024.

Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
II. AGRICULTURE AND FORESTRY RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒	☐	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) The California Division of Land Resource Protection identifies important agricultural lands through the Farmland Mapping and Monitoring Program. Colusa County has approximately 558,000 acres identified as Important Farmlands (including Prime Farmland, Farmlands of Statewide Importance, Unique Farmland, and Farmland of Local Importance), or 75 percent of the total land within the County (CDC 2020). The project site is mapped as "Prime Farmland" by the California Department of Conservation's Farmland Mapping and Monitoring Program, with portions of the overall property also mapped as "Unique Farmland" and "Other Land" (CDC 2022). The 62-acre project site represents approximately 0.01 percent of the approximately 558,000 acres identified as Important Farmlands in Colusa County. The property is not currently enrolled in the Williamson Act.

Colusa County's Zoning Ordinance Section 44-0.10 defines "agriculture" as "The use of land for the raising of crops, trees, or animals, including farming, dairying, pasturage, agriculture, horticulture, floriculture, viticulture, apiaries, and animal and poultry husbandry…".

Historically, the property has been maintained as a walnut orchard; however, the walnut trees were removed from the project site in late 2022 through early 2023 and that past activity is not part of the proposed project. The proposed project design is intended to mimic a natural system and would provide habitat for VELB with a shrub-dominated riparian habitat. Associate plantings would consist of native species that are appropriate to the geographic location and site conditions. The proposed project does not include industrial, residential, commercial, highways, or any other type of urban land use that would drastically change the character of the surrounding project area. Furthermore, the proposed project does not include paving of the soil or building construction that would render soil on the site unsuitable for agriculture.

The property and project site would continue to be used in part for agricultural purposes through sheep grazing that would be included on the project site during long term operations as part of vegetation management. While it may vary, grazing would typically occur during spring or early summer when the grasses and forbs are highly palatable for sheep. The number of sheep on the project site would range from 120 to 600 head, with the potential for additional grazing densities on the overall property. Based on the number of sheep used, duration of grazing would vary between one week to several weeks. Fencing would be installed around the project site, which would keep the sheep in the project site. Therefore, the proposed project would not convert Prime Farmland to non-agricultural use and this impact would be **less than significant**.

b) The project site is zoned Exclusive Agriculture (E-A). As described in Colusa County Zoning Code Section 44-2.20.10, the purpose of the E-A zone is to protect agricultural uses and agricultural operations in areas where fertile soils particularly suited to crop production are present, areas where agriculture is the natural and desirable primary land use, and where the protection of agriculture from the encroachment of incompatible land uses is essential to the general welfare and economic prosperity of the County. Appropriate uses in the E-A zone include agricultural processing, animal grazing, crop production and cultivation, nurseries and greenhouses, stables and wineries. Habitat mitigation and management is not a permitted use within the E-A zone. Rezoning the project site from its current E-A zoning to Resource Management (R-M) is required by Colusa County prior to project implementation, as described in **Mitigation Measure AG-1** below.

The following adopted policies apply to lands proposed for changes in designation from an agricultural designation:

> **Policy AG 1-14**: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless all of the following conditions are met:
>
> a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.

b. The resource conservation activities are compatible with agricultural activities on the site and existing and potential activities in the vicinity.

c. There would not be a concentration of resource conservation lands in the immediate area.

Consistent with Policy AG 1-14, a General Plan Amendment to Resource Conservation is proposed for the project (see **Mitigation Measure AG-1** below). Resource conservation lands in the area include the Willow Bend Preserve (located immediately to the southeast of the property), as well the Sacramento River National Wildlife Refuge approximately 3.5 miles to the north, Delevan National Wildlife Refuge approximately 4 miles southwest of the property, the Sacramento National Wildlife Refuge approximately 7 miles to the northwest, and the Upper Butte Basin Wildlife Area and Gray Lodge Wildlife Area approximately 7 miles to the east (see Figure 4 in **Appendix A**).

> **Policy AG 2-14**: Preserve water resources for agriculture, both in quality, from competition with development, non-agricultural uses, mitigation banks, and/or interests from outside the County.

The proposed project would provide suitable habitat for VELB with a shrub-dominated riparian habitat. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard. Therefore, the conversion to a less water intensive use is consistent with the preservation of water resources for agricultural uses and is consistent with Policy AG 2-14.

The proposed project would not conflict with a Williamson Act contract as the property is not currently enrolled in the Williamson Act.

To avoid zoning conflicts noted above, rezoning the project site from its current E-A zoning to Resource Management (R-M) through implementation of **Mitigation Measure AG-1** is required by Colusa County prior to project implementation (see below); therefore, this impact would be **less than significant with mitigation incorporated**. No change to the River Frontage (R-F) zoning associated with the western portion of the property is proposed.

c, d) "Forest Land" is defined in California Public Resource Code Section 12220(g) as "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." "Timberland" is defined in California Public Resource Code Section 4526 as "land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other

forests products, including Christmas Trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others." The project site and property do not contain forest land or coniferous forest. The project site is zoned E-A and is not zoned as forest land as defined in Public Resource Code Section 12220(g), timberland as defined in Public Resource Code Section 4526, or a Timberland Production Zone (TPZ) as defined in Government Code Section 51104(g). The proposed project would not conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production or result in the loss of forest land or conversion of forest land to non-forest use. Therefore, **no impact** would occur.

e) The proposed project would not involve other changes in the environment (other than the General Plan amendment and the change in zoning discussed in question (b) above) that could result in the conversion of farmland or forestland to non-agricultural or non-forestland uses, as described in questions (a) and (b). The proposed project entails planting native habitat. The habitat that would be planted would be the same plant composition that already occurs in the riparian habitat along the Sacramento River. All of the species that may use the project site are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife or other species are anticipated to be attracted to that habitat that are not already present in the vicinity. The land would remain physically viable for agricultural uses and would not involve the creation of impervious surfaces or other uses that would compromise the soil of the project site. In addition, since the project entails planting native habitat similar to plant compositions that already occur and survive in the area, existing agricultural practices (e.g., agricultural spraying, etc.) from adjacent farming would not have an impact on this project. **No impact** would occur.

Mitigation Measures

Mitigation Measure AG-1: General Plan Amendment and Zoning Amendment

Prior to project implementation, the Colusa County Board of Supervisors shall approve the proposed General Plan land use designation change from Agriculture General (AG) to Resource Conservation (RC) and Zoning Amendment change from Exclusive Agriculture (E-A) to Resource Management (R-M) for the project site.

References

California Department of Conservation (CDC). 2020. Alternate Colusa County 2018-2020 Land Use Conversion Table A-5. Available: https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2018-2020/Alternate_Conversion_tables/Alternate_Colusa_County_2018-2020_Land_Use_Conversion.pdf. Accessed May 21, 2024.

———. 2022. California Important Farmland Finder, 2022. Available: https://www.conservation.ca.gov/dlrp/fmmp. Accessed May 21, 2024.

Colusa County. 2023. Colusa County Zoning Code. Current through Ordinance 833 passed November 7, 2023. Available: https://www.codepublishing.com/CA/ColusaCounty/#!/ColusaCounty44.html. Accessed May 21, 2024.

Air Quality

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
III.	**AIR QUALITY —** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

Discussion

a, b) The project area is in the Northern Sacramento Valley Air Basin, which is under the jurisdiction of the Colusa County Air Pollution Control District. Regulation of ambient air quality comes from the U.S. Environmental Protection Agency (EPA) for federal standards, and the California Air Resources Board (CARB) for state standards. CARB lists Colusa County as attainment of State Air Quality Attainment Standards for ozone, particulate matter below 2.5 microns in diameter ($PM_{2.5}$), nitrogen dioxide, sulfur dioxide, lead, sulfates and visibility reducing particles. The County is unclassified (i.e., no data collected) for carbon monoxide, hydrogen sulfide, and ozone 8-hour, and is currently listed as non-attainment for PM_{10} (particles less than 10 microns in diameter) emissions. Colusa County is listed as unclassified/attainment for the Federal Air Quality Attainment Standards for $PM_{2.5}$, PM_{10}, ozone 8-hour, carbon monoxide, nitrogen dioxide, sulfur dioxide and lead. (CARB 2022)

The most significant existing sources of air pollutants within the local area are temporary releases from agricultural plowing, grading, and burning. Occasionally, wildfires in the region or crop residue burning may release large volumes of particulate matter into the atmosphere. As the proposed project would convert a site historically used as walnut orchard into a conservation bank under more natural conditions, the primary air quality impacts would be related to the construction phase of the proposed project.

All site preparation for the proposed project would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. Minimal mechanical equipment that would generate pollutant emissions would be required for construction and operation of the proposed project and equipment needs would likely be less than when the project site was managed as a walnut orchard.

The construction phase would entail earth-moving activities that could generate limited dust. However, any impacts on air quality from project construction would be of limited scale and short-term over the 14 days of planting. Given the nature of the proposed project, it would not violate any air quality standards or contribute substantially to an existing or projected air quality violation; therefore, this impact would be **less than significant**.

c, d) Two residences are located immediately north and south/east of the property off River Road. Construction and implementation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people. There would be **no impact**.

References

California Air Resources Board (CARB). 2022. Maps of State and Federal Area Designations. Cal.Gov. Available: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed May 28, 2024.

Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IV.	**BIOLOGICAL RESOURCES —** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a) A Biological Resources Study was prepared to describe the natural resource characteristics of the project area (Flourish 2023; **Appendix A**). Biologists from Flourish consulting firm conducted biological resource assessments on the 130-acre property on September 7 and October 25, 2023. Surveys included a general assessment of biological and aquatic resources present; assessments did not include protocol surveys for specific species, or a formal jurisdictional aquatic resources delineation.

The project site currently consists of fallow fields. Other vegetation communities within the overall property include cropland, orchard, freshwater emergent wetland, riparian scrub, riparian woodland, developed, disturbed and ruderal (**Appendix A** Figure 9). Riparian woodland habitat is mapped on the property adjacent to the Sacramento River and in the northeast corner of the property; no riparian habitat occurs in the project site.

The biological surveys consisted of inventorying observed plants and animals and evaluating vegetation and special-status species habitat. Vegetation and habitat were characterized in the field and mapped using existing aerial photography. Lists of plants

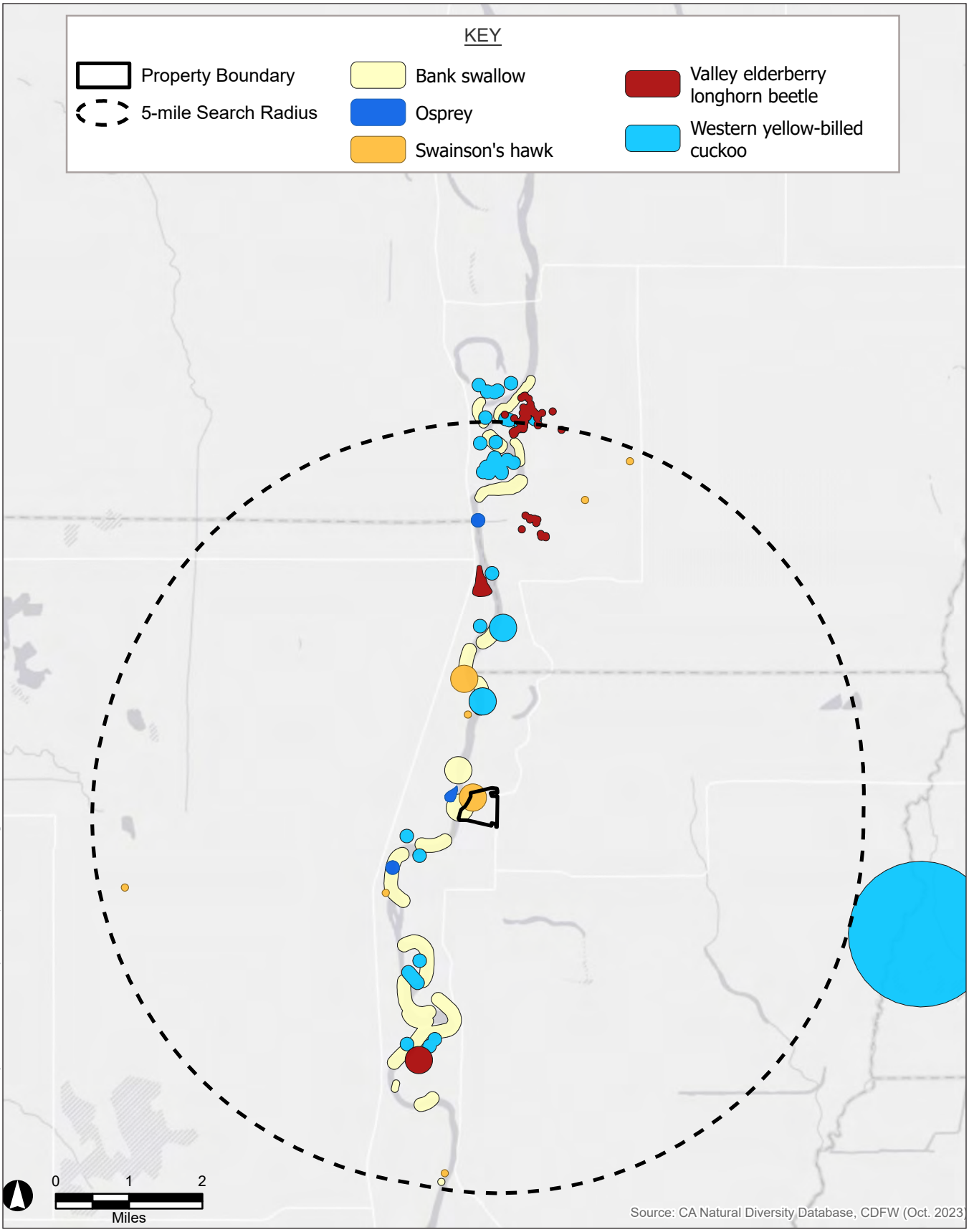
and wildlife species observed during reconnaissance surveys are provided in **Appendix A** (see report Appendices B and C, respectively).

The following sources informed development of the biological resources study: a records search of California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB) using a 5-mile radius (**Figure 4**) centered on the property; a records search of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants Database of Moulton Weir USGS 7.5-minute topographic quadrangle and surrounding eight quadrangles; an Information for Planning and Consulting species list generated by the USFWS and Environmental Conservation Online System using the property boundary; soils information from the USDA and NRCS Web Soil Survey; EcoAtlas; California Wildlife Habitat Relationships; Sacramento River Conservation Area Forum Handbook; and property description provided by WES (Flourish 2023; **Appendix A**).

A list of special-status plants with potential to occur in the property is provided in **Appendix A** Table 1. Based on a habitat suitability analysis of all the species listed in **Appendix A** Table 1 and best professional judgement, two plants with California Rare Plant Rank status have potential to occur in the property outside of the project site: Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) and woolly rose mallow (*Hibiscus lasiocarpos* var. *occidentalis*). No special-status plants or their habitat occur within the project site. (Flourish 2023; **Appendix A**)

A list of special-status animals with potential to occur in the subject property is provided in **Appendix A** Table 2. Listed species known to occur and with potential to occur in the project area include: valley elderberry longhorn beetle, western pond turtle (*Emys* [*Actinemys*] *marmorata*), Southern Distinct Population Segment green sturgeon (*Acipenser medirostris*), Central Valley steelhead (*Oncorhynchus mykiss irideus*), Chinook salmon (*Oncorhynchus tshawytscha*) –Central Valley fall-run and spring-run populations and Sacramento River winter-run populations, Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), Greater sandhill crane (Antigone [*Grus*] *canadensis tabida*, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), bank swallow (*Riparia riparia*), tricolored blackbird (*Agelaius tricolor*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), osprey (*Pandion haliaetus*), Modesto song sparrow (*Melospiza melodia*) – "Modesto" population), North American porcupine (*Erethizon dorsatum*), Northern California ringtail (*Bassariscus astutus raptor*), and western red bat (*Lasiurus blossevillii*). No special-status animals were observed within the project site.

The fallow fields in the project site provide foraging habitat for special-status birds. Additionally, the presence of mature riparian forests and elderberry shrubs and oxbow lake feature on the property (outside of the project site) provide habitat for valley elderberry longhorn beetle, western pond turtle, and the special-status birds and mammals noted above.



SOURCE: Westervelt Ecological Services

HCB Project

Figure 4
Select CNDDB Species Occurrences

ESA

In addition to special-status bird species that may be present, other migratory birds and raptors protected by the Migratory Bird Treaty Act and California Fish and Game Code may also nest onsite, as the overall property contains a variety of nesting habitat.

All site preparation and planting would be conducted in the fall/winter (outside of the nesting bird season) using traditional agricultural methods and equipment by WES staff and the onsite farmer. No tree removal is proposed, and minimal disking would occur to prepare the site and planting would occur by hand. During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum. Planting activities would be managed to ensure that the habitats are installed as designed and to avoid impacting sensitive habitat. Further, BMPs are included in the **Description of Project (Section 8)** to protect existing elderberry shrubs (which may host VELB).

As stated in **Section I (Agriculture and Forestry Resources)**, question (e), the habitat that would be planted as part of the proposed project would be the same plant composition that already occurs in the riparian habitat along the Sacramento River. Wildlife and other species that may use the property are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife or other species are anticipated to be attracted to that habitat that are not already present in the vicinity.

b, c) Based on the biological resources study conducted by Flourish (2023), the project site does not contain riparian habitat. There is riparian habitat within the property boundary (see Figure 9 in **Appendix A**). Riparian woodland within the property occurs in a narrow band along the terrace adjacent to the Sacramento River and along an oxbow lake in the northeast corner of the property, outside of the project site. The closest riparian habitat to the project site is approximately 200 feet north and adjacent to River Road, on the other side of a levee. The proposed project would not disturb riparian habitat and therefore would not have a substantial adverse effect on any riparian habitat, State or federally protected wetlands or other sensitive natural communities. **No impact** would occur.

d) The existing riparian and riverine habitats in the project area are highly valuable for wildlife and represent an important movement corridor. The proposed project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. In addition to VELB, the restoration and enhancement activities proposed for the project site would also increase the possibility of usage by other terrestrial species, including special-status species known to occur in the vicinity of project site (this is considered a beneficial effect). **No impact** would occur.

e) The proposed project does not include tree removal and with the inclusion of the BMPs identified in the **Description of Project (Section 8)**, would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **No impact** would occur.

f) There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other similar plans applicable to the project site. There are several areas managed for habitat and wildlife conservation in the vicinity of the property (see Figure 4 in **Appendix A**), including the Willow Bend Preserve (located immediately to the southeast of the property), as well the Sacramento River National Wildlife Refuge approximately 3.5 miles to the north, Delevan National Wildlife Refuge approximately 4 miles southwest of the property, the Sacramento National Wildlife Refuge approximately 7 miles to the northwest, and the Upper Butte Basin Wildlife Area and Gray Lodge Wildlife Area approximately 7 miles to the east. The proposed project would complement existing conservation management in the region. No conflict with any existing Habitat Conservation Plan or Natural Community Conservation Plan has been identified; therefore, **no impact** would occur.

References

Flourish 2023 (October). Boyes-Coffman Property Biological Resources Study, Colusa County, California. On file with Colusa County Community Development Department.

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
V. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Discussion

a, b) InContext conducted a cultural resources study of the project site in 2023 (Fernandez 2023). InContext's study consisted of a records search of the Northwest Information Center; background research on the project site and vicinity; a Sacred Lands File and tribal list request submitted to the Native American Heritage Commission; a cultural pedestrian survey of the project site; and recommendations. InContext's study identified two indigenous archaeological resources (WBC-01, WBC-02) at the project site and one previously recorded architectural resource (Maintenance Area 1 of the East Levee of the Sacramento River), immediately adjacent to the project site.

In January 2024, ESA prepared an Archaeological Survey Report to supplement the InContext report (Fernandez 2023) by conducting additional identification efforts for archaeological resources, including determining their vertical and horizontal extents, and provide recommendations for management of these resources (Mattes 2024). The study consisted of a review of the previous cultural resources study conducted at the project site; an intensive-level pedestrian survey of the two archaeological resources previously identified at the project site; and an archaeological subsurface survey (using hand augers) of the two archaeological resources to determine horizontal and vertical extents of the resources. As a result of ESA and InContext's studies, the two archaeological resources identified at the project site were characterized as follows: WBC-01—sparse scatter of flaked-stone debitage and ground-stone fragments, dietary faunal remains, and shell; WBC-02—scatter of flaked-stone debitage and tools, ground-stone tools, dietary faunal remains, and shell. Neither resource was evaluated for eligibility for listing in the California Register of Historical Resources.

In December 2023, ESA sent letters and email to Tribal representatives of the: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Grindstone Rancheria of Wintun-Wailaki, Kletsel Dehe Band of Wintun Indians, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation (YDWN). These letters and emails provided details, including a map, of the proposed project and requested that the Tribes provide any concerns they may have regarding potential impacts from the proposed project on cultural resources and tribal

cultural resources. The correspondence also invited the Tribes to participate in a site visit to the project site to discuss the proposed project and any concerns the Tribes may have. YDWN replied to ESA the same month via email and letter, requesting engagement on the proposed project and additional information on its associated cultural resources studies. On January 19, 2024, representatives from WES and ESA conducted a site visit at the project site with Tribal representatives from YDWN. During the visit, details on the proposed project and the cultural resources studies conducted to date for the proposed project were discussed.

YDWN recommended that a Tribal Resources Sensitivity Training be conducted for project construction personnel prior to implementation of the proposed project. The recommended Tribal Resources Sensitivity Training is included as **Mitigation Measure CUL-1** below.

To protect potential previously unidentified archaeological resources that may qualify as historical resources or unique archaeological resources, **Mitigation Measures CUL-1** to **CUL-3** would be implemented (see below). Additionally, the two known archaeological resources WBC-01 and WBC-02 that were identified in the project site would be avoided with plantings and any ground-disturbing activities within 50 feet of either archaeological resource and fencing would be installed at this buffer at WBC-02, as indicated in **Mitigation Measure CUL-4** below. Therefore, impacts on historical resources and unique archaeological resources are anticipated to be **less than significant with mitigation incorporated**.

c) No human remains have been identified in the project site through archival research, field surveys, or Native American outreach. Also, the land use designations for the project site do not include cemetery uses, and no known human remains exist within the project site. Therefore, the proposed project is not anticipated to disturb any human remains. However, to protect potential previously unidentified human remains, **Mitigation Measures CUL-1** and **CUL-3** would be implemented. Therefore, impacts on human remains are anticipated to be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure CUL-1: Tribal Resources Sensitivity Training

Before the start of project planting activities, a Tribal Resources Sensitivity Training shall be implemented. A representative from YDWN shall conduct the training for project personnel regarding background on indigenous use of the vicinity and protocol to follow should potential indigenous archaeological materials and/or tribal cultural resources be discovered. WES shall ensure that project personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-2: Discovery or Recognition of Archaeological Resources During Construction

If archaeological resources are encountered during proposed project construction, all construction activities within 100 feet shall immediately halt, and a qualified archaeologist,

defined as an archaeologist meeting the U.S. *Secretary of the Interior's Historic Preservation Professional Qualification Standards* for Archeology, shall inspect the find within 24 hours of discovery and shall notify the County of their initial assessment. Indigenous archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls; and deposits of metal, glass, and/or ceramic refuse.

If the County determines, based on recommendations from the qualified archaeologist and California Native American Tribes, if the resource is indigenous, that the resource may qualify as an historical resource, unique archaeological resource, or tribal cultural resource (as defined by CEQA), the resource shall be avoided, if feasible. This may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If avoidance of the resource is not feasible, the County shall continue to consult with California Native American Tribes, if the resource is indigenous, and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to CEQA. This shall include preparation and implementation of a detailed treatment plan to recover the scientifically consequential information from the resource before any excavation at the resource site. The treatment plan shall be prepared in consultation with the County, and, if the resource is indigenous, relevant California Native American Tribes. Treatment for most resources would consist of (but would not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be affected by the proposed project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals. Any technical report developed to document the implementation mitigation shall be submitted to the Northwest Information Center upon approval by the County, unless the document contains information that California Native American Tribes involved in the development of the mitigation deem should not be filed with the Northwest Information Center, in which case, the report shall be submitted to the Native American Heritage Commission.

Mitigation Measure CUL-3: Discovery or Recognition of Human Remains During Construction

In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall immediately cease until the Colusa County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission shall be contacted within 24 hours if it is determined that the remains are Native American. The Native American Heritage Commission shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the lead agency for the appropriate means of treating the human remains and any grave goods. Per Public Resources Code Section 5097.98, the County

shall ensure that the immediate vicinity of the location of the human remains is not damaged or disturbed by further development activity until the County has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Mitigation Measure CUL-4: Protection of WBC-01 and WBC-02

In order to protect archaeological resources WBC-01 and WBC-02, no plantings or any ground-disturbing activities shall occur within 50 feet of the boundaries of either site. Additionally, fencing shall be installed at the 50-foot buffer around WBC-02 to prevent driving through the sensitive area.

References

Fernandez, Trish. 2023 (October). Cultural Resources Study Report, Boyes-Coffman Property. InContext, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Mattes, Matt. 2024 (January). Boyes-Coffman Mitigation Bank Property: Archaeological Survey Report. ESA, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Energy

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VI.	**ENERGY —** Would the project:				
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion

a) Construction activities associated with the proposed project would consume energy in the form of diesel and gasoline fuels to power limited mechanical equipment and vehicles used to transport workers and materials to the project site. No additional electrical infrastructure is proposed or required with the proposed project. Operation and maintenance of the proposed project is not anticipated to increase consumption of diesel or gasoline fuel compared to historical use of the project site as a walnut orchard as existing staff and maintenance vehicle trips would conduct operation and maintenance activities. Therefore, project construction and operation would not require excessive or wasteful use of energy. Impacts would be **less than significant**.

b) As noted in question (a) above, no additional electrical infrastructure is proposed or required with the proposed project and operation and maintenance of the proposed project is not anticipated to increase consumption of diesel or gasoline fuel compared to historical use of the project site as a walnut orchard. The proposed project would not conflict with applicable energy policies. **No impact** would occur.

Geology and Soils

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion

a) The proposed project would not result in the construction of above-ground structures such as commercial buildings or residential dwellings. Additionally, the proposed project would not result in a substantial increase in the number of people to the project site. No Alquist-Priolo Earthquake Fault Zones or Seismic Hazard Zones are identified within the County of Colusa (Colusa County 2010). The Sacramento River corridor presents the greatest likelihood of loose sediment and saturated soils within Colusa County. The project site is not located in a region with high landslide susceptibility (Colusa County 2010). Given the nature of the proposed project, it would not expose people or structures to substantial adverse effects including the risk of loss, injury, or death involving seismic rupture, strong-seismic shaking, seismic-related ground failure or liquefaction, landslides, or related soil hazards. Impacts would be **less than significant**.

b) As mentioned above in the **Description of Project (Section 8)**, the USDA NRCS Soils Survey maps the project site as containing Moonbend silt loam, with 0 to 2 percent slopes meaning the project site is generally flat. Construction activities associated with the proposed project would involve ground-disturbing earthwork, including minimal disking and light trenching. Staging would occur in a designated area of the project site, as shown in **Figure 2**. These activities could increase the susceptibility of soils on the project site to erosion by wind or water and subsequently result in the loss of topsoil. As described in the **Description of Project (Section 8)**, erosion control BMPs would be implemented. Impacts on soil erosion or the loss of topsoil would be **less than significant**.

c, d) Approximately two-thirds of Colusa County's land surface is comprised of soils that would require special design considerations due to shrink-swell potentials, including areas along the Sacramento River. The subject property is located to the east of the Sacramento River, but the proposed project would not include the construction of habitable structures and construction activities would be short term and temporary. The proposed project would not create substantial direct or indirect risks to life or property related to unstable or expansive soils, and impacts would be **less than significant**.

e) The proposed project would not result in the use of septic tanks or alternative wastewater disposal systems, therefore, there would be **no impact**.

f) The proposed project would not destroy any unique geologic features on the project site. Due to the nature of the soils in the project site and the nature of the proposed project which would involve relatively shallow trenching of up to 12 inches in depth, the probability of encountering paleontological resources within the project site is minimal. Therefore, the proposed project would not destroy a unique paleontological resource or site or unique geologic feature. There would be **no impact**.

References

Colusa County. 2010. Colusa County General Plan Background Report. Available: http://www.countyofcolusageneralplan.org/sites/default/files/Colusa%20Background%20Report_Complete_no%20figures.pdf. Accessed May 21, 2024.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VIII. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a, b) The proposed project would not significantly increase greenhouse gas emissions either directly or indirectly. All site preparation would be conducted using traditional agricultural methods and equipment by WES staff and the onsite farmer. Minimal disking would occur to prepare the site and planting would occur by hand. Minimal mechanical equipment that would generate pollutants or greenhouse gas emissions would be required for construction or operation of the proposed project and equipment needs would likely be less than when the project site was managed as a walnut orchard. Given the nature of the proposed project, it would not conflict with plans, policies or regulations adopted by the State of California or the Colusa County Air Pollution Control District for reducing greenhouse gas emissions. Impacts would be **less than significant**.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Discussion

a, b) Construction and operation of the proposed project would involve the use of small quantities of fuel and other petroleum-based products such as oil and transmission fluids, which are considered hazardous materials. Project construction would include BMPs to minimize the risk of a hazardous materials release during construction activities, further discussed under *Site Preparation and Best Management Practices* above in the **Description of Project (Section 8)**. In addition, the project would be subject to the applicable requirements of the Colusa County Certified Unified Program Agency (CUPA) including obtaining a Hazardous Material Business Plan should quantities of regulated substances exceed exempted amounts. All refueling and maintenance activities would occur within the designated staging area (shown in **Figure 2**). Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations. Therefore, impacts associated with the potential to create a significant hazard to the public or the environment would be **less than significant**.

c) The closest schools to the project site are Princeton High School and Princeton Elementary School, approximately 2.9 and 3.2 miles north of the project site, on the opposite side of the Sacramento River as the project site. There are no schools within 0.25 mile of the project site, therefore, the potential for hazardous emissions or handling of hazardous materials within 0.25 mile of an existing or proposed school would not occur. There would be **no impact**.

d) The proposed project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (referred to as the "Cortese List") (DTCS 2024; State Water Board 2024). Therefore, the proposed project would not create a significant hazard to the public or the environment and there would be **no impact**.

e) The project site is not located within an airport land use plan and there are no airports located within 2 miles of the project site. The nearest airport (Colusa County Airport) is located approximately 12 miles south of the project site. Therefore, there would be **no impact**.

f) Project construction would not require road closures or obstruct nearby roadways, and the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be **no impact**.

g) According to the California Department of Forestry and Fire Protection, the subject property is located within a Local Responsibility Area (not in or near a State Responsibility Area) and is not within a high fire hazard severity zone (CAL FIRE 2023). The proposed project would not significantly exacerbate risk associated with the loss, injury, or death involving wildland fires. Impacts would be **less than significant**.

References

California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zones in State Responsibility Area. Available: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed May 16, 2024.

California Department of Toxic Substance Control (DTSC). 2024. EnviroStor Hazardous Waste and Substances Site List (CORTESE). Available: https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,FUDS&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST+%28CORTESE%29. Accessed May 20, 2024.

State Water Resources Control Board (State Water Board). 2024. Geotracker. Available https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=colusa. Accessed May 20, 2024.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
X. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

a) The main irrigation system that is currently in place on the property would be used to drip irrigate the proposed elderberry and native plantings. During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum, which could expose and disturb small areas of ground, and staging would occur in a designated area of the project site, as shown in **Figure 2**. The construction period would be of short duration, and operations and maintenance-related activities would be limited to monitoring and land management activities to maintain restored habitat conditions. The proposed project would not create new sources of water discharge or violate water quality standards. **No impact** would occur.

b) The water source for the proposed project would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard. The proposed project would not substantially decrease groundwater supplies or interfere

substantially with groundwater recharge; therefore, this impact would be **less than significant**.

c) During irrigation installation there may be the need for some light trenching, up to 12 inches in depth, maximum, which could expose and disturb small areas of ground, and staging would occur in a designated area of the project of the project site, as shown in **Figure 2**. The proposed project would not substantially alter the existing drainage pattern of the site or area. The proposed project would not include the addition of impervious surfaces or produce erosion or substantive runoff volumes. Impacts would be **less than significant**.

d) The proposed project would not include the storage of any pollutants that would be at risk of release due to flood inundation because no new chemicals or fuels would be stored onsite. Project construction would include BMPs to minimize the risk of a hazardous materials release during construction activities, further discussed under *Site Preparation and Best Management Practices* above in the **Description of Project (Section 8)**. Seiches are large waves on an enclosed or semi-enclosed body of water that can be caused by seismic activity. The project area is landlocked (located to the east of the Sacramento River) and not within proximity of any closed or semi-enclosed water body; there is no risk of the project altering conditions related to seiches. Tsunamis occur on the ocean and the project area is not located near the ocean. Therefore, there would be a **less than significant impact** related to the risk of release of pollutants due to project inundation caused by a flood, seiche, or tsunami.

e) As noted above, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge and therefore would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be **less than significant**.

Land Use and Planning

Issues (and Supporting Information Sources):		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**LAND USE AND PLANNING —** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

Discussion

a) Project construction and operation would occur within the approximately 62-acre project site, in a rural area of Colusa County. The nearest established community is the City of Colusa approximately 9.5 miles south of the project site. The project site has historically been used for agricultural purposes and the proposed project entails planting native habitat, with sheep grazing during long term operations as part of vegetation management. Surrounding land uses include agricultural crops to the north, south and east of the property, mostly walnut orchards, and includes rural residential uses. The Sacramento River flows along the western border approximately 0.25 mile west of the property. The property is in proximity to the Willow Bend Preserve and near various other conservation areas representing various high-priority conservation along the Sacramento River. Therefore, the proposed project would be consistent with surrounding land uses and would not physically divide an established community. **No impact** would occur.

b) The project site is zoned as Exclusive Agriculture (E-A) and is designated under the Colusa County General Plan as Agricultural General (AG). The subject property to the west of the project site is zoned River Frontage (R-F) and is designated as Designated Floodway (DF) under the General Plan (Colusa County 2012 and 2019).

The Colusa County General Plan (2012) includes several policies related to open space, land conservation, and agriculture applicable to the proposed project:

> **Policy OSR 1-3:** Support the preservation of open space consistent with this General Plan, via acquisition of fee title or easements by land trusts, government agencies, and conservancies from willing landowners, subject to the standards identified in Policy CON 1-3.
>
> **Policy CON 1-3:** Lands that are actively managed or placed under conservation easement for habitat, wetlands, species, or other natural resource or open space preservation or conservation shall be limited to lands designated Resource Conservation (RC), unless the conditions identified in Policy AG 1-14 are met.
>
> Habitat and/or wildlife easements proposed in Colusa County for the loss of open space or habitat in other jurisdictions will not be recognized and are not acceptable unless the easement meets all of the following criteria:

- Prior notification to Colusa County;
- Consistency with the goals and policies of the Colusa County General Plan, particularly as related to planned growth, infrastructure, and agricultural preservation;
- Compensation to Colusa County for all lost direct and indirect revenue;
- Compatible with neighboring land uses;
- Located outside of urban and urban reserve areas;
- Secured water rights and infrastructure to economically maintain the proposed mitigation use;
- Requirements that existing agricultural operations continue to be farmed for commercial gain;
- Requirements that habitat management practices do not adversely impact adjacent agricultural operations;
- Prioritize purchase of mitigation credits by local developers; and
- Accommodation of recreational uses or public access, where appropriate.

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless all of the following conditions are met:

a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.

b. The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.

c. There would not be a concentration of resource conservation lands in the immediate area.

If the above conditions are met, the resource conservation activities shall require a Conditional Use Permit.

An important consideration of Policy CON 1-3 is the requirement that compensation be provided to Colusa County for all lost direct and indirect revenue. The issue that resulted in the adoption of this General Plan requirement is that productive agricultural land in the County is being lost for habitat mitigation banks that are being developed to provide mitigation for development projects outside of the County. As a result, agricultural production and the resulting economic benefits to the County are being lost in favor of the economic benefits from development activity in jurisdictions outside of the County.

In order to provide the compensation to the County required by Policy CON 1-3, the Board has previously entered into mitigation bank credit reservation and discount agreements with mitigation bank developers. In order to be consistent with these past

actions and address the requirements of Policy CON 1-3, **Mitigation Measure LU-1** (below) specifies that the County's General Plan and Zoning Amendment approval will be contingent upon the approval of a mitigation bank reservation and credit agreement by the Colusa County Board of Supervisors. This will be addressed as a condition of approval.

Consistent with Policy AG 1-14, a General Plan land use designation change from Agriculture General (AG) to Resource Conservation (RC) is proposed for the project site (see **Mitigation Measure AG-1**). A Zoning Amendment to rezone the property from its current Exclusive Agriculture (E-A) classification to Resource Management (R-M) is also proposed.

The proposed project would, to an extent, involve ongoing agricultural activities (grazing) and would be compatible with agricultural activities in the vicinity and would not adversely affect those agricultural activities. Surrounding land uses include agriculture row crops to the north, east, and south and the Sacramento River to the west. The habitat that would be planted with the proposed project would be the same plant composition that already occurs in the riparian habitat along the Sacramento River. All of the species that may use the project site are already in the vicinity and utilizing the existing habitat; therefore, no additional wildlife or other species are anticipated to be attracted to that habitat that are not already present in the vicinity. Sheep grazing would be included on the project site during long term operations as part of vegetation management and fencing around the project site would keep the sheep in the project site.

With the approval of General Plan and Zoning Amendments prior to project implementation, the proposed project would be consistent with applicable sections of the Colusa County General Plan and zoning ordinance. No changes to the Designated Floodway General Plan designation or River Frontage (R-F) zoning associated with the western portion of the property are proposed. **Mitigation Measure AG-1** would be implemented, refer **to Section II (Agriculture and Forestry Resources**). For these reasons, the proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and this impact would be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure AG-1: General Plan Amendment and Zoning Amendment (refer to Section II (Agriculture and Forestry Resources)

Mitigation Measure LU-1: Mitigation Bank Credit Reservation and Discount

A condition of approval shall be required that makes the General Plan land use designation change and Zoning Amendment approval contingent upon entering a mitigation bank credit and reservation agreement with the County of Colusa. The terms of this agreement shall include discounts for the County's purchase of mitigation credits generally consistent with the discounts provided in the Sacramento River VELB

Mitigation Bank Reservation and Discount Agreement, and shall be mutually acceptable to the County and WES and shall specify the number of credits reserved for the County, the discount amount, the amount of time of the reservation, and other applicable factors detailed in said agreement.

References

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2013. Available: https://www.countyofcolusa.org/137/General-Plan. Accessed May 21, 2024.

———. 2019. Colusa County Zoning Map. July 2019. Available: https://www.countyofcolusa.org/DocumentCenter/View/4468/Adopted-Countywide-Zoning-Map_Current-to-July-2019?bidId=. Accessed May 21, 2024.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

a, b) The subject property is not located within an area classified as a mineral resource by the State Geologist (USGS 2024). The closest active mineral resource extraction sites are the Brownstone Quarry approximately 17 miles to the west near Sites, and the Lovelady Ranch and Little Stoney Mine approximately 28 miles to the west near Lodoga (DOC 2022). Given that the project site is neither located in or near a mineral resource recovery site, nor is it located in an area of regional significance, there would be no loss of availability of a known mineral resource. There would be **no impact** under this criterion.

References

California Department of Conservation (DOC). Mines Online. CA.GOV. 2022. Available: https://maps.conservation.ca.gov/mol/index.html. Accessed: May 28, 2024.

United States Geological Survey (USGS). 2024. Mineral Resources Online Spatial Data Interactive Map. Available: https://mrdata.usgs.gov/general/map-us.html. Accessed May 28, 2024.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIII. NOISE — Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a, b) The subject property is located in a rural setting where surrounding areas include agriculture and the Sacramento River. Two residences are located immediately north and south/east of the property off River Road. Project construction activities could result in a temporary minor increase in ambient noise levels and vibration in the vicinity of the project site but would result in no permanent increase in ambient noise levels in the vicinity of the proposed project. Impacts would be **less than significant**.

c) The project site is not located within an airport land use plan and there are no airports located within 2 miles of the project site. The nearest airport (Colusa County Airport) is located approximately 12 miles south of the project site. Therefore, there would be **no impact**.

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) The proposed project would not include any new residential development or other infrastructure that would either directly or indirectly induce substantial unplanned population growth in the project area. Construction and operation of the proposed project would generate a minimal number of workers to the project site. Therefore, the proposed project would not induce unplanned population growth and there would be **no impact**.

b) The proposed project would not displace any existing housing or people, and it does not involve the construction of new housing Therefore, **no impact** would occur.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XV. PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a) The proposed project does not include the construction of residential or commercial structures, resulting in no substantial population growth in the area. The proposed project would not create the need for governmental facilities and would not increase the need for police protection, schools, parks or other public facilities. Therefore, **no impact** would occur.

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a, b) The proposed project does not include any recreational facilities on site, however there are several recreational sites in the general vicinity. These include the Sacramento River National Wildlife Refuge approximately 3.5 miles to the north, Delevan National Wildlife Refuge approximately 4 miles to the southwest, the Sacramento National Wildlife Refuge approximately 7 miles to the northwest, and the Upper Butte Basin Wildlife Area and Gray Lodge Wildlife Area approximately 7 miles to the east. The proposed project would not result in substantial population growth and would not increase the use of any existing neighborhoods or regional parks or cause the need for expansion of recreational facilities. Therefore, **no impact** would occur.

Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVII. TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

a) The proposed project would not result in substantial population growth or associated increases in traffic. As a result, the proposed project would not conflict with any circulation plans or policies. **No impact** would occur.

b) CEQA Guidelines Section 15064.3, subdivision (b) pertains to criteria for determining the significance of transportation impacts, with a primarily focus on projects within transit priority areas. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

Section 15064.3 of the CEQA Guidelines suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. Furthermore, projects that generate or attract fewer than 110 operational trips per day would generally be exempt from further consideration with respect to VMT and impacts are assumed to be less than significant. Per this guidance, since the proposed project would not generate significant additional traffic, is not a transportation project, and would generate minimal trips for maintenance activities, it can be assumed to have a **less than significant** impact with respect to VMT.

c) The proposed project would use existing site access off River Road and would not introduce any new intersections or adjusted roadway geometry that would have the potential to introduce hazardous driving conditions. **No impact** would occur.

d) The existing road would continue to provide adequate emergency access to the project site, resulting in **no impact**. Refer to **Section IX (Hazards and Hazardous Materials)**, for additional discussion related to emergency access.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

a) As discussed in **Section V (Cultural Resources)**, the cultural resources investigation for the project site identified two indigenous archaeological resources in the project site.

In January 2024, ESA prepared an Archaeological Survey Report to supplement the InContext report (Fernandez 2023) by conducting additional identification efforts for archaeological resources, including determining their vertical and horizontal extents, and provide recommendations for management of these resources (Mattes 2024). As a result of ESA and InContext's studies, the two archaeological resources identified at the project site were characterized as follows: WBC-01—sparse scatter of flaked-stone debitage and ground-stone fragments, dietary faunal remains, and shell; WBC-02—scatter of flaked-stone debitage and tools, ground-stone tools, dietary faunal remains, and shell. Neither resource was evaluated for eligibility for listing in the California Register of Historical Resources.

In December 2023, ESA sent letters and email to Tribal representatives of the: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Grindstone Rancheria of Wintun-Wailaki, Kletsel Dehe Band of Wintun Indians, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation (YDWN). These letters and emails provided details, including a map, of the proposed project and requested that the Tribes provide any concerns they may have regarding potential impacts from the proposed project on cultural resources and tribal cultural resources. The correspondence also invited the Tribes to participate in a site visit to the project site to discuss the proposed project and any concerns the Tribes may have. YDWN replied to ESA the same month via email and letter, requesting engagement on

the proposed project and additional information on its associated cultural resources studies. On January 19, 2024, representatives from WES and ESA conducted a site visit on the project site with Tribal representatives from YDWN. During the visit, details on the proposed project and the cultural resources studies conducted to date for the proposed project were discussed. YDWN did not specifically identify either WBC-01 or WBC-02 as tribal cultural resources, but did note their importance to the Tribe, as indigenous archaeological resources. Because no tribal cultural resources have been identified at the project site, the proposed project is not anticipated to impact any tribal cultural resources.

YDWN recommended that a Tribal Resources Sensitivity Training be conducted for project construction personnel prior to implementation of the proposed project. The recommended Tribal Resources Sensitivity Training is included in **Mitigation Measure CUL-1**, refer to **Section V (Cultural Resources)**.

In addition to the early consultation with the Tribal organizations discussed above, the County processed the proposed project notification pursuant to California Assembly Bill 52 (AB 52) using the contact list maintained by the California Native American Heritage Commission. This notification also included those Tribes that had previously requested to be notified of County proposed projects, pursuant to AB 52. YDWN contacted the County to request consultation on the proposed project. County staff provided YDWN with information from the Initial Study prepared by the applicant, citing required mitigation measures for tribal cultural resources including Tribal Resources Sensitivity Training. After reviewing this information, YDWN commented that no formal consultation, pursuant to AB 52, was necessary for the proposed project, but they wanted to be kept informed of any significant updates or information.

To protect potential previously unidentified archaeological resources or human remains that may qualify as tribal cultural resources, **Mitigation Measures CUL-1** to **CUL-3** would be implemented. Additionally, **Mitigation Measure CUL-4** would be implemented to protect the two known archaeological resources WBC-01 and WBC-02. Therefore, impacts on tribal cultural resources are anticipated to be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure CUL-1: Tribal Resources Sensitivity Training, CUL-2: Discovery or Recognition of Archaeological Resources During Construction, CUL-3: Discovery or Recognition of Human Remains During Construction, and Mitigation Measure CUL-4: Protection of WBC-01 and WBC-02 (refer to Section V (Cultural Resources)

References

Fernandez, Trish. 2023 (October). Cultural Resources Study Report, Boyes-Coffman Property. InContext, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Mattes, Matt. 2024 (January). Boyes-Coffman Mitigation Bank Property: Archaeological Survey Report. ESA, Sacramento, CA. Prepared for Westervelt Ecological Services, Sacramento, CA.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) The proposed project would be limited to providing suitable habitat for VELB with a shrub-dominated riparian habitat. Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities are not included as components of the proposed project. Additionally, as previously discussed, the proposed project would not contribute to population growth resulting in the need for expanded utilities. Therefore, there would be **no impact**.

b) The proposed project would not require or result in the relocation or construction of any new or additional sources of water. The main irrigation system that is currently in place on the property would be used to drip irrigate the elderberry and native plantings. The water source would be the existing agricultural well on site. The VELB habitat would only be irrigated long enough to establish the plants. Irrigation of the plantings would taper and ultimately be discontinued within five years after planting. The amount of irrigation water used would be less than when the project site was planted as a walnut orchard. For these reasons, the impact would be **less than significant**.

c) Construction, operation, and maintenance of the proposed project would not result in an increase in population and would not require temporary or permanent wastewater treatment. The proposed project would not affect the wastewater treatment capacity, and there would be **no impact**.

d, e) The proposed project would not generate solid waste in excess of State or local standards or impair the attainment of solid waste reduction goals. The proposed project would also comply with applicable regulations related to solid waste. Therefore, **no impact** would occur.

Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

a-d) Project construction and operation would not require any road closures and would not substantially increase traffic in the area compared to current conditions. Existing roads would continue to provide adequate emergency access to the project site. The proposed project also does not include any infrastructure that would exacerbate fire risk. In addition, annual vegetation maintenance would remove fuel loading and reduce wildfire risks. Although the proposed project would alter land cover, erosion control BMPs would be implemented for the proposed project (as described in the **Description of Project [Section 8]**) which would reduce the likelihood of runoff or drainage changes being discharged on or offsite, and given the project site's relatively flat topography, no structures or people would be exposed to downslope or downstream flooding or landslides.

The proposed project is not located in or near a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone (CAL FIRE 2023). Therefore, **no impact** related to wildfire in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zone would occur.

References

California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zones in State Responsibility Area. Available: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed May 16, 2024.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a) As discussed in this Initial Study, implementation of the proposed project along with the incorporation of the identified mitigation measures and BMPs identified in the **Description of Project (Section 8)**, would not have the potential to significantly degrade the quality of the environment (see **Section II [Biological Resources] and Section III [Cultural Resources]**). Impacts would be **less than significant with mitigation incorporated**.

b) The evaluation of cumulative impacts considers the locations of potential impacts of the proposed project relative to the geographic extent of other past, present, and reasonably foreseeable future projects with which it may be combined. No other projects in the project area were identified as past, present, and reasonably foreseeable future projects. While construction and operation of potential future projects in the project area could result in a cumulatively significant impact, considering the limited scope and scale of the proposed project, the project site's characteristics, and the surrounding environment, the proposed project along with the incorporation of the identified mitigation measures and BMPs identified in the **Description of Project (Section 8)**, would reduce the contribution of the proposed project to cumulative impacts to less than cumulatively considerable, and cumulative impacts would be **less than significant**.

c) Implementation of the proposed project would not have any potentially significant negative effects on human beings. Therefore, **less-than-significant** impacts on human beings are anticipated.

Appendix A

Boyes-Coffman Property Biological Resources Study

Boyes-Coffman Property
Biological Resources Study
Colusa County, California

PREPARED FOR

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October 2023

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Acronyms and Abbreviations

CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWHR	California Wildlife Habitat Relationships
CWMW	California Wetlands Monitoring Workgroup
DPS	Distinct Population Segment
ESU	Evolutionary Significant Unit
GIS	Geographic Information System
HUC	Hydrologic Unit Code
msl	mean sea level
NRCS	Natural Resources Conservation Service
RM	River Mile
Study Area	Boyes-Coffman Property
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WES	Westervelt Ecological Services
WRCC	Western Regional Climate Center

1 INTRODUCTION

1.1 Background

This Biological Resources Study has been prepared on behalf of Westervelt Ecological Services (WES) to describe the natural resource characteristics of a property of interest, which is referred to as Boyes-Coffman. The Boyes-Coffman property (Study Area) is approximately 124 acres. Biological resources within the Study Area were evaluated to support feasibility studies and assessment of opportunities for habitat conservation and enhancement.

1.2 Study Area Location

The Study Area is located off River Road, approximately 11 miles north of the City of Colusa in northern Colusa County (**Figure 1**). The Study Area is in the Moulton Wier U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map, Township 17 N, Range 01 W, Sections 5 and 6 (**Figure 2**).

The Study Area lies in the Sacramento River floodplain and the Butte Basin with the Sacramento River flowing along its western edge. A U.S. Army Corps of Engineers (USACE) levee (project levee) maintained by the Department of Water Resources (DWR) bisects the Study Area. A recent aerial overview of the Study Area is provided as **Figure 3** (Approximate center coordinates: World Geodetic System [WGS84] Latitude: 39.35695°, Longitude: -122.007672°)**.** The general area is characterized by agricultural, rural, and open space land uses. Several wildlife refuges and other protected lands are in proximity (**Figure 4**).

2 METHODS

Evaluation of the Study Area included both desktop background information gathering and onsite reconnaissance. Both methods are described below.

2.1 Desktop Analysis

Biological resources within the Study Area may be of conservation value to various regulatory agencies. The references listed below informed development of the biological resources study, regional and site characterization, and reporting.

- A records search of California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) using a 5-mile radius (CDFWa 2023) centered on the Study Area;
- A records search of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants Database of Moulton Weir USGS 7.5-minute topographic quadrangle and surrounding 8 quadrangle maps (CNPS 2023, **Appendix A**);
- An Information for Planning and Consulting species list generated by the United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System using the Study Area boundary (USFWS 2023, **Appendix A**);
- Soils information from the US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2023);
- EcoAtlas (CWMW 2023);
- California Wildlife Habitat Relationships (CWHR) database (Mayer and Laudenslayer 1988);
- Sacramento River Conservation Area Forum Handbook (SRCAF 2003); and
- Property description provided by WES.

2.2 Survey

2.2.1 Survey Dates and Surveying Personnel

Flourish Biologist Mahala Guggino conducted biological resource assessments within the Study Area on September 7 and October 25, 2023. WES staff, including Tara Beltran and Marina Olson, attended the site visit on September 7th. On October 25, independent wildlife biologist Sara Chandler assisted with the survey. Surveys included a general assessment of biological and aquatic resources present; assessments did not include protocol surveys for specific species, nor a formal jurisdictional aquatic resources delineation.

2.2.2 Habitat and Vegetation Surveys

The biological survey consisted of inventorying observed plants and animals and evaluating vegetation and special-status species habitat. Vegetation and habitat were characterized in the field and mapped using existing aerial photography. A list of plants observed during reconnaissance is provided as **Appendix B** and a list of observed wildlife species is provided as **Appendix C**. The boundaries of vegetation and habitat were subsequently digitized using Geographic Information System (GIS) software in the State Plane coordinate system (NAD 83), with units as "survey feet."

3 ENVIRONMENTAL SETTING

3.1 Overview

The Study Area occurs in the northern Sacramento Valley on the eastern edge (left bank) of the Sacramento River at approximately River Mile (RM) 160 and along the eastern edge of the Butte Basin (**Figure 2**). The Study Area lies in the Central Valley Ecoregion and within the legislated Sacramento River Conservation Area, which covers the reach of Sacramento River from just below Keswick Dam downstream to the confluence with the Feather River at Verona. The surrounding area is predominantly a rural landscape characterized by protected wildlife corridors, flood control and storage, and agricultural land uses. A system of levees and weirs operated as part of the Central Valley Flood Protection Plan influences local flooding patterns and processes.

Several state and federal wildlife areas occur in the vicinity, including Gray Lodge Wildlife Refuge to the east, Delevan Wildlife Refuge to the southwest, Sacramento National Wildlife Refuge properties to the south, west, and north, and the Upper Butte Basin Wildlife Area to the east (**Figure 4**). Other conservation lands in the local area include a proposed conservation bank owned by WES at Hamilton Bend and River Partners' Willow Bend Preserve (**Figure 4**).

Historically, the region supported a wide river floodplain with shifting, meandering channels and a rich mosaic of riparian woodland and scrub, freshwater marsh, permanent sloughs, seasonal lakes, and large stands of valley oak woodland. The floodplain on the west side of the project levee is part of the 100-year meander belt of the Sacramento River. This floodplain sits on a high terrace above the Sacramento River. Historic photographs from 1964 and 1975 demonstrate the dynamic conditions on the river side of the project levee as well as remnant slough and oxbow lake (abandoned channel meander) signatures (**Appendix D**). Much of this historic habitat has been converted or otherwise altered to accommodate agricultural land uses. The Study Area is zoned Exclusive Agriculture (**Figure 5**) and the General Plan designates the parcels as Agricultural General on the east side of the project levee and Designated Floodway on the west side of the project levee.

3.2 Climate

The region's Mediterranean climate has cool, wet winters and hot, dry summers. The average annual minimum temperature at the nearest weather station in Colusa is 47.6°F and the average annual maximum temperature is 75°F. Average annual precipitation received via rainfall over the period of record is 16.22 inches (WRCC 2023).

3.3 Geology

An ancient Sacramento River system lies between the current channel alignment and its adjacent basins. Natural levees form gentle mounds on either side of the Sacramento River in the Study Area's reach, separating the main channel from overflow basins on either side. Natural levees consist of loamy soils, while basin soils have a higher clay component. There are many oxbow lakes and meander scars in this reach of the Sacramento River. The riverbanks are composed of silts and sands (SRCAF 2003).

The Sacramento River Watershed contains four major landform types (each with its own characteristic soils): (1) floodplain, (2) basin rim/basin floor, (3) terraces, and (4) foothills and mountains. Within the Study Area, mapped geologic landforms include Sacramento River floodplain with natural levees and flood basin (Olmstead and Davis 1961). Floodplain alluvial soils promote vigorous growth of plants and are commonly used for agricultural purposes. Basin landforms consist of poorly drained soils, with saline and alkali soils in the valley trough and on the basin rims. A strip of natural levee deposits lies on the east side of the project levee within this reach of the Sacramento River (SRCAF 2003).

3.4 Soil

There are 2 soil series mapped within the Study Area (**Figure 6**): Moonbend silt loam (frequently flooded series on the riverside of the project levee and occasionally flooded on the landside) and Vina loam (NRCS 2023).

Moonbend silt loam is moderately well drained soil found on floodplains and derived from alluvium (NRCS 2006). The hydrology of this frequently flooded soil series has been altered in frequency and duration by flood control structures. In particular, the occasionally flooded soil unit now floods for longer periods than under historic conditions. Available water capacity is very high and runoff is very low. The Moonbend series is typically used for irrigated crops (NRCS 2006). Native vegetation associated with this soil series includes oaks, willows, wild grapes, and annual grasses and herbs.

Vina loam is well drained soil found on floodplains and derived from alluvium (NRCS 2006). Available water capacity is high and runoff is very low. Flooding is frequent in the mapped unit. The Vina loam series is typically used for irrigated crops (NRCS 2006). Native vegetation associated with this soil series includes valley oaks, cottonwoods, and annual and perennial grasses.

3.5 Topography

Topography in the Study Area is variable; however, the majority is flat to gently sloping with elevations ranging from 70 to 75 feet above mean sea level (msl) (**Figure 2**). The riverbank along the southwestern portion of the Study Area and the oxbow lake have steeper slopes ranging from approximately 60 to 70 feet above msl. The project levee rises steeply above the floodplain to approximately 90 feet above msl. In general, the topography gently slopes towards the north and east on the riverside of the project levee and towards the southeast on the landside of the project levee (**Figure 7**).

3.6 Watershed and Hydrology

The Study Area crosses two watersheds, the Sacramento River 12-digit Hydrologic Unit Code (HUC) and the Lower Butte Creek 12-digit HUC (**Figure 8**) and occurs within Reach 3 of the Sacramento River (Chico Landing to Colusa). The greater Sacramento River watershed drains over 27,000 square miles of the Sacramento Valley into the middle and lower reaches of the Sacramento River. The upper watershed includes the drainages above Lake Shasta and Lake Oroville. The valley segment includes the upper Colusa and Cache Creek watershed on the west side of the river and the Feather River and American River watersheds on the east side of river. The Sacramento River's gentle descent into the Delta subtlety decreases from 300 feet at its northern end to near sea level in the Delta (Olmstead and Davis 1961). Historically, the Sacramento River overflowed its banks downstream of Stony Creek (south of Hamilton City) during floods (Thompson 1961). The overflow traveled through the sloughs and channels within the Butte, Sutter, Colusa, and Yolo Basins into the Delta. The complex network of sloughs and other distributary channels that previously meandered their way into tule-filled basins have been replaced by a systematic network of overflow areas and weirs. Typically, the floodplain within Reach 3 is inundated by a 2-year flood event (SRCAF 2003). The area west of the project levee occurs in the 100-year Flood Hazard Area defined by the Federal Emergency Management Agency (**Figure 5**).

The hydrology of the lower Butte Creek system varies on an annual, seasonal, and daily basis. In winter and spring of wet years, the Butte Sink is flooded most of the time. During dry periods, water flows are low or even absent from some (ESA 2012). Diversions from the Sacramento and Feather Rivers augment natural flows in Butte Creek during dry years. Sacramento River flows that spill at the Colusa and Moulton Weirs flood the Butte Basin. These conditions occur before the Sacramento River is at flood stage; however, Butte Creek can already be at flood stage at the same time because of upstream inflow conditions (ESA 2012). Butte Creek is one of the remaining 3 tributaries to the Sacramento River that sustains a population of wild spring-run Chinook salmon (Lindley et al. 2004).

3.7 Vegetation and Habitat

Vegetation patterns vary by regional climate patterns, geomorphic conditions, and land uses. The Sacramento River corridor in Reach 3 is confined by a setback levee system and is a highly managed landscape. Natural plant and wildlife communities are generally restricted to field edges and a narrow corridor along waterways. Backwaters along this stretch of the river flood surfaces west of the project levee during large winter storm events.

The following habitat types and associated vegetation characterize the Study Area: riparian woodland, freshwater emergent wetland, riparian scrub, orchard, cropland, fallow field, ruderal, and disturbed/developed (**Figure 9**). The majority of the Study Area is used for farming operations. According to the current landowner, farming activities have been ongoing since the 1920s.

Special-status plants and animals that are known to or have potential to occur are detailed in Sections 3.8 and 3.9, respectively. Recorded occurrences of select special-status species within a five-mile radius of the Study Area is provided as **Figure 10**. The locations of mapped elderberry are shown on **Figure 9**. Representative photographs of current condition are provided as **Appendix E**. Vegetation and habitat descriptions are provided below.

3.7.1 Riparian Woodland

Riparian communities occur in floodplains, in and along watercourses, and along other transitions from aquatic to terrestrial habitats. Riparian woodland vegetation alliances are often flooded on a seasonal to

periodic basis and characterized by the trees dominating the upper canopy. Mature riparian woodland communities have a multilayered vertical structure with lower, middle, and upper canopies. Composition is generally driven by flooding frequency and timing, depth to groundwater, and stages of succession. Riparian forest successional stages along the Sacramento River are associated with the 100-year meanderbelt. Beyond the meanderbelt, valley oak riparian forests intergrade into valley oak woodland. Riparian habitat management policies developed for the Sacramento River Conservation Area include the concept of the "inner river zone." The inner river zone combines the past 100-year meanderbelt with projected erosion locations 50 years in the future (SRCAF2003).

Riparian woodland within the Study Area occurs in a narrow band along the terrace adjacent to the Sacramento River and along an oxbow lake in the northeast corner of the Study Area. Much of this remnant habitat is mature and represents later stage successional riparian woodland. Due to its location on a higher terrace above the river, floodwaters move slowly bringing deposition - but may not have sufficient velocity to trigger reversion to early successional riparian.

The area mapped as riparian along the Sacramento River (**Figure 9**) is characterized by large, mature Fremont cottonwood (*Populus fremontii*) that dominate the overstory. While the canopy cover provided by cottonwood is less significant than other plant associates, these trees tower over 100 feet above the river terrace. The mid-story includes stands of boxelder (*Acer negundo*), Northern California black walnut (*Juglans hindsii*), Valley oak (*Quercus lobata*), and edible fig (*Ficus carica*). Canopy cover is moderate to dense. Trees and shrubs in the low canopy include blue elderberry (*Sambucus mexicana*), California rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), and button willow (*Cephalanthus occidentalis*). Willows (*Salix gooddingii* and *S. lasiolepis*) are present sporadically. The understory herbaceous layer consists of annual grasses, California mugwort (*Artemisia douglasiana*), and annual forbs. Lianas including wild grape (*Vitis californica*), dutchman's pipevine (*Aristolochia californica*), and pipestem (*Clematis lasiantha*) drape across the riparian canopies. The understory in some areas is absent due to dense canopy cover and flooding regimes while other areas are impenetrable with dense woody vegetation, fallen limbs, and flood-driven deposits. A small stand of California sycamore (*Platanus racemosa*) is present in the mature riparian in the southwestern corner of the Study Area.

A narrow band of valley oak riparian occurs in the upland transition from the oxbow lake to a maintained dirt road. Mature valley oak trees provide deep shade, and the understory is characterized by California rose, Himalayan blackberry, poison oak, and California wild grape.

Riparian woodland habitat is highly valued by wildlife. These stream-side woodlands are an important source of food, water, movement corridors, and cover for many resident and migratory species. Mature riparian habitat within Reach 3 of the Sacramento River is highly valued for listed species such as Swainson's hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Resident birds include black phoebe, oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), wrens, Anna's hummingbird (*Calypte anna*), northern mockingbird (*Mimus polyglottos*), and California scrub-jay (*Aphelocoma californica*). Transient use may include western tanager (*Piranga ludoviciana*), vireo, and warblers. Mature trees support raptors and other birds of prey including osprey (*Pandion haliaetus*), red-shouldered hawk (*Buteo lineatus*), and turkey vulture (*Cathartes aura*). Snags are available for flickers, woodpeckers, owls, nuthatches, tree swallows, and other cavity-nesting birds.

Dense thickets and stands of herbaceous vegetation offer cover, food, and nesting habitat for a many wildlife species, and provide high quality escape cover for mule deer (*Odocoileus hemionus*), black-tailed jackrabbit (*Lepus californica*), California quail (*Callipepla californica*), white-crowned and golden-crowned sparrow (*Zonotrichia leucophrys* and *Z. atricapilla*), and hermit thrush (*Catharus guttatus*). Dusky-footed woodrat (*Neotoma fuscipes*), deer mice (*Peromyscus maniculatus*), and gray fox (*Urocyon cinereoargenteus*) are common inhabitants.

3.7.2 Freshwater Emergent Wetland

The oxbow lake supports freshwater emergent wetland vegetation. Freshwater emergent wetland vegetation zones characteristically occur as a series of concentric rings which follow basin contours and reflect the relative depth and duration of flooding. The portion of the oxbow lake within the Study Area had distinct vegetation layers. The feature was dry during the reconnaissance, and its bottom was a dense, nearly homogenous cover of cocklebur (Xa*nthium strumarium*). Cocklebur is a native annual herb with a Facultative wetland rating – meaning it is equally likely to be found in non-wetlands and wetlands.

Freshwater emergent wetlands are highly productive habitats and widely used by resident and migratory wildlife. In the northern Central Valley, migratory waterfowl flock to wetlands beginning in September, and peaking in December and January. Emergent wetlands within several wildlife refuges in the vicinity of the Study Area support waterfowl species such as greater white-fronted geese (*Anser albifrons*), northern pintail (*Anus acuta*), bufflehead (*Bucephala albeola*), northern shoveler (*Anas clypeata*), and American widgeon (*Mareca americana*). Other migrant, partially migrant, or resident birds may include wading birds such as greater sandhill crane (*Antigone [Grus] canadensis tabida*), black-crowned night-heron (*Nycticorax nycticorax*), great egret (*Ardea alba*), greater yellowlegs (*Tringa melanoleuca*), and black-necked stilt (*Himantopus mexicanus*); as well terrestrial species with some association with wetlands: black phoebe (*Sayornis nigricans*), red-winged blackbird (*Agelaius phoeniceus*), belted kingfisher (*Megaceryle alcyon*), and bald eagle (*Haliaeetus leucocephalus*). Non-avian species associated with wetlands include bullfrog (*Lithobates catesbeianus*), mosquitofish (*Gambusia affinis*), garter snakes, western fence lizard (*Sceloporus occidentalis*), California vole (*Microtus californicus*), northern river otter (*Lontra canadensis*), and striped skunk.

3.7.3 Riparian Scrub

Within the oxbow lake feature, the emergent wetland grades to a California button willow and California wild grape-dominated riparian scrub community along the outer edges and rim of the feature. Riparian scrub communities occur along the wetter edges of aquatic features and are often densely vegetated. These attributes provide important cover and nesting habitat for resident and migratory birds such as bitterns, herons, egrets, vireo, warblers, and red-winged blackbirds.

3.7.4 Orchard

The majority of the Study Area has been used for growing walnut trees. Orchards are planted in uniform patterns and intensively managed. Canopy closure ranges depending on tree maturity. The understory is generally lacking due to ongoing maintenance. Walnut orchard is present on both sides of the project levee, in various stages of development. Drip irrigation is used to supply water.

Areas mapped as orchard in **Figure 9** may include field edges with ruderal, nonnative-dominated vegetation. Ruderal species include annual grasses, filaree (*Erodium* spp.), dock (*Rumex* spp.), mustards

(*Brassica* spp.), chicory (*Cichorium intybus*), yellow starthistle (*Centaurea solstitialis*), Bermuda grass (*Cynodon dactylon*), and perennial pepperweed (*Lepidium latifolium*).

Mule deer, raccoons (*Procyon lotor*), striped skunk, western gray squirrel (*Sciurus griseus*), wild turkey (*Meleagris gallopavo*), and black-tailed jackrabbit may use these areas for foraging and movement. Walnuts may provide food for northern flicker (*Colaptes auratus)*, California scrub jay, American crow (*Corvus brachyrhynchos*), oak titmouse, Brewer's blackbird (*Euphagus cyanocephalus*), house finch, western gray squirrel, and California ground squirrel (*Otospermophilus beecheyi)*.

3.7.5 Cropland

A small portion of the Study Area mapped as cropland is currently farmed for beans. During the non-growing season, this area is cleared of vegetation. A segment of a remnant slough feature (subtly variable topography) occurs within the cropland area in and adjacent to the Study Area and provides connection to the oxbow lake during flood events. This feature is evident in the 1975 aerial (Appendix D). Wildlife habitat is currently minimized in this highly managed area except for limited foraging and movement.

3.7.6 Fallow Field

The fallow fields vary in composition based on length of time out of production. They range from mostly barren expanses in newly cleared fields to dense patches of pest plants. Common species included mustards, Johnson grass (*Sorghum halepense*), dock, Jimson weed (*Datura stramonium*), radish (*Raphanus sativus*), sow thistle (*Sonchus* spp.), and prickly lettuce (*Lactuca serriola*). A hedge of American bird's foot trefoil (*Acmispon americanus*) was noted along a field edge.

Current conditions support limited foraging opportunities for various wildlife (much of the same species listed above under orchard) and the field acts as a movement corridor for terrestrial species. However, it was noted that the large woody piles remaining post-clearing of the orchards were benficiallybused by jackrabbit, squirrels, hawks, and songbirds. It had the highest number of wildlife observations during the surveys.

3.7.7 Ruderal

Ruderal habitats are characterized by areas that are predominantly vegetated with weedy plant species due to routine human disturbances (i.e., herbicide spraying, disking, mowing, vehicular traffic, etc.). Plant species composition within ruderal habitat is typically dominated by non-native grasses and forbs as described above for areas along field edges. Ruderal habitat within the Study Area was characterized by annual bromes (*Bromus* spp.), mustards, dock, bermuda grass, puncture vine (*Tribulus terrestris*), and yellow starsthistle.

Wildlife associated with ruderal habitat are tolerant of disturbances such as mowing, herbicide spraying, and foot and vehicle traffic. Wildlife species using this habitat type may include house mouse (*Mus musculus*), American crow, Brewer's blackbird, European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), California scrub-jay, and yellow-billed magpie (*Pica nuttalli*).

3.7.8 Disturbed/Developed

Disturbed and Developed habitats within the Study Area include the project levee and other staging, parking, and operational infrastructure associated with farming activities. These areas are mostly barren

or vegetated by nonnative grasses and forbs. The ongoing disturbance and maintenance of these areas generally precludes substantial wildlife use.

3.8 Special-status Plants

A list of special-status plants with potential to occur in the Study Area is provided as **Table 1**. Based on a habitat suitability analysis of all the species listed in **Table 1** and best professional judgement, two plants with California Rare Plant Rank (CRPR) status have potential to occur in the Study Area: peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) and woolly rose mallow (*Hibiscus lasiocarpos* var. *occidentalis*). The two special-status plant species are detailed below.

3.8.1 CRPR Status Species

3.8.1.1 Peruvian dodder

Peruvian dodder is an annual parasitic vine in the morning glory family (Convolvulaceae). Freshwater emergent wetland species are host to this dodder (associated with plants in the genus *Alternanthera*, *Dalea*, *Lythrum*, *Polygonum*, and *Xanthium*). Flowering may occur July through October. Its CRPR is 2B.2; plants that are rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California.

Suitable habitat is present in and around the oxbow lake. Occurrences are recorded in the Butte Sink vicinity south of the Study Area in the Sanborn Slough USGS 7.5-minute quadrangle.

3.8.1.2 Woolly rose-mallow

Woolly rose mallow is a rhizomatous herbaceous perennial in the mallow family (Malvaceae). Flowering typically occurs June through September. General habitat requirements include shallow freshwater wetland and riparian backwaters. Typically, it is associated with open, freshwater marsh habitats along slow-moving waterways growing along with tule/bulrush (*Schoenoplectus* spp.). Its CRPR is 1B.2; plants that are rare, threatened, or endangered in California and elsewhere, and seriously threatened in California. Most known occurrences are very small.

Suitable habitat is present in and around the oxbow lake. Occurrence records are found approximately 3 miles northeast of the Study Area.

3.9 Special-status Animals

A list of special-status animals with potential to occur in the Study Area is provided as **Table 2**.
Listed species known to and with potential to occur in the Study Area include: valley elderberry longhorn beetle, Southern Distinct Population Segment (DPS) green sturgeon (*Acipenser medirostris)*, Central Valley steelhead (*Oncorhynchus mykiss irideus*), Chinook salmon (*Oncorhynchus tshawytscha*) – both winter-run (pop. 7) and spring-run (pop. 11) populations, Swainson's hawk , greater sandhill crane, western yellow-billed cuckoo, bank swallow (*Riparia riparia*), and tricolored blackbird (*Agelaius tricolor*).

Additional special-status wildlife species that also have potential to occur in the Study Area include: western pond turtle (*Emys [Actinemys] marmorata*), Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), Modesto song sparrow (*Melospiza melodia*) ("Modesto" population), Northern California ringtail (*Bassariscus astutus raptor*), and western red bat (*Lasiurus blossevillii*). A description of potentially occurring special-status animals is provided below.

3.9.1 Federal and State Listed Species

3.9.1.1 Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is an invertebrate that is federally listed as Threatened. Valley elderberry longhorn beetle depends on elderberry shrubs (*Sambucus* sp.) for their entire lifecycle and is, therefore, typically only found on or near these plants. The valley elderberry longhorn beetle is typically associated with riparian habitat. The species' range is restricted to the Central Valley, and occurrences are documented within and between Shasta and Fresno counties (USFWS 2009). To serve as host habitat, elderberry shrubs must have stems that are 1.0 inch or greater in diameter at ground level. Use of the plants is rarely apparent but may be observed by the presence of exit holes (USFWS 2009).

Adult beetles are active from March to June, which is their assumed breeding season. Adults are known to lay eggs in the crevices of bark of elderberry plants. Larvae hatch days later and bore into the stem of the elderberry shrubs, where they feed on the pith. Larvae pupate inside the stem and emerge as adults in the spring (USFWS 2009). Once ready to emerge, individuals cut an exit hole through the wood and bark of the elderberry plant. Adults may fly between elderberry plants (USFWS 2009).

During reconnaissance, elderberry shrubs were documented within riparian habitat along the edge of the Sacramento River (**Figure 9**). The locations of elderberry shrubs were mapped using a Global Positioning Unit, and flagging was added for field identification. Most points shown on **Figure 9** represent individual shrubs, but a few represent dense shrub clusters growing in rings that were not readily distinguishable. Typical associations included an open canopy near Northern California black walnut and lianas of pipestem and California wild grape. The mapped shrubs are generally mature with numerous stems greater than 6-inches wide at the base. Reconnaissance noted potential exit holes on a few older stems.

3.9.1.2 Green Sturgeon

The Southern DPS green sturgeon is an anadromous fish that is federally listed as a Threatened species. Southern DPS Green sturgeon is genetically distinct from and spawns in different locations than Northern DPS. Southern DPS green sturgeon includes populations originating from coastal watersheds south of the Eel River, with the only known spawning population occurring in the Sacramento River and its tributaries (Feather and Yuba Rivers). In the Sacramento River, green sturgeon spawn every 2-6 years, but typically every 3-4 years (NOAA 2015). The mainstem of the Sacramento River is the only river where spawning has been confirmed, and all life stages of Southern DPS green sturgeon are supported (NOAA 2009). Spawning occurs in cool sections of the upper Sacramento River, in fast, deep pools with small to medium sized gravel, cobble, or boulder substrates. In February, green sturgeon begin their spawning migrations from the ocean and spawn between March and July, with peak spawning between April and July (NOAA 2015). Spawning and migrations in the Sacramento River are triggered by increased flows. Eggs and larvae develop in freshwater, likely near natal waters, and juveniles may spend up to 4 years feeding in estuarine waters before dispersing into the ocean (NOAA 2009).

Locally, critical habitat is designated for this DPS in the Upper Sacramento, Feather, and Yuba Rivers, and the Sacramento-San Joaquin Delta. In riverine habitats, critical habitat for this species includes the stream channel laterally to the ordinary high water line, or the bankfull elevation – where the water leaves the channel to enter the floodplain every 1-2 years. In the Sacramento River, this incudes waters from the I-Street Bridge (Old Town Sacramento/West Sacramento) to Keswick Dam (Redding, CA) (NOAA 2009). Threats to the Southern DPS include impassable barriers (e.g. dams) and flood bypass systems, decreased flows, and increased temperatures, among others (NOAA 2015).

A portion of the Study Area is along the Sacramento River, which is within designated critical habitat for Southern DPS green sturgeon in California. The Sacramento River is also an important migration corridor for Southern DPS green sturgeon. Within the Study Area, riparian vegetation may provide cooling shade to streambanks, cover, and a potential source of invertebrate prey.

3.9.1.3 Central Valley Steelhead

Central Valley steelhead is federally listed as a Threatened species. Steelhead is the anadromous form of the species (the resident form is commonly known as rainbow trout). Historically, the Central Valley steelhead DPS spawned and reared in most of the accessible upstream reaches of Central Valley rivers and many of their tributaries. The current range of the Central Valley steelhead includes the Sacramento and San Joaquin Rivers and every major tributary downstream of dams. Central Valley steelhead enter fresh water from August through April, and enter tributaries once flows are high-enough. Steelhead spawn December through April, peaking from January through March, in small streams and tributaries with year-round cool, oxygenated water (NOAA 2016). The female digs a redd (gravel nest), typically at the end of a pool or riffle, in coarse gravel. Fry and juveniles initially use cool, shallow, protected streambank habitat where riffles are predominant and undercut banks and/or riparian vegetation provide cover. As they mature, and increase in size, juvenile steelhead shift to using runs, then pools. Aquatic and terrestrial insects and other small invertebrates serve as their primary food source. Juvenile steelhead typically spend 2 years in the river systems before emigrating to the ocean, and spend 2 to 4 years in marine waters before returning to their natal streams (NOAA 2014).

Locally, critical habitat is designated for Central Valley steelhead in the Sacramento River and its tributaries below Keswick Dam (Redding, CA) (NOAA 2009). Threats to the Central Valley steelhead include impassable barriers which block access to historic natal sites, decreased flows, increased temperatures, loss of spawning habitat, and loss of genetic integrity due to hatchery practices (NOAA 2014).

A portion of the Study Area is along the Sacramento River, which is within designated critical habitat for Central Valley steelhead DPS; the Study Area falls within the Colusa Basin Hydrologic Unit of critical habitat. The Sacramento River is also an important migration corridor for the Central Valley steelhead DPS. Within the Study Area, riparian vegetation may provide cooling shade to streambanks, cover, and a potential source of invertebrate prey for migrating steelhead. Additionally, the floodplain on the west side of the project levee provides off-channel habitat during high water events.

3.9.1.4 Chinook Salmon

Sacramento River winter-run Chinook salmon is federally and state listed as an Endangered species. Central Valley spring-run Chinook is federally listed and state listed as a Threatened species. Winter-run and spring-run populations of Chinook salmon are Evolutionary Significant Units (ESUs), or distinct populations that are delineated for conservation purposes. Chinook salmon are anadromous fish that currently inhabit rivers and streams tributary to the Sacramento River ecosystems, including the American, Yuba, and Feather Rivers. Chinook salmon include four variants whose life history patterns include migrating upstream during different times of the year. Sacramento winter-run Chinook consists of one population named for the timing of its spawning migration; winter-run enters the Delta and lower Sacramento River from December through July, peaking January through April. Winter-run Chinook must “hold” within suitable habitat upstream for several months while they become sexually mature, and then will spawn between late-April and mid-August, peaking in June and July.

Adult winter-run Chinook salmon need deep, cool, well-oxygenated pools for holding, and need swift, relatively shallow riffles with clean loose gravel, or along margins of deeper river reaches for spawning and laying eggs. Current spawning habitat for winter-run Chinook is limited primarily between the Red Bluff Diversion Dam and Keswick Dam (NOAA 2014). Winter-run Chinook may spend almost a year in the river before migrating downstream, between July peaking in September, and possibly continuing through March in dry years. Juvenile Chinook undergo smoltification downstream and in the Delta, where they forage in the estuarine waters primarily November through early May, and them emigrate from November through May (NOAA 2014). Terrestrial insects, small fish, and crustaceans are particularly important food for Chinook salmon. Once in the ocean, juvenile Chinook spend 2 to 4 years in marine waters before returning to natal waters to spawn (NOAA 2014).

Central Valley spring-run chinook populations begin spawning migration begins late January and early February, entering the Sacramento River between March and September, peaking in May and June. As with the winter-run Chinook, spring-run must also hold for several months in freshwater until spawning occurs in the Sacramento River and its tributaries mid-August to early October. Mill, Deer, and Butte Creeks are the remaining tributaries to the Sacramento River that sustain a population of wild spring-run Chinook salmon (Lindley et al. 2004). The habitat needs for the Central Valley spring-run Chinook are the same as those for Sacramento winter-run Chinook. Spring-run juvenile may spend up to 16 months in freshwater, but some migrate to the ocean within 8 months of hatching. Emigration occurs between December and April, but timing may differ by stream of origin and may be influenced by flow. For example, juveniles outmigration patterns in Butte, Mill, and Deer Creeks are similar, but differ from those in the Feather River, where outmigration occurs slightly earlier, possibly due to habitat limitations (NOAA 2014).

Locally, critical habitat is designated for Sacramento winter-run Chinook and Central Valley spring-run in the Sacramento River and its tributaries below Keswick Dam (Redding, CA) (NOAA 2014). Threats Chinook salmon include impassable barriers which block access to historic natal sites, decreased flows, increased temperatures, loss of gravel essential for spawning habitat, and vulnerability to catastrophic events due to a single or small population size (NOAA 2014). In recent news, returns of Central Valley spring-run Chinook to Mill and Deer Creeks were fewer than 25 adults. Butte Creek returns were at its lowest in more than 30 years, and adults further suffered impacts from a canal failure within its watershed. As a result, NOAA and CDFW are pursing urgent measures to safeguard the genetic heritage of this ESU, including capturing juvenile salmon from Mill, Deer, and Butte Creeks and rearing in captivity at a UC Davis facility for at least 2 years (CDFWb 2023).

A portion of the Study Area is along the Sacramento River, which is within designated critical habitat for Sacramento winter-run and Central Valley spring-run Chinook ESUs; the Study Area falls within the Colusa Basin Hydrologic Unit of critical habitat. Within the Study Area, riparian vegetation may provide cooling shade to streambanks, cover, and a potential source of invertebrate prey for migrating steelhead. Additionally, the floodplain on the west side of the project levee provides off-channel habitat during high water events. At the Willow Bend Preserve, which is immediately south of the Study Area on the east side of the project levee, River Partners' staff observed thousands of tiny particulate baby salmon when the former agricultural field was flooded by Sacramento River waters.

3.9.1.5 Swainson's Hawk

Swainson's hawk is state listed as a Threatened species. Most of today's California population resides throughout much of the Central Valley extending from Tehama County to Tulare and Kings counties. The

more heavily populated areas for this species are found within portions of Yolo, Solano, Sacramento, and San Joaquin counties regions that offer optimum foraging habitat and nesting opportunities. Certain agricultural crops and pastures provide optimum foraging for Swainson's hawks, especially crops that support large insects, such as grasshoppers, or small mammals such as meadow voles and mice. Crops or grazing regimes that expose prey to aerial predation is the preferred foraging habitat. Typical agricultural foraging areas include alfalfa, irrigated pasture, dryland pasture, and some low-growing row crops such as tomatoes, beans, beets, etc. Grain fields such as wheat and oats are also known to serve as important cover types for foraging Swainson's hawks after they are harvested. Swainson's hawks typically hunt in flight or from perches located near foraging areas. Sight is the primary means of detecting prey so low-growing vegetation or sparsely vegetated areas typically exposes prey. Typical flood irrigation can also benefit Swainson's hawks by forcing small mammals and insects to retreat from their hiding places.

The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico but also migrates as far as South America (Airola et al. 2019). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner et al. 1988-1990). In the Central Valley, Swainson's hawk nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas, and nest locations are usually in close proximity to suitable foraging habitats. Swainson's hawks return to their wintering grounds in late August or early September (Bloom and De Water 1994).

A major threat to Swainson's hawk is loss of native foraging and breeding grounds, which have rapidly been converted to urban or unsuitable uses for breeding Swainson's hawk pairs. Additional threats include use of insecticides, West Nile Virus, and stochastic events. Irregular rainfall patterns causing drought conditions may result in poor quality foraging habitat which, in turn, would negatively impact prey abundance and, ultimately, breeding success and survival (CDFW 2016).

Riparian forest habitats along the Sacramento River provide suitable nesting for Swainson's hawk. In the Study Area, mature trees within riparian woodland habitats provide suitable nesting habitat for this species. A CNDDB occurrence record overlapping with the Study Area noted nesting behavior in 2001 and 2003.

3.9.1.6 Greater Sandhill Crane

Greater sandhill crane is state listed as Threatened and a CDFW Fully Protected species. Within California, the Central Valley population breeds in Siskiyou, Modoc, and Lassen counties and in Sierra Valley within Shasta, Plumas, and Sierra counties, and winters in the Sacramento and San Joaquin Valleys (Zeiner et al. 1988-1990). Greater sandhill crane inhabits healthy, undisturbed wetland habitats, nesting in dense emergent marsh vegetation. During winter, sandhill cranes are generally found in agricultural regions with extensive cereal and other small grain crops. While most foraging is observed in agricultural fields, grasslands and seasonal wetlands are also noted foraging areas. Typically, nearby flooded fields or open water features are used for roosting and loafing (Zeiner et al. 1988-1990).

Since being listed, recovery efforts by agencies and non-agency partners have increased farmland being managed for sandhill cranes; however, threats to greater sandhill crane remain. Some of these threats include conversion of wetlands to agricultural crops, and conversion of agricultural lands to less suitable crops, upon which cranes rely in the winter; also, loss of foraging, loafing, and roosting habitats, especially on private lands (CDFW 1994).

In the Study Area, fallow field habitats may provide migration and winter foraging opportunities for greater sandhill crane. Within the Gray Lodge Wildlife Area, approximately 9 miles east of the Study Area, field biologists observed sandhill cranes wading in the wetlands and flying overhead.

3.9.1.7 Western Yellow-billed Cuckoo

The western yellow-billed cuckoo is a federally listed Threatened and state listed Endangered species. The yellow-billed cuckoo is a migrant that breeds in North America and winters in South America, primarily south of the Amazon Basin. Historically, yellow-billed cuckoo's breeding range included much of North America, from southeastern and western Canada to the Greater Antilles, in the Caribbean, and northern Mexico. The division of the yellow-billed cuckoo into eastern and western subspecies was first based on morphological differences (particularly size) described from specimens. In later studies, genetic data collected from yellow-billed cuckoos failed to conclusively determine if the western yellow-billed cuckoo was distinguishable. However, USFWS recognizes that the western yellow-billed cuckoo is at least *distinguishable* at the subspecies level, even if there is not enough support in the literature to recognize it as a subspecies (USFWS 2013). For the purposes of conservation, the western yellow-billed cuckoo is considered a DPS, and occurring west of the Rocky Mountains, the watershed divide between the Rio Grande and Pecos Rivers, and the Chihuahuan Desert in Mexico. Also, the western yellow-billed cuckoo is generally larger and have longer wings, tails, and bills.

In California, the breeding range for western yellow-billed cuckoo includes suitable habitat within the broad, lower flood-bottoms of river systems such as the Sacramento and San Joaquin Rivers (USFWS 2013). Western yellow-billed cuckoos require deciduous riparian thickets or forests with dense, low, or understory cover by slow-moving watercourses. This species generally selects these habitats for nesting only if they are present in contiguous stands of at least 25 acres and are 300 feet in width (Gaines 1974). Smaller or narrower stands of suitable habitat are rarely used (SRCAF 2003). The yellow-billed cuckoo prefers to nest in willows, but may also use other trees, including alder, cottonwood, box elder, sycamore, and walnut, all of which occur along the Sacramento River. Although once very common along the Sacramento River, populations have drastically declined; in California, it is estimated that yellow-billed cuckoos have declined more than 99 percent from historical levels (USFWS 2013).

Critical habitat has been designated: from the city of Red Bluff, in Tehama County, continuing downstream through Butte and Glenn Counties, to Colusa, in Colusa County. Threats to western yellow-billed cuckoo include habitat destruction, modification, and degradation from various activities, including conversion to agricultural uses, changes to river flow, and urban development. Other habitat-related factors include increased wildfire, invasive species, and fragmentation. Because populations of western yellow-billed cuckoo are isolated and small, this species is more susceptible to further declines and chance events (USFWS 2013).

Ongoing surveys for this species have documented western yellow-billed cuckoos present north and just south of the Study Area (as recent as 2013). Restoration of riparian woodland, particularly adjacent to existing habitat may be critical to the persistence of this species. Research documented western yellow-billed cuckoos in restored riparian woodland as soon as four years after planting (Dettling et al. 2014). CNDDB occurrences are recorded in the vicinity of the Study Area.

3.9.1.8 Bank Swallow

Bank swallow is a state listed Threatened species. A migratory species, the California populations winter in Central and South America and breed in the northern and central regions of the state, where suitable nesting habitat exists. Bank swallow is primarily a riparian species throughout its breeding range. In California, current bank swallow populations are focused in riparian scrub and woodland along the Sacramento and Feather Rivers, where approximately 70 to 90 percent of known bank swallow populations are estimated to occur. Bank swallow populations along the central and southern coast, and other historic population locations, have been extirpated.

Bank swallow arrive in California beginning in March, and lay eggs mainly between mid-April and mid-May. Bank swallow nests in colonies in eroded vertical or near-vertical banks, bluffs, or cliffs with friable alluvial soils within river systems. Males dig nesting holes where soils are fine-textured or sandy. The dynamic processes of the river erodes banks and bluffs, both creating new vertical cliff faces and eroding away old nest burrows. During the breeding season, the bank swallow forages for mainly flying or jumping insects over open water, riparian woodland, grassland, brushland, wetlands, and agricultural fields; bank swallow may forage in similar habitats at wintering sites (BSTAC 2013).

Because bank swallow is directly tied to natural river processes to provide habitat, the loss of those processes is the most important overall threat to bank swallow. Land conversion, bank stabilization, and flood management activities, and water supply operations have caused loss of nesting and foraging habitat for, as well as direct mortality to bank swallow by removing or inundating habitat, or preventing the river from moving laterally and eroding the banks (BSTAC 2013).

CDDDB occurrences include 13 records within 5 miles of the Study Area, and almost half of these occurrences have been lost due to riverbank protection efforts. A single occurrence record mapped at RM 160, left bank, in 1998 corresponds closely with the location of the Study Area. Ongoing surveys between 1986 and 2009 noted a single breeding colony in 1998. Based on accessible viewpoints from the land, the bank of the Sacramento River within the Study Area is well vegetated and may not be currently suitable for nesting; however, future flood events may re-establish suitable nesting substrate.

3.9.1.9 Tricolored Blackbird

Tricolored blackbird is state listed as a Threatened species. These colonial birds nest in protected habitats such as tules and cattails within emergent marsh, and in willow and bramble thickets. Mustard and thistle may also be used for nesting, and in some areas, tricolored blackbirds will nest in agricultural stands of wheat or other grains. Tricolored blackbirds require a source of open water within one-third of a mile (half a kilometer) of the nesting colony (Natomas Basin Conservancy 2021). Foraging grounds contain an abundance of insect prey during the breeding season and consist mainly of pond margins, irrigated pastures, flooded rice fields, dairies, and croplands.

Tricolored blackbird nest in dense colonies from mid-March to early July. During the breeding season, adults will forage up to eight miles away from the colony (Natomas Basin Conservancy 2021). Central Valley tricolored blackbirds disperse widely in late summer to find food, remaining in nomadic foraging flocks throughout winter. In March and April, tricolored blackbirds move to their initial breeding territories in Sacramento County and the San Joaquin Valley. Tricolors are itinerant breeders and may nest sequentially in more than one location within the same breeding season. As with many songbirds, tricolored blackbirds depend heavily upon insects during the breeding season, consuming beetles, grasshoppers, weevils, and the larvae of aquatic emergent invertebrates. The bulk of the diet shifts to weed and grass seeds once the breeding season has passed (Natomas Basin Conservancy 2021).

Threats to tri-colored blackbird include land conversion of nesting and foraging habitats to intensive agriculture and development; predation by black-crowned night-herons, coyotes, racoons, and ravens; mowing of active nesting colonies in grain fields; and fluctuating water levels (Churchwell et al. 2005).

Within the Study Area, riparian habitats may be suitable for nesting and fallow field habitats have potential to support foraging. Several CNDDB occurrences are recorded in the vicinity of the Study Area; however, records are from the 1930's and 1970's and more recent surveys did not detect breeding colonies.

3.9.2 Other Special-Status Animal Species

3.9.2.1 Western Pond Turtle

Western pond turtle is a CDFW Species of Special Concern. Based on morphological and genetic analyses, western pond turtle is split into two subspecies: northwestern pond turtle and southwestern pond turtle. Recently USFWS proposed that both northwestern and northeastern pond turtle subspecies be listed as a Threatened species (USFWS 2023). The current range of northwestern pond turtle in California includes areas of the Coast Range from the Oregon-California border down to northern Monterey County, the lower elevation and foothills of the southern Cascades and Sierra Nevada Mountains, and areas within the Sacramento and San Joaquin Valleys (USFWS 2023). Western pond turtle has been observed in many of the Central Valley refuges, including Colusa, Sutter, Delevan, and Sacramento National Wildlife Refuges. The Sacramento River may also provide habitat for western pond turtle (Germano 2021).

Western pond turtle occurs in a wide range of aquatic habitats, including rivers, streams, lakes, wetlands, marshes, vernal pools, reservoirs, irrigation ditches, settling ponds, and estuaries with tidal influence. Western pond turtle prefers slow-moving or standing water with features such as mud, logs, rocks, that provide both basking substrate and underwater refuge. Submerged vegetation and undercut banks also provide underwater cover. Nests are constructed in spring or early summer along sandy banks or in adjacent uplands, depending on site suitability. Upland nest habitats often are sparsely vegetated, with short grasses and forbs, and little or no canopy cover to allow for exposure to direct sunlight (USFWS 2023). Eggs may be laid from March through August subject to local conditions (Zeiner et al. 1988-1990). Upland overwintering habitat usually occurs above the high water elevation of the aquatic habitat and beyond the riparian zone; western pond turtle in the Central Valley generally overwinter where there is direct exposure to sunlight for part of the day. Suitable habitat for western pond turtle is potentially present within the Sacramento River, the oxbow lake feature, and riparian areas; protection and enhancement of this habitat would benefit western pond turtle.

3.9.2.2 Coopers Hawk

Cooper's hawk is a CDFW Watch List species and protected under the U.S. Migratory Bird Treaty Act. Cooper's hawk requires woodland or forested habitat to forage and nest. It is known to hunt in broken woodland and along habitat edges; it catches prey in air, on ground, and in vegetation. This raptor breeds from March through August with peak activity May through July. Large trees within the Study Area provide suitable nesting sites; riparian woodland, fallow fields, and habitat edges provide foraging habitat.

3.9.2.3 White-tailed Kite

The white-tailed kite is a CDFW Fully Protected raptor. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Unlike other raptors, white-tailed kites are communal and often roost and occasionally nest together; therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. The Study Area provides potential foraging and nesting habitat for white-tailed kite. Suitable habitat for this species occurs in fallow fields and riparian areas.

3.9.2.4 Yellow-breasted chat

Yellow-breasted chat is a CDFW Species of Special Concern. This migratory species is a summer resident and nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry, and grape vines. This uncommon migrant in California is locally known to occur in Shasta, Colusa, Butte, and Sutter counties, and is more "common" along the upper Sacramento River in Colusa County. Nesting yellow-breasted chat occupy early successional riparian habitats with a well-developed shrub layer and an open canopy. The Study Area provides potential foraging and nesting habitat for yellow-breasted chat. Suitable habitat for this species occurs in fallow fields and riparian areas.

3.9.2.5 Loggerhead Shrike

Loggerhead shrike is a CDFW Species of Special Concern. It is associated with open habitats that have scattered woody vegetation and potential perches such as fences, posts, and utility lines. In California, loggerhead shrikes breed mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. The nesting season extends from March through June (Yosef 1996). Within the Study Area, small trees and shrubs provide nesting opportunities and fallow fields are potential foraging habitats.

3.9.2.6 Modesto Song Sparrow

The Modesto subspecies population of song sparrow is a CDFW Species of Special Concern. This population is a year-round resident and is typically found from Sacramento Valley through the Delta to the northern San Joaquin Valley. The Butte Sink area is noted for locally abundant numbers of this species. The song sparrow breeds from mid-March through early August (Shuford and Gardali 2008). The species has an affinity for emergent freshwater marshes, particularly those dominated by tule and cattails as well as willow thickets. Primary habitat requirements include moderately dense vegetation for nest sites, a source of standing or running water, semi-open canopies, and exposed ground or leaf litter for foraging (Shuford and Gardali 2008). Riparian areas within the Study Area provide habitat for the Modesto song sparrow. Song sparrow was heard during reconnaissance.

3.9.2.7 Northern California Ringtail

Northern California ringtail is a CDFW Species of Special Concern that nests in rock and tree cavities, and abandoned burrows or woodrat nests in riparian forests, chaparral, brushlands, oak woodlands, and rocky hillsides. The Northern California ringtail is known to occur in habitats within the Sierra Nevada, Coast Ranges, and Central Valley; and upper and middle portions of the Sacramento River, Feather River, and Bobelaine Sanctuary. Riparian habitat within the Study Area provide potential nesting habitat for this species; field biologists observed cavities in tall mature trees in riparian woodland in the Study Area.

3.9.2.8 Western Red Bat

Western red bat is a State Species of Special Concern. Western red bat is locally common in certain areas of California. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. The species feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. They roost primarily in trees, less often in shrubs. Roost sites are often in edge habitats adjacent to streams, fields, or urban areas. Family groups roost together, and nursery colonies are found with many females and their young. Mature trees within the Study Area provide potential roosting habitat for this species and fallow field habitats may be used for foraging.

3.10 Potentially Jurisdictional Aquatic Resources

Assessment of potentially jurisdictional aquatic resources is provided for planning and informational purposes only. The biological resources study did not include a formal delineation. Based on initial reconnaissance, non-wetland waters may include the Sacramento River's floodplain on the east side of the project levee and potentially jurisdictional wetlands include freshwater emergent wetland and riparian scrub-shrub associated with the oxbow lake (**Figure 9**). The limits of the resources shown in **Figure 9** are representative and characterize general Study Area conditions.

4 CONCLUSIONS

Much of the Study Area has been modified for farming purposes, and several opportunities exist to enhance riparian and wetland habitats for the benefit of numerous special-status and common species. The Study Area's location within the Sacramento River Conservation Area, presence of mature riparian forests and elderberry shrubs, oxbow lake feature, and opportunities for enhancements of habitat for valley elderberry longhorn beetle, imperiled fisheries, western yellow-billed cuckoo, Swainson's hawk, bank swallow, and tri-colored blackbird have significant natural resource value. The existing riparian and riverine habitats are highly valuable for wildlife and represent an important movement corridor. The presence of these unique and rare biological resources coupled with its prime location near other protected lands along the Sacramento River make the Study Area highly suitable for habitat enhancement and conservation purposes.

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Tables

Table 1. Special-status Plants with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/ State ESA/CRPR)	Habitat	Blooming Period	Suitability
Bent-flowered fiddleneck *Amsinckia lunaris*	--/--/1B.2	Annual herb found in cismontane woodland, coastal bluff scrub, valley and foothill grassland.	March-June	**Not Suitable**. Annual grassland in the Study Area is ruderal.
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	--/--/1B.1	Annual herb found in vernally mesic (wet) meadows and seeps, and subalkaline flats in valley and foothill grassland.	April-May	**Not Suitable**. Wet meadow and grassland habitat is absent from the Study Area.
Heartscale *Atriplex cordulata* var. *cordulata*	--/--/1B.2	Annual herb found in chenopod scrub, meadows and seeps, and valley and foothill grassland (sandy).	April-October	**Not Suitable.** Alkaline habitat not present.
Brittlescale *Atriplex depressa*	--/--/1B.2	Annual herb found in areas of alkaline and clay chenopod scrub, meadows and seeps, playas, valley foothill grassland, and vernal pools.	April-October	**Not Suitable.** Alkaline grassland habitat not present.
Vernal pool smallscale *Atriplex persistens*	--/--/1B.2	Annual herb found in alkaline vernal pools.	June-October	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
Watershield *Brasenia schreberi*	--/--/2B.3	Aquatic perennial rhizomatous herb found in marshes and swamps.	June-September	**Not Suitable.** Oxbow lake within Study Area does not provide permanent aquatic habitat.
Palmate-bracted bird's-beak *Chloropyron palmatum*	FE/SE/1B.1	Annual herb (hemiparasitic) associated with wetlands in chenopod scrub and valley and foothill grassland.	May-October	**Not Suitable.** Habitat not present.
Peruvian dodder *Cuscuta obtusiflora* var. *glandulosa*	--/--/2B.2	Annual parasitic vine found in freshwater marshes and swamps. Associated with plants in the genus: *Alternanthera*, *Dalea*, *Lythrum*, *Polygonum*, and *Xanthium*	July-October	**Suitable.** Oxbow feature in the Study Area provides suitable habitat for this species. Recorded in the Butte Sink area in the 1940's.

Table 1. Special-status Plants with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/ State ESA/CRPR)	Habitat	Blooming Period	Suitability
Hoovers spurge *Euphorbia hooveri*	FT/--/1B.2	Annual herb found in vernal pools.	July-October	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
San Joaquin spearscale *Extriplex [Atriplex] joaquiniana*	--/--/1B.2	Annual herb found in alkaline areas of chenopod scrub, meadows and seeps, playas, and valley and foothill grassland.	April-October	**Not Suitable.** Alkaline grassland habitat not present.
Water star-grass *Heteranthera dubia*	--/--/2B.2	Aquatic perennial herb found in alkaline, still or slow-moving, and usually eutrophic water.	July-October	**Not Suitable.** Oxbow lake within Study Area does not provide permanent aquatic habitat.
Woolly rose-mallow *Hibiscus lasiocarpos* var. *occidentalis*	--/--/1B.2	Perennial rhizomatous herb (emergent) found in freshwater marshes and swamps within the Sacramento Valley and North Delta (backwater and riverbanks; often found in riprap along levees).	June-September	**Suitable**. May occur in marsh habitat along the oxbow lake edges within the Study Area.
Coulters goldfields *Lasthenia glabrata* ssp. *coulteri*	--/--/1B.1	Annual herb found in vernal pools, playas, and marshes and swamps (coastal salt).	February-June	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	--/--/1B.2	Annual herb found in valley and foothill grassland (alkaline flats).	March-May	**Not Suitable.** Alkaline grassland habitat not present.
Little mousetail *Myosurus minimus* ssp. *apus*	--/--/3.1	Annual herb found in alkaline vernal pools, and valley and foothill grassland.	March-June	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
Colusa grass *Neostapfia colusana*	FE/SE/1B.1	Annual herb found in vernal pools with adobe clay.	May-August	**Not Suitable**. Vernal pool habitat is absent from the Study Area.

Table 1. Special-status Plants with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/ State ESA/CRPR)	Habitat	Blooming Period	Suitability
Hairy orcutt grass *Orcuttia pilosa*	FE/SE/1B.1	Annual herb found in vernal pools.	May-September	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
California alkali grass *Puccinellia simplex*	--/--/1B.2	Annual herb found in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pool habitats that may be alkaline, on flats, in sinks, on lake margins, and that may be vernally mesic (wet).	March-May	**Not Suitable**. Vernal pool habitat is absent from the Study Area.
Greene's tuctoria *Tuctoria greenei*	FE/SR/1B.1	Annual herb found in vernal pools.	May-July (uncommon - September)	**Not Suitable**. Vernal pool habitat is absent from the Study Area.

Federal Status:

- FE = Federally Endangered
- FT = Federally Threatened

State Status:

- SE = State Endangered
- SR = State Rare

CRPR Categories:

- 1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California.
- 1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California.
- 2B.1 = Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California.
- 2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California.
- 2B.3 = Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California.
- 4.2 = Plants of limited distribution; fairly threatened in California.

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Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
Invertebrates				
Valley elderberry longhorn beetle *Desmocerus californicus dimporhus*	FT/--	Occurs only in the Central Valley of California (<3,000'), in association with blue elderberry (*Sambucus mexicana*). Associated with shrubs that have 1-inch diameter or greater sized stems. Prefers to lay eggs in elderberries 2-8 inches in diameter.	Adults emerge in spring until June. Exit holes visible year – round.	**Suitable.** Numerous elderberry shrubs were observed in the Study Area. Several CNDDB occurrences are within a 5-mile radius of the Study Area.
Monarch butterfly *Danaus plexippus*	FC/--	Lays eggs on obligate milkweed host plants (primarily *Asclepias* ssp. California overwintering habitat including eucalyptus, Monterey pines, and Monterey cypresses. Some migratory populations leave California in the fall and return in the spring to lay eggs. Larva only feed on milkweed, while adults can feed on a variety of nectar plants.	Active in summer, on milkweed (larva and adults), or nectar flowers (adults)	**Not Suitable.** No milkweed observed in the Study Area, and pesticide use and disturbance likely eliminate any foraging habitat from the Study Area.
Conservancy fairy shrimp *Branchinecta conservation*	FE/--	Occurs in the Central Valley from Merced County north to Tehama County; one isolated population in Ventura County.	Occurs in large turbid vernal pools, or playa pools	**Not Suitable.** Vernal pool habitat is absent from the Study Area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in static rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassy swale, earth slump, or basalt-flow depression pools.	Winter when pools are inundated, and temperatures are cool	**Not Suitable.** Vernal pool habitat is absent from the Study Area.

Table 2. Special-status Animals with Potential to Occur				
Common Name **Scientific Name**	**Status (Federal ESA/State ESA [CDFW])**	**Habitat**	**Identification or Survey Period**	**Suitability**
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud- bottomed and highly turbid.	Winter when pools are inundated, and temperatures are cool	**Not Suitable.** Vernal pool habitat is absent from the Study Area.
Amphibians/Reptiles				
Giant garter snake *Thamnophis gigas*	FT/ST	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, preferably with aquatic vegetative cover. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March).	Active mid-March through October	**Not Suitable.** Flooding of the sloughs and oxbow lake is too intermittent to provide suitable aquatic habitat in the Study Area. Nearest known occurrences are within 4 miles of the Study Area.
Western pond turtle *Emys (Actinemys) marmorata, E. (A.) pallida*	--/-- (SSC)	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their adjacent uplands.	Active March – October	**Suitable.** The Sacramento River and adjacent upland in the Study Area may provide habitat for this species. No known occurrences within 5 miles of the Study Area.

Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
Fish				
Green sturgeon – Southern DPS *Acipenser medirostris pop. 1*	FT/--	Prefers cool sections of mainstem rivers in deep pools for spawning, with small to medium-sized substrate, including sand, gravel, cobbles, or boulders. Locally, critical habitat is designated for this ESU in the Upper Sacramento, Feather, and Yuba Rivers, and the Delta.	Spawns March – July	**Suitable**. The Sacramento River and its floodplain provide habitat for this species. Study Area is within critical habitat for this ESU (Colusa Basin Hydrologic Unit). Nearest known occurrence within or adjacent to the Study Area.
Steelhead -- Central Valley DPS *Oncorhynchus mykiss irideus, pop. 11*	FT/--	Inhabits rivers and streams that are tributary to the Sacramento and San Joaquin Rivers and Delta ecosystems, which are designated critical habitat for this ESU.	Spawns December – April	**Suitable**. The Sacramento River and its floodplain provide habitat for this species. Study Area is within critical habitat for this ESU (Colusa Basin Hydrologic Unit), and there are known occurrences within the Study Area.
Chinook salmon – Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 11*	FT/ST	Inhabits rivers and streams tributary to the Sacramento River ecosystems, which are designated critical habitat for this ESU. In 2018, monitoring efforts recorded this ESU returning to Butte Creek.	Spawns mid-August – early October	**Suitable**. The Sacramento River and its floodplain provide habitat for this species. Study Area is within critical habitat for this ESU (Colusa Basin Hydrologic Unit). Known occurrences within the Study Area.
Chinook salmon – Central Valley fall / late fall-run ESU *Oncorhynchys tshawytscha pop. 13*	--/--(SSC)	Inhabits rivers and streams tributary to the Sacramento and San Joaquin River ecosystems and is limited by dams on some tributaries.	Spawns early October – late December (fall-run); January to mid-April (late fall-run)	**Suitable**. The Sacramento River and its floodplain provide habitat for this species, and there are known occurrences within the Study Area.

Table 2. Special-status Animals with Potential to Occur				
Common Name **Scientific Name**	**Status (Federal ESA/State ESA [CDFW])**	**Habitat**	**Identification or Survey Period**	**Suitability**
Chinook salmon – Sacramento River winter-run ESU *Oncorhynchus tshawytscha pop. 7*	FE/FE	Inhabits the Delta, and rivers and streams tributary to the Sacramento River ecosystem. Critical habitat for this ESU includes these habitats downstream of Keswick Dam (Redding, CA).	Spawns late April to mid-August	**Suitable**. The Sacramento River and its floodplain provide habitat for this species. Study Area is within critical habitat for this ESU. Known occurrences within the Study Area.
Birds				
Golden eagle *Aquila chrysaetos*	--/--(FP|WL)	Nests on steep cliffs or in large trees, and uses forest, canyon, shrubland, grassland, and oak woodland habitats. Breeds late January to August, and is found year-round in much of California, except where it only winters in the Central Valley and the Inland Deserts Regions.	Winter	**Not suitable.** Potential nesting habitat present in tall trees within the riparian forest; however, the potential for nesting is low due to human disturbances, such as agricultural activities, in and in the vicinity of the Study Area.
Swainson's hawk *Buteo swainsonii*	--/ST	Nests peripherally to valley riparian systems, lone trees, or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most used nest trees in the Central Valley.	March – October	**Suitable.** Potential nesting habitat present in tall trees within riparian forest, and foraging habitat present in fields within and in the vicinity of the Study Area. Known occurrences within 5 miles; the nearest occurrence is within or adjacent to the Study Area.
Northern harrier *Circus hudsonius*	--/-- (SSC)	Uses open grasslands, meadows, marshes, and seasonal and agricultural wetlands.	Year-round	**Not suitable**. Potential foraging habitat within grassland or crops adjacent to the Study Area, but low potential to occur due to ruderal areas.

Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
White-tailed kite *Elanus leucurus*	--/-- (FP)	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands or agricultural fields for foraging.	Year-round	**Suitable.** Tall trees within the riparian forest and agricultural fields/grasslands may provide nesting and foraging habitat within the Study Area. No known occurrences are within 5 miles.
Bald eagle *Halieaeetus leucocephalus*	Delisted/SE (FP)	Nests usually within 1 mile of water, in large, old-growth or dominant live trees with open branches.	January to August (breeding)	**Not suitable.** Potential nesting habitat present in tall trees within the riparian forest; however, the potential for nesting is low due to human disturbances, such as agricultural activities, in and in the vicinity of the Study Area.
Cooper's hawk *Accipiter cooperii*	--/-- (WL)	Mixed deciduous forests and open woodlands, riparian woodlands, open and pinyon woodlands, and forested mountainous regions and now also nests in many cities.	Year-round	**Suitable**. Riparian habitat within the Study Area may provide nesting habitat. No known occurrences within 5 miles of the Study Area.
Greater sandhill crane *Antigone [Grus] canadensis tabida*	--/ST (FP)	Nests in shallow wetland habitats in northeastern California; winters in the Central Valley.	September – February	**Suitable**. Foraging opportunities may be present. Observed approximately 9 miles ESE of the Study Area, within the Gray Lodge Wildlife Refuge.

Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT/SE	Requires wide swaths of mature riparian habitat, particularly in willows and cottonwoods, and with a lower story of blackberry, nettles, or wild grape. Occurs along the broad, lower flood-bottoms of larger river systems, such as the Sacramento River, along which critical habitat has been designated: from the city of Red Bluff, in Tehama County, continuing downstream through Butte and Glenn Counties, to Colusa, in Colusa County.	May – September (breeding)	**Suitable.** The riparian forest adjacent to the Sacramento River and within the Study Area may provide habitat for this species. This species is known to occur in suitable habitats along the Sacramento River. The Study Area is within critical habitat designated for this species. Nearest known occurrences are approximately within 1 mile of the Study Area; however, human disturbances (agricultural activity) may limit suitability.
Bank swallow *Riparia riparia*	--/ST	Occurs in riparian scrub and woodland. Nests in colonies in vertical banks or cliffs situated near streams, rivers, lakes, or ocean. Digs nesting hole where soils are fine-textured or sandy. During the breeding season, forages over riparian, and uses grassland, brushland, wetlands, and agricultural fields during migration. Known to occur along the Sacramento and Feather Rivers in the northern Central Valley.	March – early August; May-July (breeding)	**Suitable.** Riparian forest and steep banks along the Sacramento River within the Study Area may provide suitable habitat for this species. Nearest known occurrences are within or adjacent to the Study Area.
Tricolored blackbird *Agelaius tricolor*	--/ST	Nests in dense vegetation such as blackberry, cattail, tule, bulrush, sedge, willow, or wild rose within freshwater marshes. Nests in large colonies of at least 50 pairs (up to thousands of individuals).	Year-round; mid-March to mid-July (breeding)	**Suitable**. Blackberry and willow adjacent to freshwater marsh in Study Area may provide limited habitat, and flooding of marsh is intermittent in the Study Area. Nearest known occurrence is within 2 miles of the Study Area.

Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	--/-- (SSC)	Nests in tall emergent vegetation, such as tule and cattail, in marshes with areas of open, deep water, and often located on the edges of large ponds and lakes. Known to nest in refuges in Colusa, Glenn, Butte, and Sutter Counties. Forages in adjacent uplands and agricultural fields.	April to early October; mid-April to late July (breeding)	**Not Suitable.** Ponding is seasonal within the Study Area. No known occurrences within 5 miles of the Study Area.
Yellow-breasted chat *Icteria virens*	--/-- (SSC)	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines. Uncommon migrant in California and, locally, is known to occur in Shasta, Colusa, Butte, and Sutter Counties. More "common" along the Upper Sacramento River in Colusa County.	Late March to late September; late April to late September (breeding)	**Suitable**. Riparian vegetation within Study Area provides habitat for this species. No known occurrences within 5 miles of the Study Area.
Loggerhead shrike *Lanius ludovicianus*	--/-- (SSC)	Open habitats with scattered shrubs, trees, posts, fences, utility lines, and other perches.	Year-round	**Suitable**. Fallow fields present and perches available. No known occurrences within 5 miles of the Study Area.
Osprey *Pandion haliaetus*	--/-- (WL)	Nests high up large snags and open-branched trees, near large bodies of water. In California, known to breed around inland lakes, reservoirs, and river systems. Forages in open, clear water for fish.	Year-round	**Suitable.** Tall trees within the riparian forest and adjacent Sacramento River provide nesting habitat with the river providing suitable foraging habitat. Species is known to occur adjacent to the Study Area.

Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
Song sparrow (Modesto population) *Melospiza melodia, pop. 1*	--/-- (SSC)	Prefers emergent freshwater marshes dominated by tule, cattail, and riparian willow thickets. Nests in riparian forests of valley oak, with an understory of blackberry; along vegetated irrigation canals and levees; and in recently planted valley oak restoration sites. Known to occur in the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley.	Year-round; mid-March to early August (breeding)	**Suitable.** Marginal breeding habitat present along limited edges of the oxbow pond, and within areas of riparian forest with dense understory. No known occurrences within 5 miles of the Study Area.
Burrowing owl *Athene cunicularia*	--/-- (SSC)	Nests and forages in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. May also nest on human-made features, such as levee slopes and railroad berms with short vegetation. Nests underground, and typically uses California ground squirrel burrows, although may use other mammal burrows. During the non-breeding season, may also use rocky crevices, pipes, and small caves.	March-May (breeding)	**Not Suitable.** The Study Area lacks burrows complexes in open areas. No known occurrences within 5 miles of the Study Area.
Mammals				
North American porcupine *Erethizon dorsatum*	--/--	In California, most common in montane conifer and wet meadow habitats. Found in the Coast Ranges, Klamath Mountains, southern Cascades, Modoc Plateau, Sierra Nevada, and Transverse Ranges. Forages on grasses, forbs, shrubs, wetland plants, and some agricultural crops (spring/summer); and twigs, bark, and the cambium of hardwood and conifers trees (winter).	Year-round	**Suitable.** Limited habitat present in Study Area. Occurrence recorded in riparian scrub in the Sacramento River National Wildlife Refuge approximately 3.5 miles north of the Study Area.

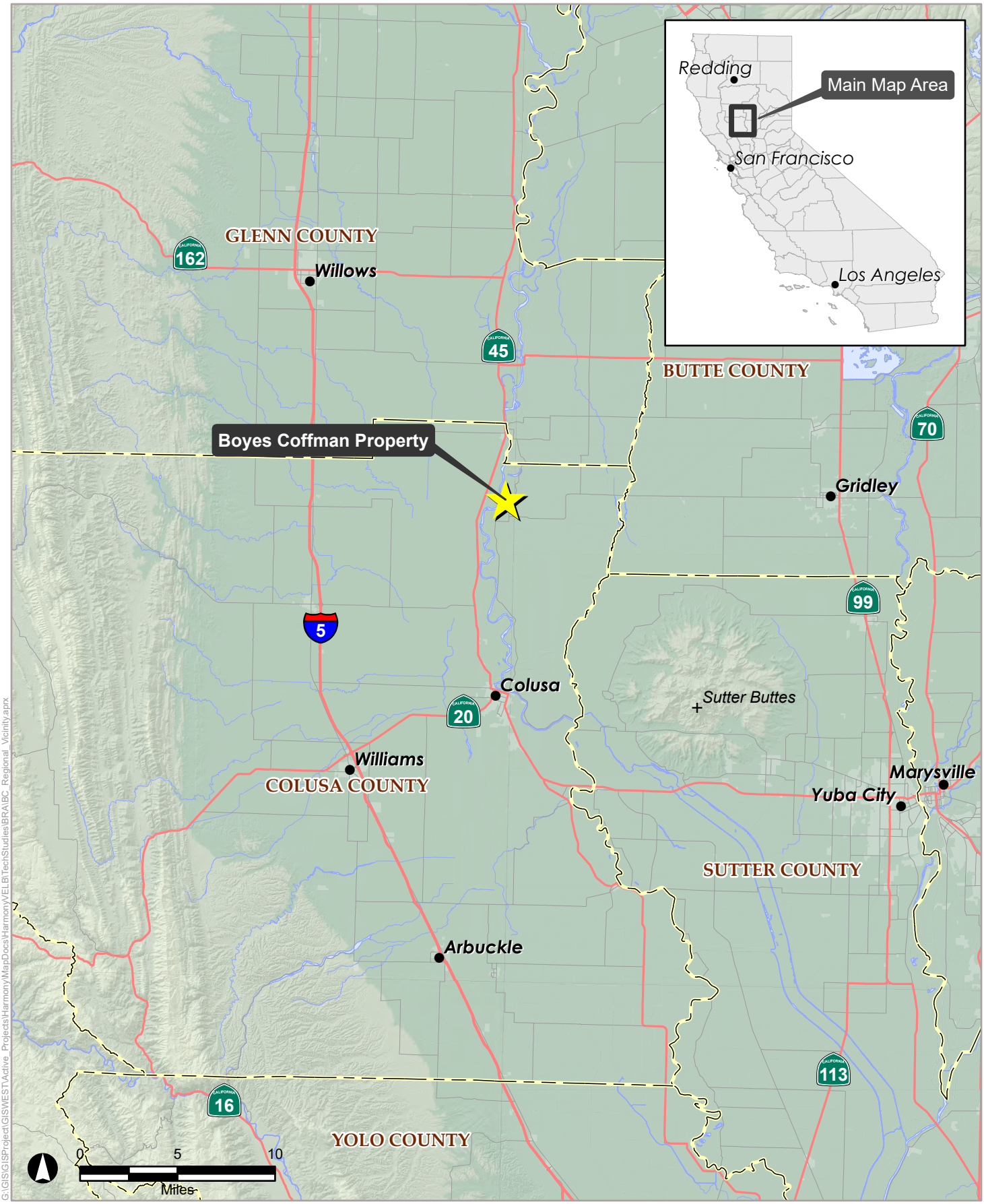
Table 2. Special-status Animals with Potential to Occur				
Common Name Scientific Name	Status (Federal ESA/State ESA [CDFW])	Habitat	Identification or Survey Period	Suitability
American badger *Taxidea taxus*	--/-- (SSC)	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Digs burrows in friable soils, in open, uncultivated ground where there is sufficient food, primarily burrowing rodents, such as mice, ground squirrels, and gophers.	Year-round	**Not Suitable**. Requires open, uncultivated land with friable soil, which is absent within the Study Area.
Northern California ringtail *Bassariscus astutuus raptor*	--/-- (FP)	Nests in rock and tree cavities, and abandoned burrows or woodrat nests in riparian forests, chaparral, brushlands, oak woodlands, and rocky hillsides. Known to occur in habitats within the Sierra Nevada, Coast Ranges, and Central Valley; and upper and middle portions of the Sacramento River, Feather River, and Bobelaine Sanctuary.	Year-round	**Suitable.** Although habitat is present, the potential for the species to occur is low, due to human activity and disturbance within the Study Area. No known occurrences within 5 miles of the Study Area.
Western red bat *Lasiurus blossevillii*	--/-- (SSC)	Roosts primarily in trees, 2-40 ft above ground, and inhabits cismontane woodland, lower montane coniferous forest, riparian forest, and riparian woodland. Prefers habitat edges and mosaics, with trees that are protected from above and open below, with open areas for foraging.	Year-round	**Suitable**. Large riparian trees for roosting, and insect prey are present within the Study Area. No known occurrences within 5 miles of the Study Area.

Federal:
FT = Federal Threatened;
FC = Federal Candidate;
EFH = Essential Fish Habitat

State:
SE = State Endangered;
ST = State Threatened;
SC = State Candidate

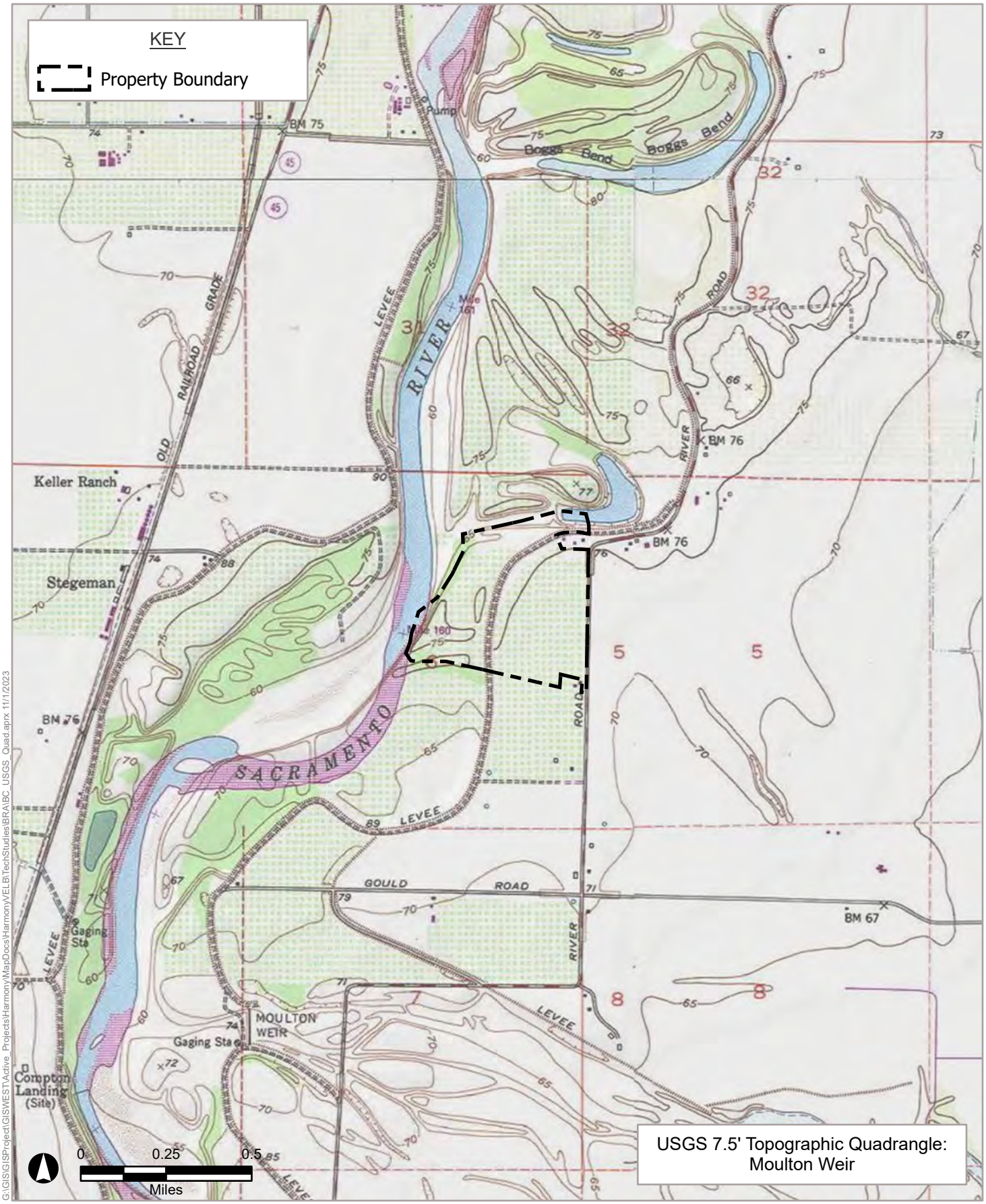
CDFW:
SSC = Species of Special Concern;
FP = Fully Protected;
WL= Watch List

Figures



Westervelt ECOLOGICAL SERVICES

Figure 1
Regional Vicinity
Boyes Coffman Property Biological Resources Report



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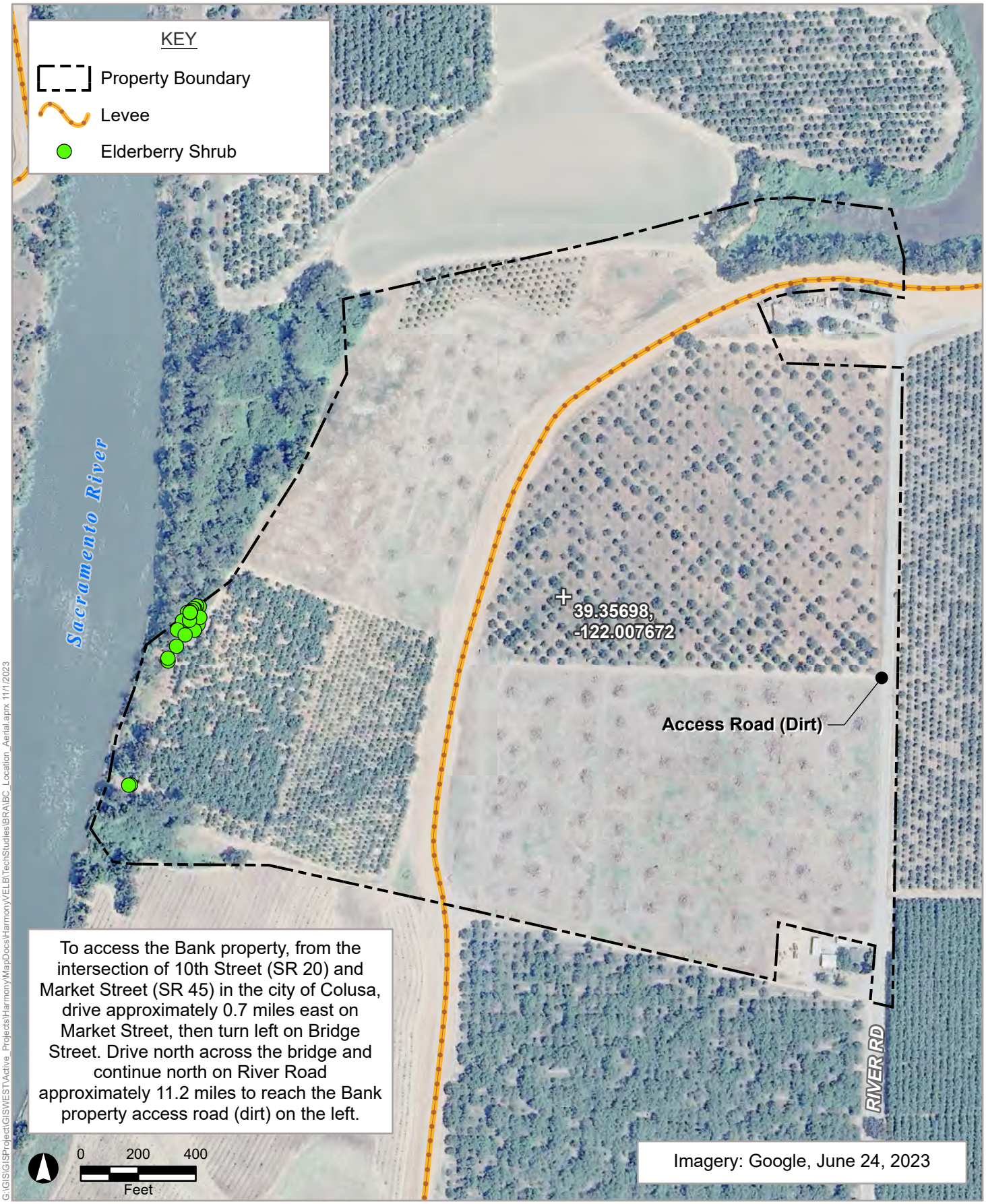
Westervelt ECOLOGICAL SERVICES

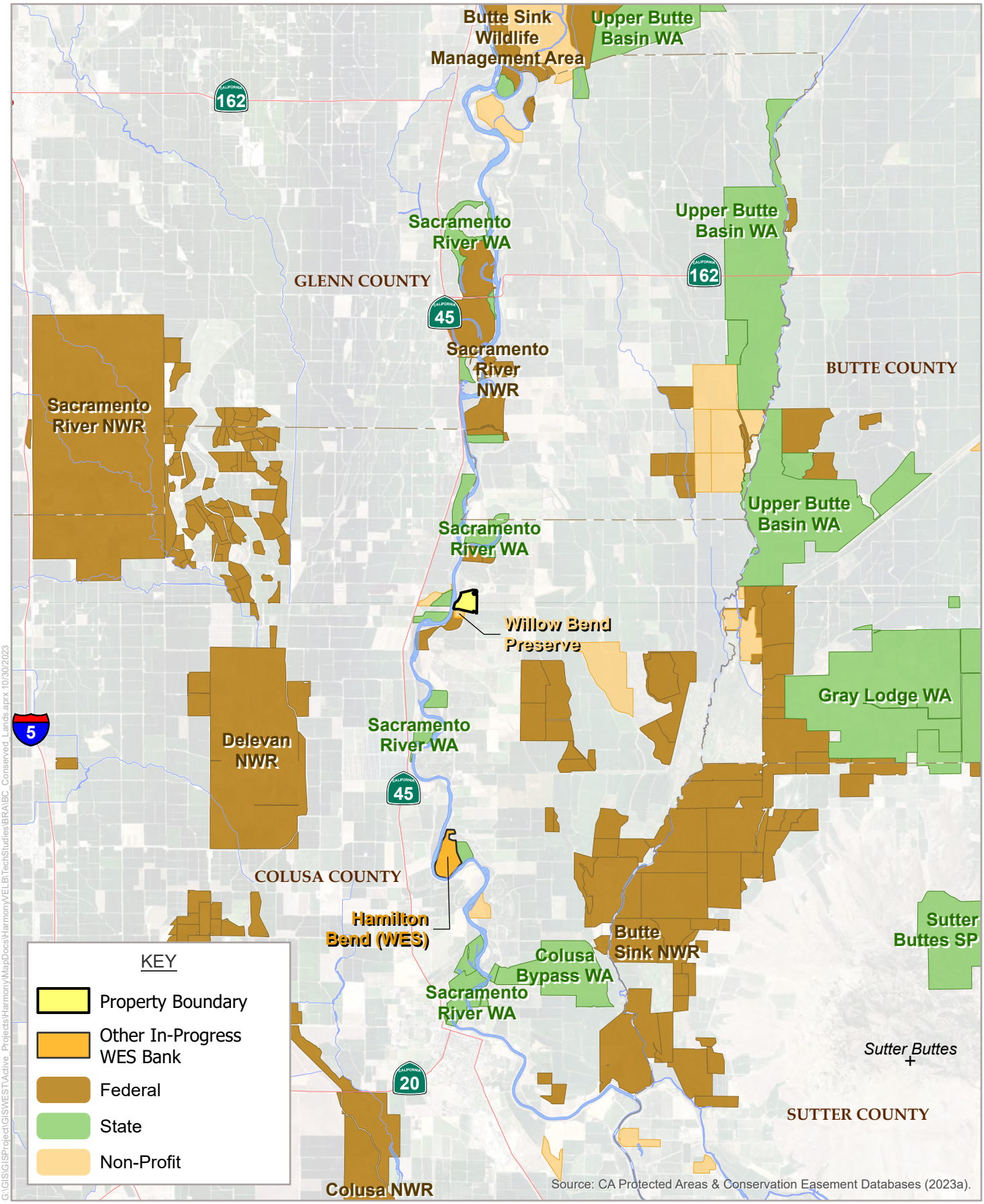
Figure 2
USGS Quadrangle
Boyes Coffman Biological Resources Report



Westervelt ECOLOGICAL SERVICES

Figure 3
Aerial Overview

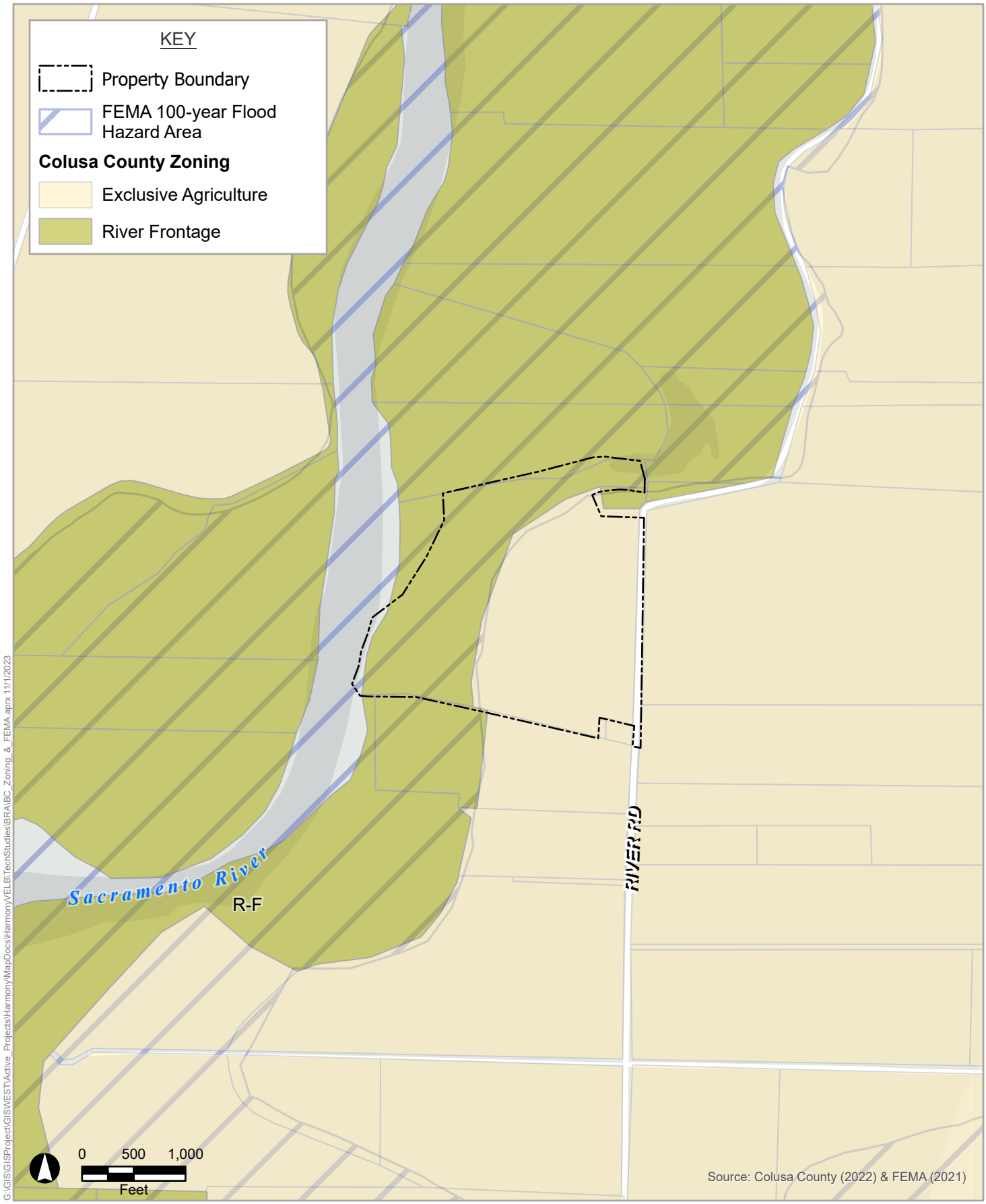
Boyes Coffman Biological Resources Report



Westervelt ECOLOGICAL SERVICES

0 1 2
Miles

Figure 4
Other Conserved Lands
Boyes Coffman Biological Resources Report

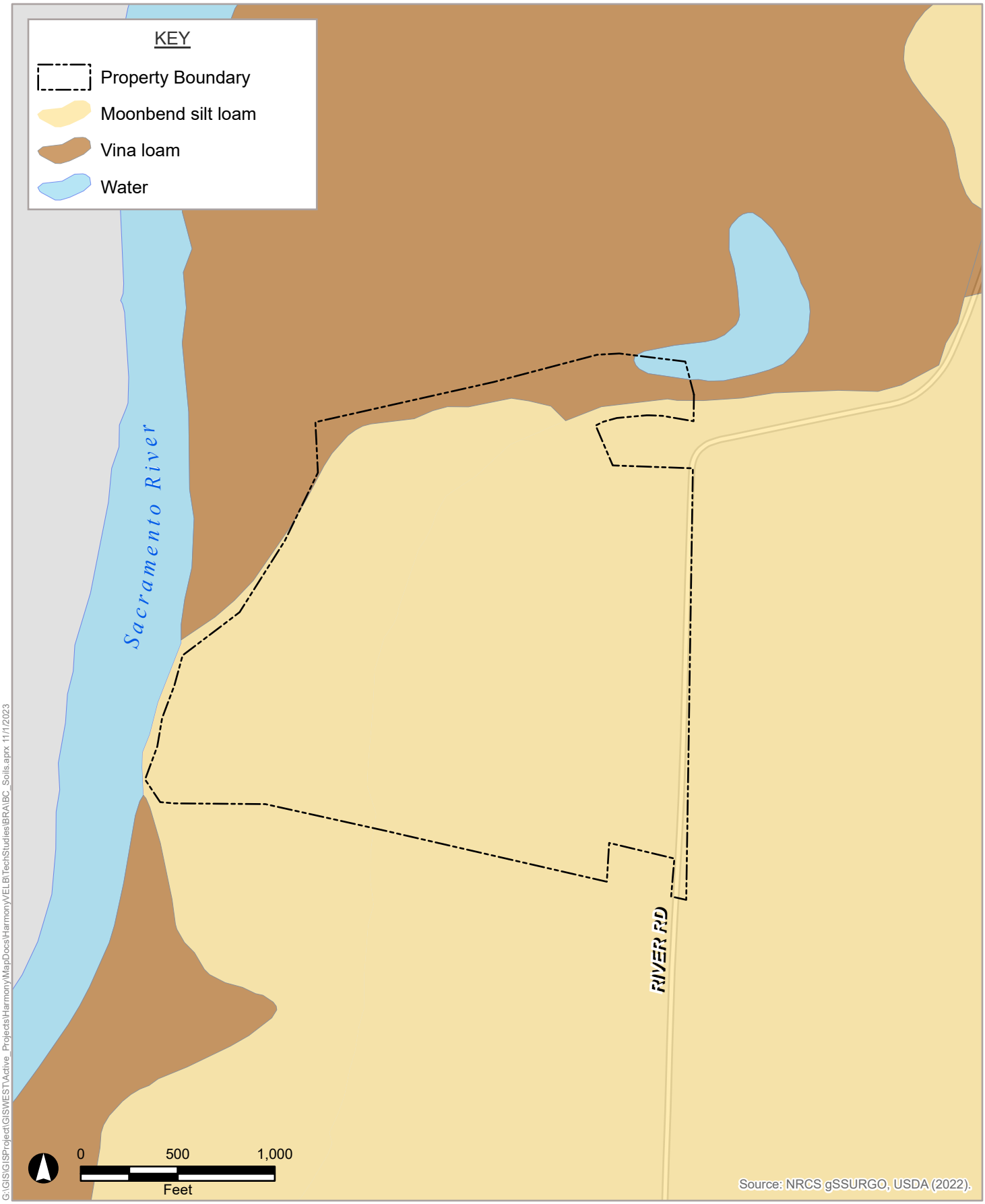


Westervelt ECOLOGICAL SERVICES

Figure 5

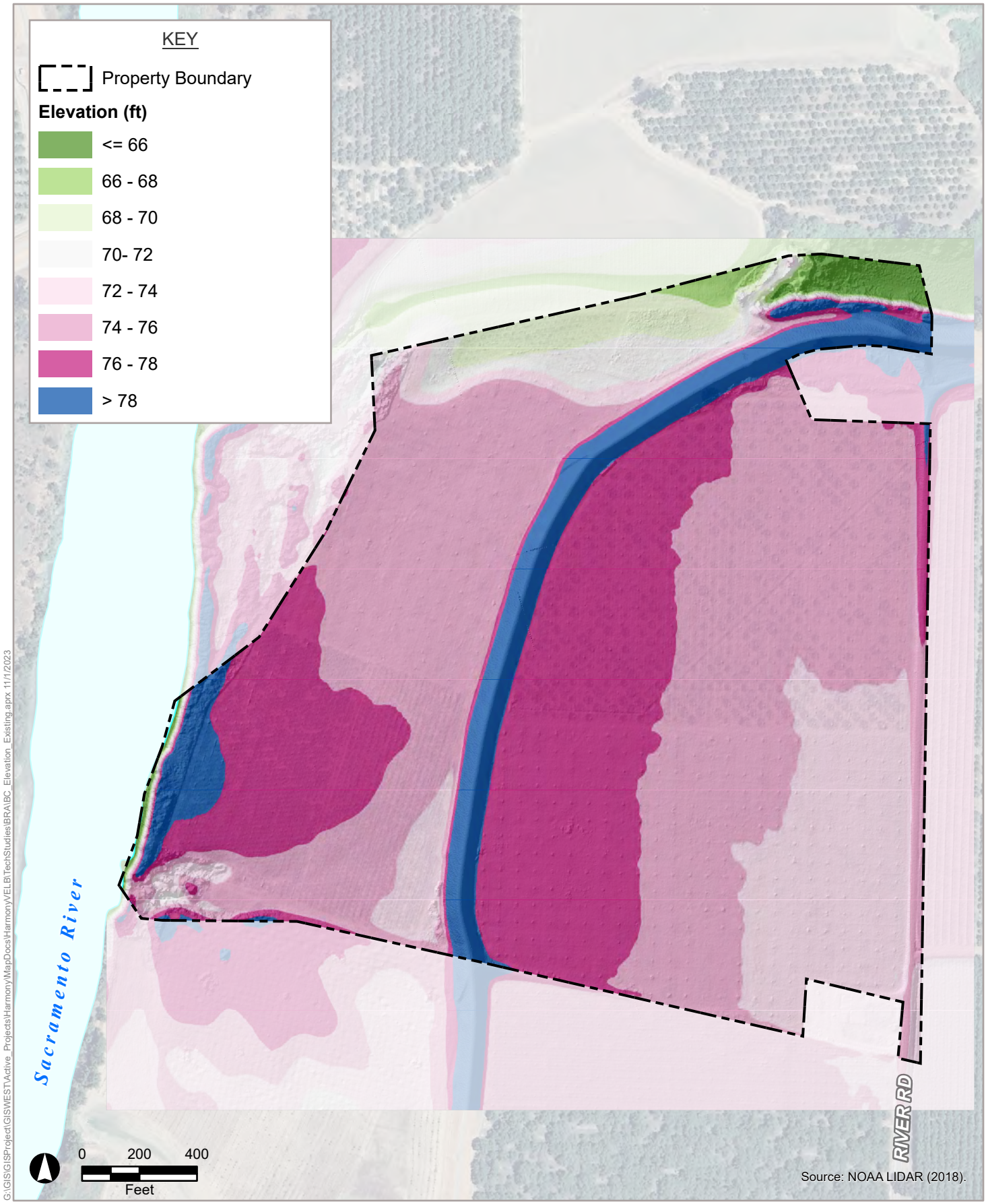
Zoning and FEMA Floodplain Designation

Boyes Coffman Biological Resources Report



Westervelt ECOLOGICAL SERVICES

Figure 6
NRCS Soils
Boyes Coffman Biological Resources Report



Westervelt ECOLOGICAL SERVICES

Figure 7
Lidar Based Elevations
Boyes Coffman Biological Resources Report

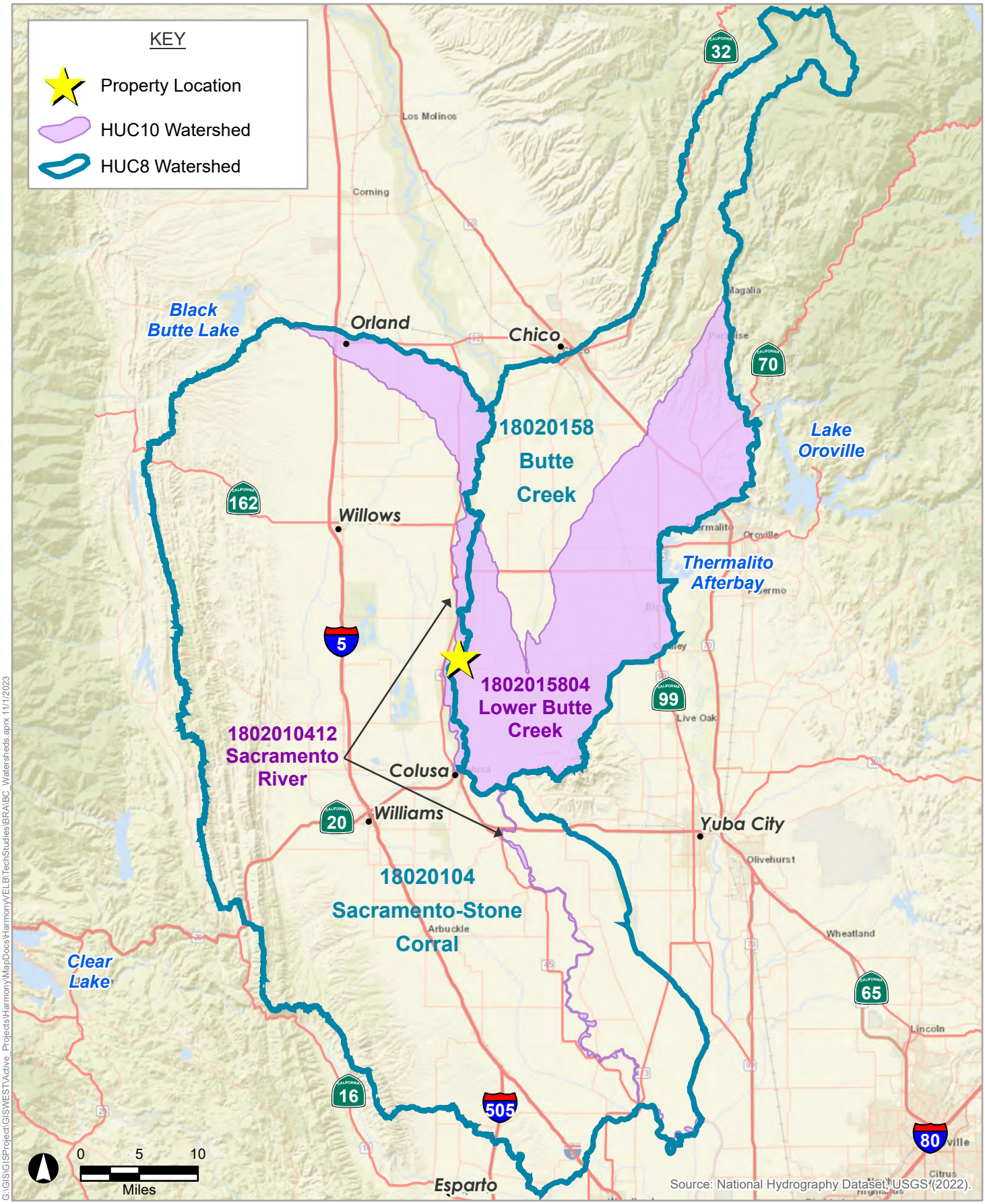


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Figure 8
Watershed Setting
Boyes Coffman Biological Resources Report

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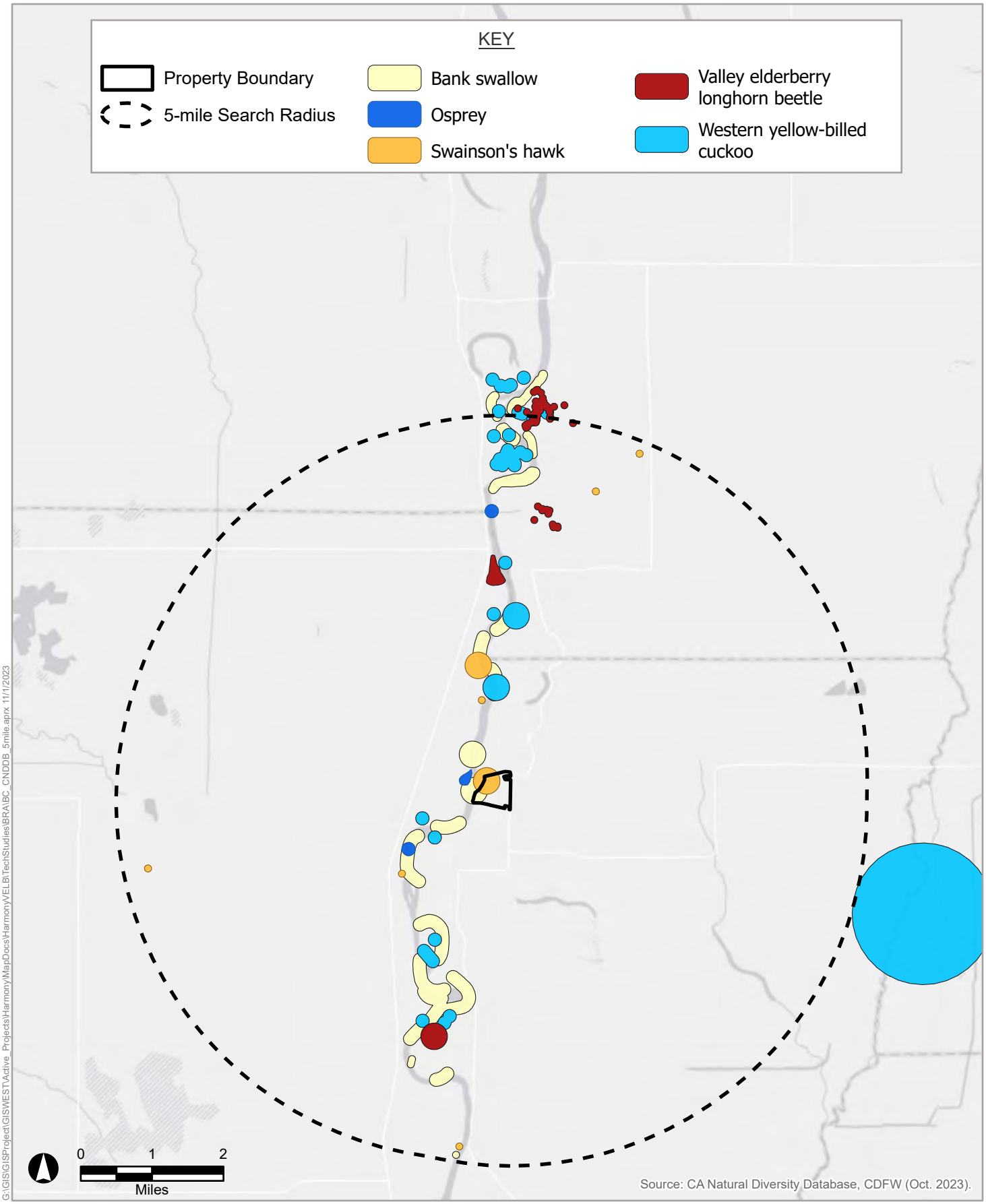
Figure 9
Existing Habitat
Boyes Coffman Biological Resources Report



Westervelt ECOLOGICAL SERVICES

Figure 10
Occurrences for Select Species within a 5-Mile Search Radius
Boyes Coffman Biological Resources Report

Appendices

Appendix A. Queries for Special-status Species with Potential to Occur

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

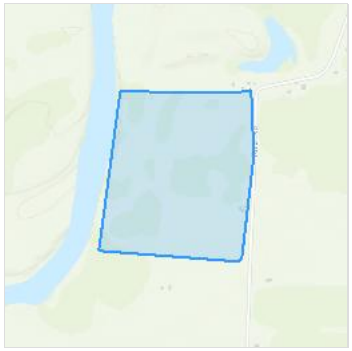
IPaC resource list

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

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

Location

Colusa 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 species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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. IPaC only shows species that are regulated by USFWS (see FAQ).
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
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2246

Flowering Plants

NAME	STATUS
Palmate-bracted Bird's Beak Cordylanthus palmatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1616	Endangered

Critical habitats

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

This location overlaps the critical habitat for the following species:

NAME	TYPE
Yellow-billed Cuckoo Coccyzus americanus https://ecos.fws.gov/ecp/species/3911#crithab	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

There are bald and/or golden eagles in your project area.

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
Bald Eagle Haliaeetus leucocephalus 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.	Breeds Jan 1 to Aug 31

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.

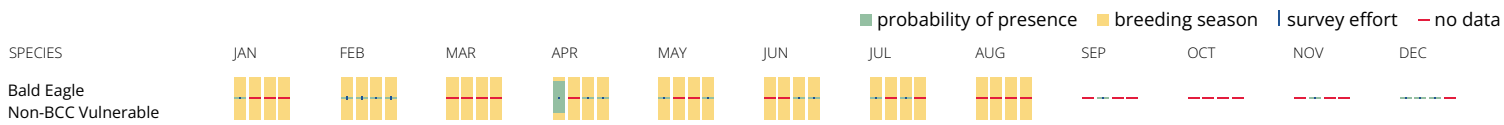
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles 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 Rapid Avian Information Locator (RAIL) Tool.

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. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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 https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.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
Bald Eagle *Haliaeetus leucocephalus* 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.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi* 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/8	Breeds Apr 1 to Aug 15
Bullock's Oriole *Icterus bullockii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Nuttall's Woodpecker *Picoides nuttallii* 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	Breeds Apr 1 to Jul 20
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
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 — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/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.

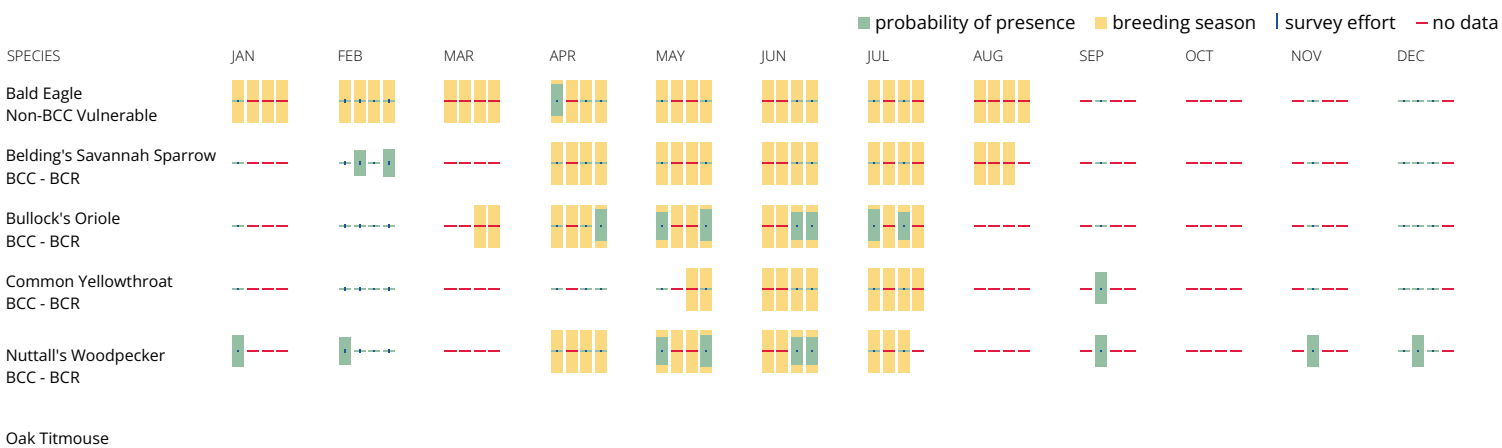
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

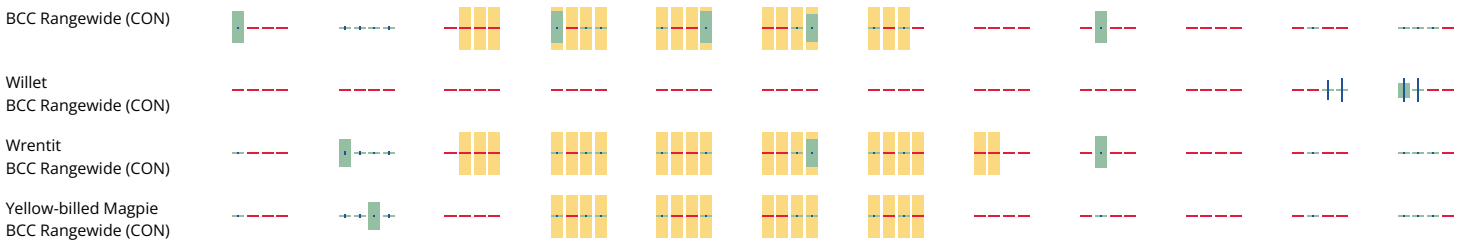
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.





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 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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my 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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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 (NWI)

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

PEM1A

FRESHWATER FORESTED/SHRUB WETLAND

PFO1A

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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 tuberficid 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.

Appendix B. List of Plants Observed During Site Visits

Appendix B. List of Plants Observed During Site Visits

Scientific Name	Common Name
Abutilon theophrasti*	velvet leaf
Acer negundo	boxelder
Acmispon americanus [Lotus purshianus]	Spanish lotus, American bird's foot trefoil
Amaranthus albus*	pigweed amaranth, tumbleweed
Ambrosia artemisifolia*	annual ragweed
Aristolochia californica	Dutchman's pipevine
Artemisia douglasiana	California mugwort
Atriplex sp.	Fat-hen
Baccharis pilularis	coyotebrush
Brassica nigra*	black mustard
Bromus diandrus*	ripgut brome
Bromus hordeaceus*	soft brome
Centaurea solstitialis**	yellow starthistle
Cephalanthus occidentatlis	button willow
Cichorium intybus*	chicory
Clematis lasiantha	pipestem
Convolvulus arvensis*	field bindweed
Cynodon dactylon*	Bermuda grass
Datura stramonium*	jimson weed
Echinochloa crus-galli*	barnyard grass
Epilobium branchycarpum	willow herb
Erigeron canadensis	Canada horseweed
Euphorbia maculata*	spotted spurge
Festuca perennis*	Italian ryegrass
Ficus carica*	Edible fig
Galium aparine	common bedstraw
Geranium molle*	crane's bill geranium
Helianthus annus	annual sunflower
Hirschfeldia incana*	short podded mustard
Juglans hindsii	Northern California black walnut
Lactuca serriola*	prickly lettuce
Lepidium latifolium**	perennial pepperweed
Malva parviflora*	cheeseweed mallow
Mariubium vulgare*	white horehound
Melilotus albus*	white sweetclover
Paspaulum dilatatum*	dallis grass
Persicaria sp.*	smartweed
Phytolacca americana*	Pokeweed
Picris echioides*	bristly ox-tongue
Plantago lanceolata*	English plantain
Platanus racemosa	California sycamore
Populus fremontii	Fremont cottonwood
Portulaca oleracea*	common purslane
Prunus cerasifera*	cherry plum

Appendix B. List of Plants Observed During Site Visits

Scientific Name	Common Name
Quercus lobata	Valley oak
Raphanus sativus*	wild radish
Rosa californica	California rose
Rubus armeniacus**	Himalayan blackberry
Rubus ursinus	California blackberry
Rumex crispus*	curly dock
Salix gooddingii	black willow
Salix lasiandra	Pacific willow
Salix lasiolepis	arroyo willow
Sambucus mexicana	blue elderberry
Silybum marianum*	milk thistle
Solanum rostratum*	buffalo berry
Sonchus oleraceus*	common sow thistle
Sorghum halepense*	Johnsongrass
Spergularia rubra*	purple sand spurry
Stellaria media*	chickweed
Torilis arvensis*	field hedge parsley
Toxicodendron diversilobum	poison oak
Tribulus terrestris*	puncture vine
Trifolium spp.*	clover
Verbascum thapsus*	woolly mullein
Verbena bonariensis*	purpletop vervain
Vitis californica	California wild grape
Xanthium strumarium	cocklebur

* Non-native
** Rated High on California Invasive Plant Council Inventory (Cal-IPC 2021)

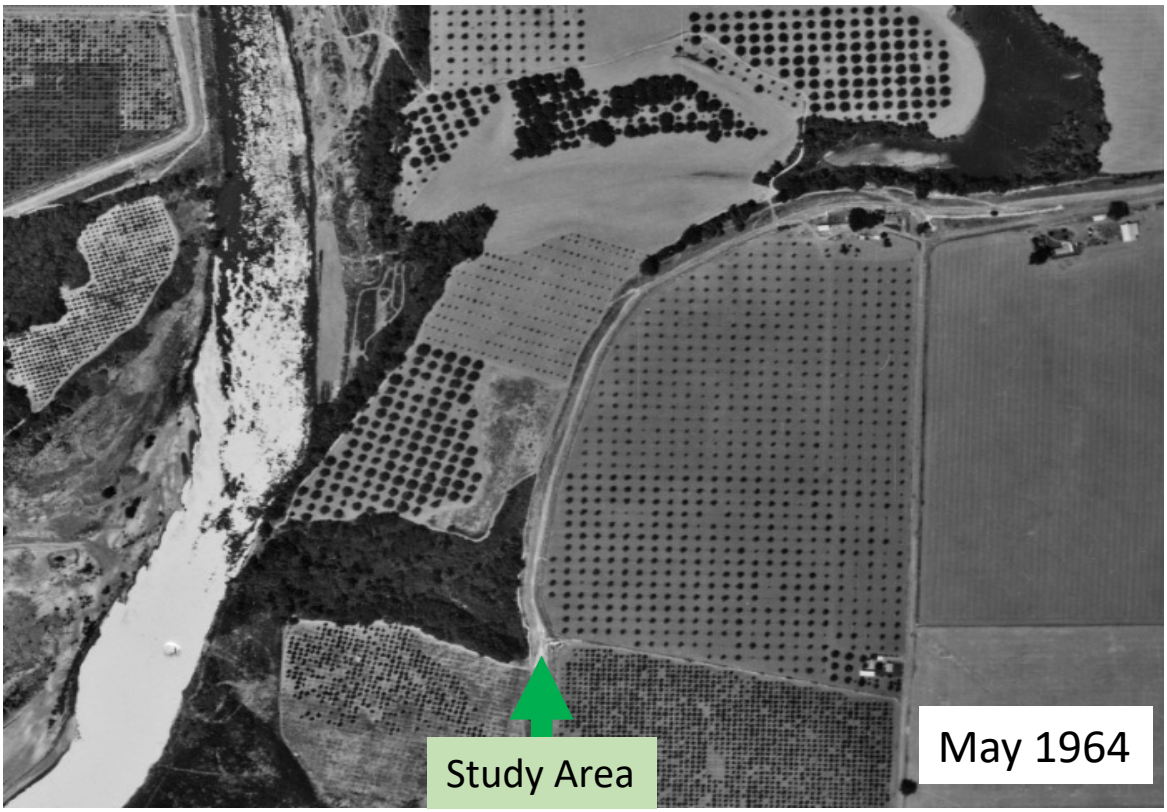
Appendix C. List of Wildlife Observed During Site Visits

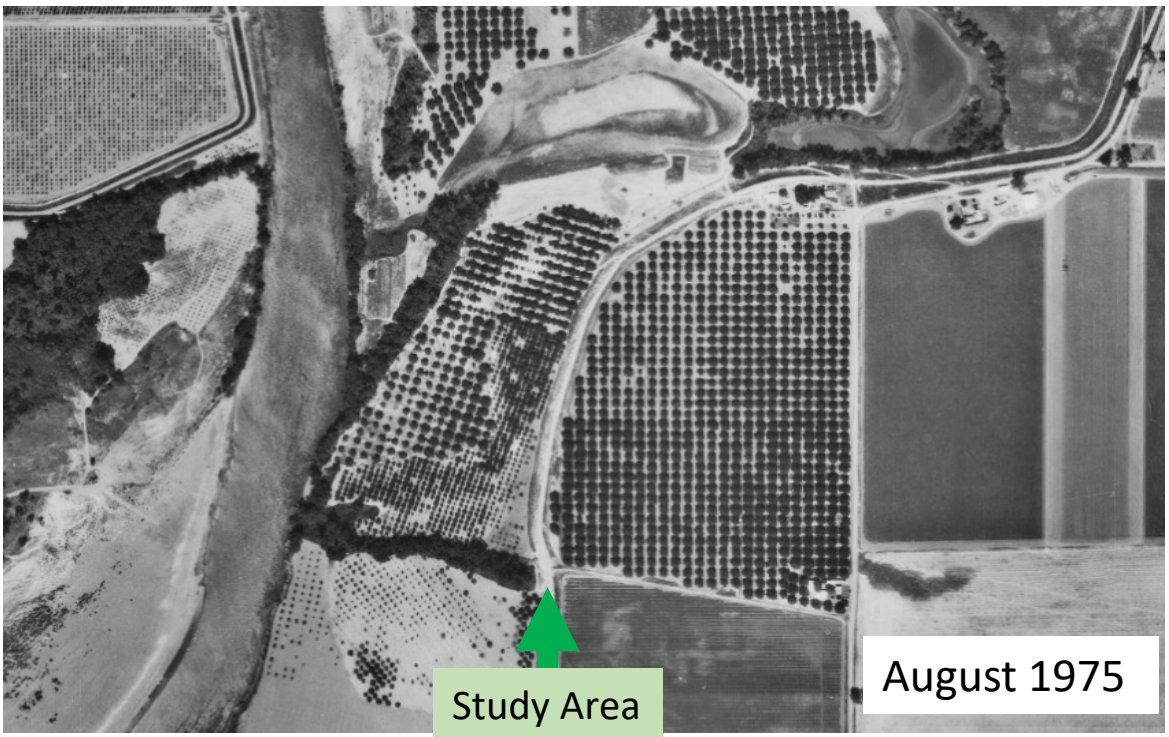
Appendix C. Wildlife Species Observed in the Study Area

Common Name	Scientific Name
Amphibians and Reptiles	
Birds	
acorn woodpecker	*Melanerpes formicivorus*
American crow	*Corvus brachyrhynchos*
American kestrel	*Falco sparverius*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
Audubon's cottontail	*Sylvilagus audubonii*
Bewick's wren	*Thryomanes bewickii*
black phoebe	*Sayornis nigricans*
bushtit	*Psaltriparus minimus*
California quail	*Callipepla californica*
California scrub jay	*Aphelocoma californica*
California towhee	*Pipilo crissalis*
dark-eyed junco	*Junco hyemalis*
golden-crowned sparrow	*Zonotrichia atricapilla*
house finch	*Carpodacus mexicanus*
house wren	*Troglodytes aedon*
mourning dove	*Zenaida macroura*
northern flicker 'red-shafted'	*Colaptes auratus*
northern mockingbird	*Mimus polyglottos*
Nuttall's woodpecker	*Dryobates nuttallii*
oak titmouse	*Baeolophus inornatus*
red-shouldered hawk	*Buteo lineatus*
red-tailed hawk	*Buteo jamaicensis*
ruby-crowned kinglet	*Regulus calendula*
song sparrow	*Melospiza melodia*
spotted towhee	*Pipilo maculatus*
turkey vulture	*Cathartes aura*
western bluebird	*Sialia mexicana*
white-breasted nuthatch	*Sitta carolinensis*
white-crowned sparrow	*Zonotrichia leucophrys*
wild turkey	*Meleagris gallopavo*
yellow-billed magpie	*Pica nuttalli*
yellow-rumped warbler	*Dendroica coronata*
Mammals	
coyote*	*Canis latrans*
black-tailed jackrabbit	*Lepus californicus*
mule deer	*Odocoileus hemionus*
California vole**	*Microtus californicus*
western gray squirrel	*Sciurus griseus*

*Observed by landowner day of survey
**Observed sign of activity

Appendix D. Historic Aerial Photographs





Appendix D. Representative Historic Aerial Photographs

Appendix E. Representative Photographs

Along the Sacramento River, looking upstream

Dense lianas of wild grape in the mature overstory

Oxbow lake - well-shaded valley oak riparian, transitions to emergent wetland and riparian scrub

Buttonwillow and dense wild grape along edge of oxbow lake

Valley oak riparian along oxbow lake

Representative photos of elderberry shrub and potential exit holes

Sycamore stand in SW corner of the Study Area

Federal levee looking south

Mature walnut orchard

Young walnut orchard

Cropland following harvest of beans

Fallow field

Fallow field adjacent to the Sacramento River

Boxelder volunteer in recently fallowed field

Coyotebrush volunteers in recently fallowed field

Ruderal habitat transition from field to riparian