

APPENDIX 3, Biological Assessment

Biological Assessment
Granite Esparto Property

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	PROPERTY LOCATION AND PROJECT DESCRIPTION	1
2.1	PROPERTY LOCATION AND REGIONAL CONTEXT	1
2.2	PROJECT COMPONENTS	2
3.0	STUDY METHODS AND SPECIES CONSIDERED	3
3.1	LITERATURE REVIEW	3
3.2	FIELD SURVEYS	4
4.0	CACHE CREEK AREA PLAN	19
5.0	DESCRIPTION OF THE PROPERTY	20
5.1	PLANT COMMUNITIES AND HABITAT TYPES	20
5.2	JURISDICTIONAL WATERS AND WETLANDS	23
6.0	SPECIES ACCOUNTS AND STATUS OF SPECIES ON THE PROPERTY	24
6.1	SENSITIVE WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON THE PROPERTY	24
6.2	SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR ON THE PROPERTY	32
7.0	POTENTIAL PROJECT IMPACTS	32
7.1	INTERRELATED AND INTERDEPENDENT IMPACTS	32
7.2	CUMULATIVE IMPACTS	32
7.3	IMPACTS TO EXISTING VEGETATIVE COVER AND WILDLIFE HABITAT	33
7.4	IMPACTS ON SENSITIVE NATURAL COMMUNITIES	34
7.5	DISTURBANCE TO WILDLIFE MOVEMENT CORRIDORS	34
7.6	IMPACTS ON SPECIAL STATUS SPECIES	34
7.7	MODIFICATIONS TO JURISDICTIONAL WETLANDS OR OTHER WATERS	39
8.0	IMPACT AVOIDANCE AND MINIMIZATION RECOMMENDATIONS	40
9.0	DETERMINATION	41
10.0	REFERENCES	43

LIST OF TABLES

Table 1: Special-status Species and Potential to Occur on the Property

Table 2: Summary of Jurisdictional Waters and Wetlands on the Granite Esparto Property

LIST OF ATTACHMENTS

Attachment A: Vicinity, CNDDDB, and Vegetation Maps

Attachment B: USFWS, CNDDDB, and CNPS Special-Status Species Lists

Attachment C: Photo Exhibit

Attachment D: Jurisdictional Waters and Wetlands Delineation Report

Attachment E: List of Species Observed

1.0 INTRODUCTION

Granite Construction Company (Granite) is proposing to use approximately 313± acres of a total 390± acres of property located in Yolo County, California, to extract and process sand and gravel over 30 years in a surface mining operation. Various mining methods and depths are proposed, as well as a variety of end uses. The property is adjacent to an existing Granite gravel mining operation.

Granite contracted TRC to conduct a Biological Assessment (BA) of the property pursuant to Yolo County Ordinance 10-4.502(b)(1) that requires:

b) Site-specific technical reports, performed by qualified professionals in the appropriate area of expertise, shall provide specific proposals for inclusion in the surface mining permit to address the following potential environmental impacts:

- (1) A biological inventory and analysis to evaluate the on-site habitat value of the proposed mined area, as well as the potential impacts to species of concern, both on-site and within the immediate area. The analysis shall propose appropriate measures to reduce any potential adverse impacts to species of concern or significant habitat. The analysis shall also include a wetland delineation study for any potential on-site wetlands. If landscaping is proposed to screen the surface mining operations from adjoining public rights-of-way or public and private lands, then the biological analysis shall include an evaluation of the feasibility of the species, weed control, and irrigation methods to be used.

This BA addresses the biological inventory and analysis requirement of the above ordinance. The landscaping feasibility portion of the ordinance is addressed in the project's *Habitat Restoration and Landscape Visual Screening Plan* prepared under separate cover. To prepare this BA, a literature review of relevant documents was conducted to compile a list of special-status species that may occur in the area, followed by a field survey to map habitat types, jurisdictional waters and wetlands; to assess the potential for special-status species to occur on the property; and to record species that were observed. The purpose of this BA is to document the results of the literature review and field surveys, to determine if species addressed in this BA are likely to be adversely affected by the project, and to describe impact avoidance and minimization measures that would reduce or avoid potential adverse project effects to these species and their habitats. This BA presents technical information upon which later determinations regarding project effects may be developed for compliance with the California Environmental Quality Act (CEQA).

2.0 PROPERTY LOCATION AND PROJECT DESCRIPTION

2.1 PROPERTY LOCATION AND REGIONAL CONTEXT

The property is located in the Central Valley of California, west of the Sacramento River, in an area rich in agricultural production, consisting of orchards, row crops, and grain crops. The property is situated in western Yolo County, approximately 1.5 miles north of the town of Esparto, along the west side of County Road (CR) 87. The property has an existing street address of 26410 Fulton & Frank Lane, Esparto, California. The mining and processing activities will occur on two parcels with Assessors Parcel Numbers 048-220-221 and 048-220-151. The property lies within Sections 7

and 18, Township 10 North, Range 1 West, Mount Diablo Base and Meridian. Elevation on the property ranges from approximately 180 to 186 feet. The climate in the area can be characterized as mild, with average temperatures ranging from 33 to 55 degrees Fahrenheit in the winter and 57 to 96 degrees Fahrenheit in the summer. Average annual precipitation in the area is about 19 inches. A vicinity map is provided as Figure 1 in Attachment A. The property is bound to the north and west by the West Adams Canal, and agricultural land that extends beyond it. County Road 87 bounds the property to the east, beyond which is agricultural land and the Yolo County landfill convenience center. Granite's Capay Facility (an existing off-channel sand and gravel operation) is located immediately southwest of the property. The stream channel for Cache Creek traverses the southern portion of the property, and agricultural land extends beyond its boundaries toward the town of Esparto. The proposed sand and gravel operations will occur exclusively on the north side of a paved private road that separates the property from the Cache Creek flood plain. The applicant is also proposing a "Net Gain" to the County that includes implementation of a segment of the County's Test 3 Line for stream management and bridge protection on Cache Creek. Approximately 56 acres of the property that is occupied by the Cache Creek stream channel and banks south of the Test 3 line implementation area will not be disturbed.

The regional topography consists of low rolling hills and broad alluvial plains formed at the base of the eastern flank of the California Coast Range. The predominant land-use for the region is agriculture and the extraction of sand and gravel to meet the regional demand for construction materials. The property is located in the southern portion of a relatively flat and wide alluvial valley known as Hungry Hollow. The alluvial valley is oriented northwest to southeast. Hungry Hollow is bounded on the east by Dunnigan Hills and to the west by the Capay Hills. Cache Creek transects the valley, flowing west to east.

The property is currently zoned for agriculture with a Sand and Gravel Reserve in the Yolo County General Plan. The area proposed for mining is currently utilized for agricultural orchards, row crops, and pasture. One residence and three ancillary structures (i.e., garage, storage shed, and workshop) are located on the property and will ultimately be removed as part of mining operations, as necessary. The land uses in the surrounding area are predominantly mining and agriculture. Sand and gravel operations are located within an area identified by the State Geologist as containing significant, marketable aggregate deposits suitable for production of Portland Cement Concrete. Historically, the majority of aggregate extracted from the Cache Creek area had been excavated from the active channel of the creek. With the adoption of the Off-Channel Mining Plan (OCMP) in 1996, mining activities have gradually moved out of the active channel and onto off-channel areas. The property is located within the OCMP boundary and has a Sand and Gravel Reserve zoning designation.

2.2 PROJECT COMPONENTS

The project will occur on 313± acres of the total 390± acres comprising the property, and will include the entire property north of the Capay haul road. A visual screening berm will be constructed on top of the Test 3 Line implementation area south of the haul road. The major project components are:

- Application for 870,000 tons sold of aggregate as allowed and contemplated under the OCMP.
- Application for Off-Channel Mining Use Permit for excavation and processing of sand and gravel from approximately 313± acres on portions of Assessors Parcel Numbers 048-220-221 and 048-220-151 (parcels total 390± acres).
- Application for a Reclamation Plan for the mining and processing areas.
- Request for a Zoning Ordinance Amendment and zone change from AP(SGR) to AP(SG) and from A1(SGR) to A1(SG).
- Relinquishment of an existing 420,000 ton per year mining entitlement at Granite's Woodland site.

Granite's submittal includes a net benefit proposal with implementation of a segment of the Test 3 Line for Cache Creek, which has already been analyzed under separate environmental documents and will require the approval of a Flood Hazard Development Permit for Yolo County. The Test 3 Line implementation is not a part of the proposed project and is therefore not considered in this BA.

3.0 STUDY METHODS AND SPECIES CONSIDERED

3.1 LITERATURE REVIEW

Prior to performing the habitat assessment, documentation relevant to the area was reviewed and a special-status species list was prepared for the property, which included species found in records for Yolo County and the four United States Geological Survey (USGS) 7.5-minute quadrangles (quads) surrounding the property (Esparto, Madison, Bird Valley, and Zamora). Sources of information that were used to compile the species list included the United States Fish and Wildlife Service (USFWS) endangered species lists (USFWS, 2007a), the California Department of Fish and Game (CDFG) California Natural Diversity Data Base (CNDDB) (CDFG, 2007), the CDFG Special Animals List (CDFG, 2006), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) list of protected anadromous species (NMFS, 2006), and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik, 2001). USFWS, CNDDB, and CNPS special-status species lists for the four quads and Yolo County are included in Attachment B.

Special-status species that were considered include all federally and state-listed endangered and threatened species, candidates for listing, species proposed for listing, fully-protected species, state species of concern, and species listed as rare or endangered by the CNPS. A special-status species was considered a potential inhabitant of the property if its known geographical distribution encompassed any of the four 7.5-minute quads or Yolo County, and its general habitat requirements (e.g., roosting, nesting, or foraging habitat, specific soil type, permanent water source, etc.) were potentially present. A list of special-status species with the potential to occur was compiled, and the habitat requirements of each species were considered during the field survey. The location of CNDDB records in and around the property is shown in Attachment A, Figure 2.

Thirty-five special-status species were found during the literature review: 31 wildlife species and 4 plant species (see Table 1, below, and Attachment B).

3.2 FIELD SURVEYS

Habitat Assessment

On May 22, 2007, Benjamin Hart of TRC surveyed the property to determine the presence or absence of suitable habitat for special-status species, and to map habitat types. The assessment area encompassed all land within the two affected parcels (390+/- acres total), including rural/agricultural development, agricultural fields, orchards, farm roads, grasslands, and the banks and bed of Cache Creek. Vegetative characteristics, including habitat types and plant communities, were documented and mapped using a hand-held Trimble GeoXT sub-meter global positioning system (GPS) data collector (a vegetation map is provided as Figure 3 in Attachment A). The area was also assessed for special-status fish, wildlife, and plant species and habitats identified during the literature review. Photographs taken during the property assessment are provided in Attachment C.

During the assessment, Mr. Hart focused on determining if suitable habitat was present for any special-status species identified by the literature survey. The four special-status plant species identified by the literature search, including the palmate-bracted bird's beak (*Cordylanthus palmatus*), Heckard's pepper grass (*Lepidium latipes* var. *heckardii*), Colusa grass (*Neostapfia colusana*), and Crampton's tuctoria or Solano grass (*Tuctoria mucronata*) were ruled out from potentially occurring in the property area because it is out of the species' known ranges and/or suitable habitat was not found at the property. The following 13 wildlife species were also ruled out from potentially occurring in the property area because it is out of the species' known range and/or suitable habitat was not found at the property:

- Green sturgeon (*Acipenser medirostris*)
- California tiger salamander (*Ambystoma californiense*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Delta smelt (*Hypomesus transpacificus*)
- Vernal pool tadpole shrimp (*Lepidurus pakcardi*)
- California red-legged frog (*Rana aurora draytonii*)
- Northern spotted owl (*Strix occidentalis caurina*)
- California freshwater shrimp (*Syncaris pacifica*)
- Giant garter snake (*Thamnophis gigas*)

Table 1 (below) lists the special-status species identified in the literature review, their listing status, habitat association, field survey results, and potential to occur at the property.

Table 1: Special-status Species and Potential to Occur on the Property

Species	Listing Status	Habitat Association	Potential in Area
Plants			
Palmate-bracted bird's beak (<i>Cordylanthus palmatus</i>)	FE; SE; 1B	Chenopod scrub, valley and foothill grasslands with alkaline soils. Elevation 15 to 500 feet. Blooms May through October.	Not observed during property assessment. Not expected to occur due to lack of suitable habitat.
Heckard's pepper grass (<i>Lepidium latipes</i> var. <i>heckardii</i>)	1B	Valley and foothill grassland with alkaline flats. Elevation 30 to 650 feet. Blooms March through May.	Not observed during property assessment. Not expected to occur due to lack of suitable habitat.
Colusa grass (<i>Neostappia colusana</i>)	FT; CH; SE; 1B	Larger adobe vernal pools. Elevation 15 to 650 feet. Blooms May through August.	Not observed during property assessment. Not expected to occur due to lack of suitable habitat. Critical habitat does not occur on the property.
Crampton's tuctoria or Solano grass (<i>Tuctoria mucronata</i>)	FE; CH; SE; 1B	Vernal pools in valley and foothill grasslands. Elevation 15 to 30 feet. Blooms April through August.	Not observed during property assessment. Not expected to occur due to lack of suitable habitat. Critical habitat does not occur on the property.
Invertebrates			
Conservancy fairy shrimp (<i>Branchinecta conservation</i>)	FE; CH	Inhabits rather large, cool-water vernal pools with moderately turbid water that typically remain ponded until June.	Suitable habitat does not exist on the property. Not expected to occur. Critical habitat does not occur on the property.

Species	Listing Status	Habitat Association	Potential in Area
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT; CH	Occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Tends to occur in smaller pools in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands.	Suitable habitat does not exist on the property. Not expected to occur. Critical habitat does not occur on the property.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT; CH	Occurs only in the Central Valley of California in association with blue elderberry (<i>Sambucus mexicana</i>).	Suitable habitat does not exist on the property. No elderberry was observed. Not expected to occur. Critical habitat does not occur on the property.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olecott Lake at Jepson Prairie.	Suitable habitat does not exist on the property. Not expected to occur.
California freshwater shrimp (<i>Syncaris pacifica</i>)	FE; SE	Inhabits a broad range of stream and water conditions characteristic of small, perennial, coastal streams. Have been found only in low-elevation and low-gradient streams with a depth between 12 and 36 inches in Marin, Sonoma, and Napa counties north of San Francisco Bay. Stream must contain exposed live roots of trees such as alder and willow, undercut banks greater than six inches, and overhanging woody debris or stream vegetation such as stinging nettle, grasses, or vine maple.	While Cache Creek is low-elevation and low-gradient near the property, it is out of the known range of this species. Also, the lack of undercut banks, overhanging woody debris, and live roots within the creek make the occurrence of this species unlikely. Not expected to occur.

Species	Listing Status ¹	Habitat Association	Potential in Area
<p>Fish</p> <p>Green sturgeon (Southern DPS) (<i>Acipenser medirostris</i>)</p>	<p>FT; CSC</p>	<p>Migrations by adults into freshwater occur between late February and late July, with a spawning period generally ranging from March to July. Spawning takes place in deep, fast-moving water with temperatures between 46 and 57 degrees Fahrenheit. Preferred spawning substrate is likely large cobble, but can range from clean sand to bedrock. Larval and juvenile green sturgeon remain near estuaries in early life stages, but they migrate considerable distances as they grow. Juveniles typically migrate out to sea before the end of their second year, primarily during summer and fall.</p>	<p>Suitable habitat does not exist on the property. Access to Cache Creek near the property is extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. Not expected to occur.</p>
<p>Delta smelt (<i>Hypomesus transpacificus</i>)</p>	<p>FT; ST; CH</p>	<p>The delta smelt is a euryhaline species that typically occupies estuarine waters with temperatures ranging from 43 to 82 degrees Fahrenheit, and salinities between two and seven parts per thousand (ppt), but can tolerate salinities between 0 and 19 ppt. Delta smelt spawn in freshwater at temperatures from about 45 to 59 degrees Fahrenheit, between February and June. Spawning takes place in dead end sloughs and shallow edge waters of channels in the western Delta. Eggs are adhesive and stick to hard substrates, such as rocks, gravel, tree roots, and submerged branches. Critical habitat has been designated in the Sacramento-San Joaquin Delta for Delta smelt, but does not exist in Cache Creek.</p>	<p>Suitable habitat does not exist on the property. Access to Cache Creek near the property is extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. Not expected to occur.</p>

Species	Listing Status	Habitat Association	Potential in Area
<p>California Central Valley steelhead (<i>Oncorhynchus mykiss</i>)</p>	<p>FT; CH</p>	<p>Steelhead trout in the Central Valley enter freshwater from the ocean when winter rains provide large amounts of cold water for migration and spawning. Steelheads typically spawn in clean gravel within tributaries to mainstem rivers, often traveling great distances to spawning grounds. They return to the ocean after spawning, if possible. Juvenile steelhead are found in cool, clear, fast moving permanent streams and rivers where there is ample cover of riparian vegetation or undercut banks, and where invertebrate life is abundant. Juvenile steelheads spend between one and three years in freshwater before smolting and migrating to sea. Adults spend between one and four years at sea before returning to spawn. Steelheads prefer temperatures in the range of 59 to 64 degrees Fahrenheit, but can withstand temperatures between 34 and 81 degrees Fahrenheit for short periods if they have been previously acclimated. Temperatures beyond this range are lethal to trout species.</p>	<p>Suitable habitat does not exist on the property. California Central Valley steelhead historically occurred in Cache Creek. However, access to Cache Creek near the property is now extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. Suitable juvenile rearing on the property does not exist due to low flows and warm temperatures. Critical habitat does not occur on the property.</p>

Species	Listing Status ¹	Habitat Association	Potential in Area
<p>Central Valley fall-/late-fall-run Chinook (<i>Oncorhynchus tshawytscha</i>)</p>	<p>FC; CCH; CSC</p>	<p>Chinook require cool, clear, year-round flowing water with temperatures between 41 and 66 degrees Fahrenheit. At around 72 to 73.5 degrees Fahrenheit, major mortality is experienced in wild populations. Adult fall-run Chinook migrate into freshwater in late summer and early fall. They are sexually mature upon entering the river, and spawning typically takes place on gravel bars within a few days or weeks of entering freshwater. Late-fall-run Chinook enter the river beginning in October and hold in freshwater for one to three months before spawning. Adults require clean gravel bars and cool, well-oxygenated water for spawning. Juveniles require in-stream structures, such as undercut banks, log structures, boulders, etc. for optimal rearing habitat, and plentiful invertebrate life for feeding. Juveniles move downstream to estuaries and to the ocean after 1 to 13 months in freshwater.</p>	<p>Suitable habitat does not exist on the property. Central Valley fall-/late-fall-run Chinook historically occurred in Cache Creek. However, access to Cache Creek near the property is now extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. Suitable juvenile rearing on the project does not exist, due to low flows and warm temperatures.</p>

Species	Listing Status	Habitat Association	Potential in Area
<p>Central Valley spring-run Chinook (<i>Oncorhynchus tshawytscha</i>)</p>	<p>FT; ST; CH</p>	<p>Chinook require cool, clear, year-round flowing water with temperatures between 41 and 66 degrees Fahrenheit. At around 72 to 73.5 degrees Fahrenheit, major mortality is experienced in wild populations. Spring-run Chinook salmon enter the Sacramento River as immature fish in spring and early summer. They move upstream and enter tributary streams, holding in headwater pools until they spawn. Adults die after spawning. Juveniles typically rear in freshwater for 3 to 15 months. Juveniles emigrate from the tributaries to estuarine waters and the ocean between mid-November and June.</p>	<p>Suitable habitat does not exist on the property for Central Valley spring-run Chinook. Access to Cache Creek near the property is extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. In addition, run of salmon requires significant flows and cool water during the summer, when flows in Cache Creek are low and warm. Critical habitat does not occur on the property.</p>
<p>Sacramento River winter-run Chinook (<i>Oncorhynchus tshawytscha</i>)</p>	<p>FE; SE; CH</p>	<p>Winter-run Chinook in California are unique to the Sacramento River. They typically migrate upstream as immature fish during winter and spring, then spawn several months later in summer. Most winter-run Chinook return to freshwater as three-year-olds, and spawn in clear, cool water released from Shasta Reservoir. Adults die after spawning. Juveniles remain in freshwater for 5 to 10 months, followed by an intermediate time in estuarine waters before entering the ocean. Optimal temperatures for growth and survival of Chinook range between 41 and 66 degrees Fahrenheit. At around 72 to 73.5 degrees Fahrenheit, major mortality is experienced in wild populations.</p>	<p>Suitable habitat does not exist on the property for Sacramento River winter-run Chinook. Access to Cache Creek near the property is extremely prohibitive and requires utilization of a large network of irrigation canals and ditches. This species typically stays in the mainstem of the Sacramento River and flows in Cache Creek in the summer are not suitable to support spawning. Critical habitat does not occur on the property.</p>

Species	Listing Status	Habitat Association	Potential in Area
<i>Amphibians</i>			
California tiger salamander (<i>Ambystoma californiense</i>)	FT; CH; CSC	Utilizes underground refuges, especially ground squirrel burrows. Needs vernal pools or other seasonal water sources for breeding.	Suitable habitat was not observed during the habitat assessment. No known localities within the property vicinity (nearest occurrences in Yolo County near Dunningan). Critical habitat does not occur on the property. Not expected to occur.
California red-legged frog (<i>Rana aurora draytonii</i>)	FT; CH; CSC	Believed to either never have occurred or to have been extirpated from Valley floor. Inhabits lowlands and foothills in or near permanent deep water with dense growth of emergent and woody riparian vegetation, bordering permanent and semi-permanent ponds, ponded streams, marshes, and springs. Upland habitat surrounding breeding areas is important for shelter during dispersal and aestivation.	Marginal habitat for the California red-legged frog (CRLF) exists on the property. However, no CNDDDB records were found for CRLF within 10 miles of the property. Because the species is believed to either have never occurred or to have been extirpated from the Valley floor, it is not expected to occur.
Western spadefoot toad (<i>Spea hammondi</i>)	CSC	Inhabits lowlands in open areas with sandy or gravelly soils, in a variety of habitats, including mixed woodlands, grasslands, chaparral, sandy washes, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Breeds from January to May in temporary pools and quiet streams.	Marginal suitable habitat for the species exists within the property. No CNDDDB records of the species exist near the property. Low potential to occur.

Species	Listing Status ¹	Habitat Association	Potential in Area
<i>Reptiles</i>			
Western Pond Turtle (<i>Clemmys marmorata</i>)	CSC	Can be found throughout the state inhabiting woodland, grassland, and open forest habitats that contain ponds, permanent pools along intermittent drainages, lakes, marshes, rivers, streams, or irrigation ditches with rocky or muddy bottoms and emergent or aquatic vegetation.	Cache Creek provides a permanent water source for this species, and upland areas surrounding this waterway could provide suitable nesting habitat. Though no CNDDB records were found for the turtle near the property, there is a moderate potential for the species to occur.
Giant garter snake (<i>Thamnophis gigas</i>)	FT; ST	Prefers freshwater marsh and low gradient stream habitats with sufficient prey base of frogs, tadpoles, and small fish, including extensive rice fields in the Central Valley. Has adapted to drainage canals and irrigation ditches surrounding farmlands. Habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter. Giant garter snakes are typically absent from wetlands with sand, gravel, or rock substrates.	Suitable aquatic habitat for the giant garter does not exist in or around the project area. Though Cache Creek and one large canal exist in the area, the substrate of Cache Creek consists of gravel and rocks, and the large canal along the northern portion of the property lacks emergent herbaceous vegetation and a substantial prey base, and has limited upland basking sites due to the highly disturbed nature of the adjacent farm roads. Due to lack of suitable habitat, this species is not expected to occur.

Species	Listing Status	Habitat Association	Potential in Area
Birds			
Tricolored blackbird (<i>Agelaius tricolor</i>)	CSC	Colonial species, most numerous in Central Valley and vicinity. Largely endemic to California; requires open water, protected nesting substrate, and suitable foraging areas within a few kilometers of the colony.	Freshwater and wetland habitat within Cache Creek provides marginal nesting habitat. Due to the generally narrow width and sparse nature of the vegetation; open grassland and agricultural habitats provide suitable foraging habitat. The species is considered to have moderate potential for occurrence.
Burrowing owl (<i>Athene cunicularia</i>)	CSC	Nests in subterranean burrows often created by mammals within open, dry, annual or perennial grasslands; deserts; and scrublands characterized by low-growing vegetation.	Suitable mammal burrows that would provide nesting habitat for the species were not observed within the grassland areas on the property. A few small burrows were observed adjacent to Cache Creek, in low-growing vegetation areas. Low potential to occur.
Ferruginous hawk (<i>Buteo regalis</i>)	CSC	Breeds in interior western and Great Plains states. Habitats include agricultural flatlands, open prairies, deserts, and semi-arid grasslands featuring scattered trees, rocky mounds, or outcrops. May roost or nest on utility structures, trees, shrubs, cliffs, or ground outcroppings. May roost communally and forage in groups on the ground during winter migration (August to September and February to April). Winter resident in the Central Valley, Modoc Plateau, and coastal ranges of California.	Agricultural flatlands in and around the property may provide suitable habitat. Moderate potential to occur as a winter resident.

Species	Listing Status	Habitat Association	Potential in Area
Swainson's hawk (<i>Buteo swainsoni</i>)	ST	Nesting habitat consists of open areas with stands of few, dense-topped trees in juniper-sage flats, riparian areas, and oak savannas. Foraging habitat consist of open grasslands, grain, and alfalfa fields (supporting rodent populations) adjacent to nesting opportunities. In California, the current breeding range includes the Central Valley and the northeastern corner of the state. Winters in South America.	Marginal nesting habitat on the property is limited to a few stands of cottonwood near Cache Creek, though adjacent land provides numerous nesting opportunities for the Swainson's hawk. Marginal foraging habitat exists on the property in grassland areas and over agricultural fields. One Swainson's hawk was observed within the property, perched in a dead tree along the south bank of Cache Creek. Swainson's hawk is considered to have moderate potential to nest and forage in the property area, but high potential for incidental occurrence as a migrant to and from adjacent nesting and foraging sites.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT; CSC	Nesting federal listing applies only to the Pacific coastal population. Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	Suitable habitat does not exist on the property. Not expected to occur.

Species	Listing Status	Habitat Association	Potential in Area
Mountain plover (<i>Charadrius montanus</i>)	CSC	Interior valleys and low altitude plains. Ground-forages for large insects. Flocks may form in winter on short grass prairies, freshly plowed fields, and in grazed areas. This species is often associated with bare ground, flat topography, and burrowing rodents. Breeds out of state and most of the North American population winters in California in the San Joaquin and Sacramento Valleys. Arrives in September, October, and November.	Agricultural practices on the property provide suitable wintering and foraging habitat. One CNDDDB record was found approximately 2 miles north of the property. Moderate potential to occur.
Northern harrier (<i>Circus cyaneus</i>)	CSC	Forages for small birds and mammals over meadows, farmlands, grasslands, and rangelands. Perches on ground or low fence posts; usually seen flying low over ground when foraging. Nests on the ground in fields or along the edges of marshes.	Suitable nesting and foraging habitat exists on the property. Observed during field survey. High potential to occur.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FC	Nests in riparian forests along broad, lower floodplains of larger river systems. Requires broad, well-developed, low-elevation riparian woodlands of primarily mature cottonwoods and willows. Extirpated from a large portion of the historical range in California with current breeding populations restricted to four major areas (the Sacramento Valley, Kern River, Lower Colorado River and the Prado Basin). Local breeding records occur along the Feather River in Sutter and Yuba counties. Winters in South America and migrates north during May or June. Flies south beginning in August.	Riparian habitat along Cache Creek near the property is marginal and does not contain a substantial amount of broad, well-developed woodland. Not expected to occur.

Species	Listing Status	Habitat Association	Potential in Area
White-tailed kite (<i>Elanus leucurus</i>)	CFP	This species was decimated in the 1800s and 1900s by sport shooting. Adaptable. Found in open grasslands, savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields with scattered trees for nesting and perching. Breeds from January through August and may incubate a second brood. Nests in large shrubs or trees often in riparian corridors where it competes with other raptors for suitable nest sites. May roost communally in winter.	Open grassland and agricultural fields provide suitable foraging habitat, and scattered isolated trees and small tree groves may provide suitable nesting and roosting substrate. Moderate potential to occur.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	FD; SE; CFP	Nests in the upper canopy of towering mature trees with open branches, or in large stick nests on cliffs near large rivers, lakes, bays, and coastlines. Primarily feeds on fish. California contains resident pairs and winter migrants. Migrants arrive late in fall and winter among dense conifer stands. Wintering areas include large rivers, lakes, reservoirs, and additional habitats along migration routes.	Suitable nesting habitat absent and the property does not intersect species' current known breeding distribution. There are no CNDDDB records for the species in the property area. Bald eagles are not expected to breed in the area, but may occur as migrants. Low potential to occur as a migrant.

Species	Listing Status	Habitat Association	Potential in Area
Bank swallow (<i>Riparia riparia</i>)	ST	Historically found along large, lowland rivers, and along the coast in Southern California. Breeding ranges are restricted to the Sacramento Valley (Sacramento and Feather rivers), northeastern California, and small areas of the central and north coast. Inhabits riparian lowlands and nests in colonies. Requires vertical cliffs or soft banks with fine textured soils near streams, rivers, lakes, and ocean for nesting. Suitable nesting habitat declining from flood control measures (river channelization and artificial bank stabilization). Winters in South America.	Vertical cliffs or soft banks of Cache Creek may provide suitable nesting substrate. Suitable foraging habitat exists over the creek. CNDDDB records exist within 10 miles of the property. High potential to occur.
Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT	Uncommon to rare. Inhabits canyons with oaks and conifers. Roosts during the day in trees; hunts at night from perch for small mammals.	Suitable habitat does not exist on the property. Not expected to occur.
Mammals			
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Inhabits desert and canyon habitats through mixed coniferous forests. Daytime roosts in caves, mines, hollow trees, and other shelters. Nighttime roosts in buildings, caves, mines, and cliff overhangs.	There are no CNDDDB records for the species in the property area. However, anthropogenic structures on the property provide potential nighttime roosting habitat. Low potential to occur.

Species	Listing Status ¹	Habitat Association	Potential in Area
Pacific Western big-eared bat (<i>Corynorhinus townsendii</i>)	CSC	Subspecies of Townsend's big-eared bat. Found in western desert scrub, pine forest regions, native grasslands, riparian communities, and active agricultural areas. Uses caves, rock crevices, buildings, artificial structures, and tree hollows for roosting. Forages along riparian edge habitats in a variety of wooded habitats. Females form maternity colonies in mines, caves, or buildings. Males roost individually. Winter hibernation in caves and abandoned mines. Sensitivity to disturbance at roosting sites.	There are no CNDDDB records for the species in the property area. However, anthropogenic structures on the property provide potential roosting habitat. Low potential to occur.
American badger (<i>Taxidea taxus</i>)	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not observed; however, smaller mammal burrows in friable soils were observed near Cache Creek, which may represent suitable prey. Low potential to occur.

Source: CNDDDB, 2007; CNPS, 2007; Moyle, 2002; Sibley, 2003; Stebbins, 2003; USFWS, 2007a; USFWS, 2007b.

¹Definitions

Federal	California	California Native Plant Society
FE Federally endangered	SE State endangered	IB Rare, threatened, or endangered in California and elsewhere
FT Federally threatened	ST State threatened	
CH Critical habitat	CSC California species of concern	
FC Federal candidate for listing	CFP California fully protected	
FD Federally delisted		
CCH Candidate for critical habitat		

Delineation of Jurisdictional Waters and Wetlands

Fieldwork for the delineation was conducted May 22, 2007 by TRC biologists Ceri Williams-Dodd and Ryan Villanueva. The delineation involved walking the extent of all drainages/features on the property and physically identifying hydrologic, vegetative, and geomorphic characteristics within the property in order to delineate jurisdictional waters, including wetlands. Wetlands were identified by the “three-factor” approach, in which criteria for wetland hydrology, hydrophytic vegetation, and hydric soils must all be met to conclude that an area is wetland, as described in the 1987 Corps Wetland Delineation Manual. A separate delineation report was prepared, included as Attachment D.

4.0 CACHE CREEK AREA PLAN

Yolo County has adopted the Cache Creek Area Plan which includes the Cache Creek Resource Management Plan (CCRMP) and the OCMP. The CCRMP governs activities within the banks and the 100-year flood plain of Cache Creek, and the OCMP governs mining operation and reclamation activities outside of the channel. Adoption of the CCRMP discontinued commercial mining within the active creek channel, and the goals, objectives, actions, and Performance Standards of the CCRMP aim to:

- Improve the stability of the channel;
- Minimize flood damage;
- Restore wildlife;
- Prescribe standards and regulations for initial channel smoothing and shaping;
- Recommend ongoing maintenance activities and creek restoration efforts;
- Provide year-round flows in many portions of the creek;
- Identify restoration project areas (including restoration and enhancement of previously mined areas adjoining the active channel creek);
- Provide buffers for existing and future agriculture from restoration and recreation areas.

The Yolo County Cache Creek Improvement Plan includes implementation of Test 3 Line as part of the CCRMP, which includes construction of engineered channel embankments at key locations to improve channel hydraulics. Yolo County holds a general permit that covers minor bank and channel stabilization, habitat management, and floodway management projects within the 100-year floodplain that are consistent with the CCRMP. A Flood Hazard Development Permit may be applied for directly from the County to conduct these types of activities within the CCRMP area (County of Yolo, 2007). Conditions of approval under this permit include compliance with all applicable requirements of CDFG Streambed Alteration Agreement R2-2002-251 (issued August 30, 2002), Corps General Permit #58 (issued May 1, 2004), RWQCB 401 Certification dated August 28, 2002, and the USFWS September 19, 1996 Programmatic Formal Consultation pursuant to the draft and final Supplemental Environmental Impact Report (EIR) dated April 2002 and July 2002 respectively. The Flood Hazard Development Permit also requires compliance with existing approved spill prevention and emergency plan (or equivalent procedures), and a requirement to return the disturbed low flow creek channel to the original alignment and conditions upon completion of the project.

Granite's submittal includes a net benefit proposal with implementation of a segment of the Test 3 Line for Cache Creek, which has already been analyzed under separate environmental documents and will require the approval of a Flood Hazard Development Permit for Yolo County. The Test 3 Line implementation is not a part of Granite's proposed project and is therefore not considered in this BA.

5.0 DESCRIPTION OF THE PROPERTY

The Granite Esparto property consists mainly of agricultural production, including row crops, English walnut (*Juglans regia*) orchards, and almond (*Prunus dulcis*) orchards. A portion of the property includes nonnative grassland that appears to have been previously disturbed (graded), and the southern quarter of the property includes an access road to Granite Construction's existing gravel mining operation and the banks and bed of Cache Creek. A small rural/agricultural development exists at the center of the property, and consists of a house, a barn, and associated smaller structures. A network of irrigation ditches crosses the property north of the gravel mining access road, and West Adams Canal runs along the northern edge and northwestern corner of the property.

A majority of the property is regularly disturbed by farming practices and is not likely to support many terrestrial special-status species that have potential to occur at the property. Orchards and ornamental trees may provide roosting habitat for some of the special-status avian species that were identified in the literature review, though suitable nesting trees are limited to a few larger ornamental trees near the house and a few small stands of cottonwood near the creek. The grasslands and riparian areas adjacent to Cache Creek are less disturbed and are more likely to host some of the sensitive species described above.

Ornamental native and nonnative plant species, including toyon (*Heteromeles arbutifolia*), oleander (*Nerium oleander*), valley oak (*Quercus lobata*), eucalyptus (*Eucalyptus globulus*), sycamore (*Platanus racemosa*), juniper (*Juniperus californica*), and pine (*Pinus* spp.) have been planted along Fulton and Frank Lane and near the developed areas around the house and barn. Nonnative grasses make up a majority of the rest of the plant species that were observed above the gravel mining access road. Species typical of Central Valley riparian habitats were observed near Cache Creek, including Fremont cottonwood (*Populus fremontii*), willow (*Salix* spp.), and mule's fat (*Baccharis salicifolia*).

A list of species observed during the habitat assessment is included as Attachment E.

5.1 PLANT COMMUNITIES AND HABITAT TYPES

The property and surrounding areas support the following plant communities:

- Great Valley Willow Scrub
- Irrigated Row Crop
- Nonnative Grassland

- Orchard
- Riverine
- Ruderal/Ornamental
- Fence Row

Great Valley Willow Scrub

Great Valley Willow Scrub typically consists of an open to dense, broadleafed, winter-deciduous, shrubby, streamside thicket dominated by any of several willow species. Dense stands usually have little understory or herbaceous component. More open stands have grassy understories, usually dominated by introduced species. A majority of the Great Valley Willow Scrub along Cache Creek on the property has sparse stands of cottonwood with an open understory dominated by willow and other low shrubs and grasses including ripgut brome (*Bromus diandrus*), Mexican tea (*Chenopodium amnrosioides*), and hedge mustard (*Sisymbrium officinale*).

Great Valley Willow Scrub is located along the margins of Cache Creek. A small segment of this habitat type that includes approximately five larger cottonwood trees occurs along the south side of Cache Creek and will not be disturbed by the project. These trees may provide suitable nesting or roosting sites for raptors. To this extent, the cottonwood component of Great Valley Willow Scrub habitat has a high value to avian species, but constitutes a relatively small proportion of this habitat type within the project area. In general, Great Valley Willow Scrub has moderate habitat value for special-status species with the potential to occur in the project area.

Irrigated Row Crop

Irrigated row crops make up a majority of the agricultural production area on the property. During the assessment, onions were the only identified crop. Other fields had newly-sprouted vegetable crops, or were not yet planted.

Avian species may forage in these areas, as a northern harrier was observed foraging and a number of species, including mallard (*Anas platyrhynchos*), western kingbird (*Tyrannus verticalis*), and killdeer (*Charadrius vociferous*), were observed in or adjacent to these fields. However, the highly disturbed nature of row crops makes them unlikely to host special-status species beyond occasional foraging or incidental occurrence. Thus, this habitat type has a low value for special-status species with the potential to occur in the project area.

Nonnative Grassland

Nonnative grassland covers a portion of the property west of the walnut orchards and south of Fulton and Frank Lane. It also covers the slope between the gravel mining access road and the great valley willow scrub habitat north of Cache Creek. This habitat consists of a dense to sparse cover of annual grasses interspersed with flowering stalks approximately 1 to 3 feet high. It provides suitable habitat for a number of species, including burrowing mammals (such as ground squirrel (*Spermophilus beecheyi*) and American badger, and suitable foraging habitat for a number of species. Two large gopher snakes (*Pituophis catenifer*) were observed basking in

small mammal burrows along the slope of the gravel mining access road nearest Cache Creek in nonnative grassland habitat, and one was observed dead on the road adjacent to nonnative grassland.

Stands of cottonwood trees were observed interspersed along the margins of the nonnative grassland habitat where water sources from irrigation and Cache Creek were persistent. Several blacktail jackrabbits (*Lepus californicus*) were observed in the nonnative grassland habitat adjacent to the Granite Capay Facility access road. One Swainson's hawk was observed along the southern bank of Cache Creek, and a number of avian species were observed flying over the area, including cliff swallow (*Hirundo pyrrhonota*), turkey vulture (*Cathartes aura*), California quail (*Calipepla californica*), mourning dove (*Zenaida macroura*), belted kingfisher (*Ceryle alcyon*), red-winged blackbird (*Agelaius phoeniceus*), and northern harrier.

Nonnative grasslands may provide suitable foraging and nesting opportunities for a number of species and this habitat type has moderate habitat value for special-status species with the potential to occur in the project area. However, nonnative grassland constitutes a relatively small proportion of the project area, and project impacts will not represent a significant loss of this type of habitat due to its abundance in the surrounding area.

Orchard

English walnut orchards are located just south of Fulton and Frank Lane on the eastern edge of the property and on a thin strip of land along the western edge of the property. An almond orchard is located in the northwest corner of the property. The soil around these orchards is regularly irrigated and fertilized, and pesticides are applied near the trunks of the trees. Though vegetation under the trees is sparse, some shorter grasses do grow where the soil is undisturbed.

Orchards on the property provide marginally suitable foraging habitat for a number of avian species – the use of any insecticides in this area would likely deplete suitable food sources. No nests were observed in orchard habitat during the assessment. The orchards are not likely to provide suitable nesting habitat for special-status species based on regular irrigation and maintenance of this area. Therefore, this habitat type has low value to avian and other special-status species with the potential to occur in the project area.

Riverine

Riverine habitat is located along the banks and in the bed of Cache Creek. This habitat consists predominantly of gravel bars and open water, with patches of riparian vegetation consisting of mule's fat and willow species near persistent water sources. Where seasonal water flow becomes ponded, marsh-like habitat may develop. One pool of ponded water was supporting a small strip of marsh-like habitat with tules (*Schoenoplectus acutus* var. *occidentalis*), cattail (*Typha* spp.), and other emergent species. At the time of the assessment, the flow in Cache Creek was low, covering only a small portion of the creek bed nearest the north bank.

Carcasses of two carp (*Cyprinus* spp.) were observed within the creek bed. One small, unidentified fish was observed swimming in the creek near the County Road 87 bridge, and a number of swallows were seen foraging around the area. One northern harrier was observed foraging over the creek bed.

Due to the barren nature of the riverine habitat and the highly disturbed nature of the flow regimes in Cache Creek within the assessment area, special-status species are not expected to occur in great numbers. Though special-status aquatic species such as steelhead or Chinook salmon occurred historically in Cache Creek and Chinook were observed just downstream of the property during a 2000 toxicity study (Moyle and Ayres, 2000), poor water quality and difficult access to the creek near the property significantly reduce the potential for aquatic special-status species to utilize Cache Creek for spawning and rearing. Avian and terrestrial special-status species may utilize riverine habitat on the property for foraging and as a water source. Thus, riverine habitat has a moderate value to special-status species that have potential to occur within the project area.

Ruderal/ Ornamental

Ruderal vegetation is generally dominated by nonnative weedy species in significantly disturbed areas. The roads on the property are bordered by ruderal vegetation where disturbance is constant and includes tilling and mowing. Ornamental species, including toyon, oleander, valley oak, eucalyptus, sycamore, juniper, and pine, have been planted along some of the roads and around the house and barn on the property, and are surrounded by nonnative grasses and small shrubs. Three smaller areas along the western edge of the property, where farm equipment and brush have been stored, also consist of ruderal vegetation. Ruderal and ornamental areas on the property may provide suitable foraging habitat for avian and terrestrial species, and larger ornamental shrubs or trees may provide marginal nesting substrate for avian species. However, due to the regularly disturbed nature of this type of habitat, ruderal/ornamental habitat has a low value to special-status species with the potential to occur within the project area.

Fence Row

Fence row habitat typically consists of scattered native trees, shrubs, and ground covers within field margins. Fence row habitat was assessed pursuant to County Ordinance 10-5.509. There is negligible fence row habitat located on the property. Approximately 5 walnut trees and 10 shrubs occur near the southeast corner of the southern orchard along the edge of the Granite haul road. Also, one pine tree exists across from the barn, and some ornamental vegetation along Fulton and Frank Lane. No other areas represent fence row habitat within the property. Due to the overall lack of vegetation, fence row habitat has a very low value to special-status species that have potential to occur in the project area.

5.2 JURISDICTIONAL WATERS AND WETLANDS

As outlined in the delineation report included as Attachment D, CDFG "waters of the State" on the property include 47 acres (43.3 acres of riverine habitat and 3.7 acres of Great Valley Willow Scrub) within Cache Creek and adjacent riparian habitat. The U.S. Army Corps of Engineers

(Corps) and Regional Water Quality Control Board (RWQCB) “waters of the U.S.” include the 43.3 acres of riverine habitat within Cache Creek. Of this, a total of 0.1 acre consists of Corps jurisdictional wetlands. The remaining 43.2 acres would be considered Corps jurisdictional non-wetland waters. The wetlands appear to have developed in depressional areas within the creek bed, created as a result of scour and subsequent ponding of water. A summary of jurisdictional waters and wetlands on the property is provided in Table 2, below. The acreages of jurisdictional waters and wetlands are the total for the ±390 total land surveyed (i.e., two full parcels). The project will not impact state or federal jurisdictional waters or wetlands. The disturbance to the northern edge of the jurisdictional waters will occur exclusively as a result of Granite’s proposal to implement a portion of the County’s Test 3 line. A visual screening berm will be constructed on top of the Test 3 Line implementation area on the south side of the Capay haul road. Surface mining operations will be limited to the area north of the existing Capay haul road.

Table 2: Summary of Jurisdictional Waters and Wetlands on the Property

Waters of the State (Acres)	Waters of the U.S. Non-Wetland (Acres)	Wetlands (Acres)
47	43.2	0.1

6.0 SPECIES ACCOUNTS AND STATUS OF SPECIES ON THE PROPERTY

6.1 SENSITIVE WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON THE PROPERTY

The CNDDDB documents several special-status wildlife species occurrences within the vicinity of the property, and suitable habitat was observed on the property for many of the species found on USFWS, NMFS, and CDFG lists. The following section describes the habitat requirements for special-status species that were determined to have potential to occur on the property based on the literature review and the property assessment.

Western Spadefoot Toad (*Spea hammondi*)

The western spadefoot toad is a California species of concern. It ranges from the northern end of California's Central Valley south into northwest Baja California. It also ranges east of the Sierras and the deserts, from near sea level up to 4,000 ft (1,200 m). The spadefoot prefers open areas with sandy or gravelly soils, in a variety of habitats, including mixed woodlands, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. The spadefoot breeds from January to May in temporary pools and quiet streams that do not contain bullfrogs, fish, or crayfish. The species burrows into drying pool bottoms or seeks refuge in mammal burrows to pass the dry season (Stebbins, 2003).

Western spadefoot toads may utilize the riverwash and upland areas adjacent to Cache Creek. Loose soils in the assessment area may provide potential aestivation habitat. Though no CNDDDB

records were found for this species, there is a low potential for the western spadefoot toad to occur in the area near Cache Creek.

Western Pond Turtle (*Clemmys marmorata*)

The western pond turtle is a California species of concern. In California, western pond turtles were historically present in most Pacific-slope drainages between the Oregon and Mexican borders (Jennings and Hayes, 1994). The turtle is divided into two subspecies; the northwestern sub-species (*C. m. marmorata*) and the southwestern sub-species (*C. m. pallida*). This assessment focuses on the northwestern sub-species. The turtle is associated with still or slow-moving, permanent or nearly permanent aquatic habitats with access to suitable basking sites (logs, rocks, or open banks), and nearby upland nesting habitat. Western pond turtles are thoroughly aquatic and can be found throughout the state inhabiting woodland, grassland, and open forest habitats that contain ponds, permanent pools along intermittent drainages, lakes, marshes, rivers, streams, or irrigation ditches with rocky or muddy bottoms and emergent or aquatic vegetation (Stebbins, 2003).

The western pond turtle is not known to occur in the property area from CNDDDB records, but suitable habitat exists along Cache Creek. Upland areas surrounding this waterway could provide suitable nesting habitat. Thus, the western pond turtle has moderate potential to occur in the property area.

Tricolored Blackbird (*Agelaius tricolor*)

The tricolored blackbird is a California species of concern. Tricolored blackbirds are nearly endemic to California and the vast majority of the breeding population occurs in the Central Valley (and encompasses all valley counties), with populations also occurring in northeastern California and along the central and southern California coast. Nesting colonies are vulnerable to agricultural practices, wetland alteration and destruction, introduced predators, pesticides, and poisons. The species is a colonial nester that requires a protected nesting substrate of tall, emergent, or shrubby vegetation over or near open water. Foraging habitat includes annual grasslands, seasonal wetlands, agricultural fields, riparian areas, and cattle dairies. This species may visit lowland areas within mixed species flocks from October through March (Hamilton, 2004).

The emergent vegetation along freshwater habitat in Cache Creek and along area canals may provide suitable nesting habitat for the tricolored blackbird. However, due to its narrow and sparse nature, it may not provide enough protection to nesting birds from predators. CNDDDB records in Yolo County have documented tricolored blackbirds using linear habitats that are likely no wider than the emergent vegetation observed during the habitat assessment. Brush thickets scattered throughout the area also provide suitable nesting substrates. Therefore, the species is considered to have moderate potential for occurrence in the area.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is a California species of concern. Burrowing owls range throughout most of the interior western United States, southern Canada, the Central Valley of California, southern California, throughout Mexico into Central America, and along the western half of Florida. The species is declining, with many populations extirpated from habitat loss/fragmentation and burrowing rodent control (Johnsgard, 1990; Klute et. al., 2003). Burrowing owls inhabit open, dry, gently rolling to flat grasslands, scrublands, road and railway rights-of-way, open urban habitats (i.e. airfields, campuses, and golf courses), and agricultural lands. Essential habitat characteristics for the burrowing owl are low-growing, sparse vegetation, and the occurrence of larger burrowing rodents, such as ground squirrels and prairie dogs (Klute et.al., 2003). One occupied burrowing owl nesting burrow was observed within suitable habitat on the adjacent mining operations to the west during surveys conducted in 1995 (Zentner and Zentner, 1995).

Grasslands in the study area had limited burrowing owl nesting potential, as suitable burrows were scarce at the time of survey. Burrowing mammals such as ground squirrels were not observed during the assessment, nor were many suitable burrows. Due to the highly modified nature of agricultural lands, the minimal amount of mammal burrows found on the property, and the lack of CNDDDB records for the species, there is only a low potential for burrowing owls to occur.

Ferruginous Hawk (*Buteo regalis*)

The ferruginous hawk is a California species of concern. The hawk's breeding range encompasses most of the interior western United States and central-southern Canada. The species winters throughout southwestern North America and into Mexico. The species is wholly a winter migrant in California. Reasons for declines include loss of suitable breeding and wintering habitat. The ferruginous hawk inhabits sagebrush flats, desert scrub, low foothills surrounding valleys, fringes of pinyon-juniper habitats, and semi-arid grassland habitats with scattered trees, rock outcroppings, and riparian corridors with tall trees. Suitable habitats must support the hawk's main diet components, which are large rodents and lagomorphs (black-tail jackrabbits) (Johnsgard, 1990).

The open grasslands in the southern portion of the property provide suitable wintering habitat for the ferruginous hawk. Though the riparian corridor along Cache Creek on the property does not consist of many tall trees, an abundance of lagomorphs was observed during the assessment, which would provide foraging opportunities for the hawk. Though no CNDDDB records were found for the species, there is a moderate potential for the hawk to occur as a winter resident.

Swainson's Hawk (*Buteo swainsoni*)

The Swainson's hawk is listed as threatened in California. Its breeding range includes the interior western United States, northern-central Mexico, northeastern Alaska and northwestern and south-central Canada, and the Central Valley of California; it winters primarily in South America (Johnsgard, 1990). Breeding occurs from March to August (Dunne et al., 1988). Threats include loss of preferred mature riparian forest nesting habitat, loss or adverse modification of high-

quality foraging habitat (open grasslands and high-prey yielding crops, such as alfalfa) from development or conversion to incompatible (low-prey yielding) crop types, and pesticide use on migration route and wintering areas (Woodbridge, 1998).

Nesting habitat consists of open areas with stands of few, dense-topped trees in juniper-sage flats, riparian areas, and oak savannas. Foraging habitat consists of open grasslands, grain, and alfalfa fields (supporting rodent populations) adjacent to nesting opportunities. Swainson's hawks typically nest in stands with only a few trees in the above-mentioned habitats, as well as within agricultural areas. Hawks can become relatively habituated to human presence and activity. They readily occupy habitat within agricultural and rural residential areas, usually along roadsides where suitable nest trees are located, but sudden changes in activity regimes (construction in previously open areas, or human intrusion) frequently causes nest abandonment, particularly during certain times of the breeding season (Johnsgard, 1990; Woodbridge, 1998).

Suitable nesting habitat on the property is limited to a few stands of cottonwood near Cache Creek, though adjacent land provides numerous nesting opportunities for the Swainson's hawk. Marginal foraging habitat exists on the property in grassland areas and over agricultural fields. One Swainson's hawk was observed within the property, perched in a dead tree along the south bank of Cache Creek. Though nesting and foraging habitat is only marginal in the project area, surrounding areas provide habitat for the species. Thus, the Swainson's hawk is considered to have moderate potential to nest and forage in the property area, but high potential for incidental occurrence as a migrant to and from adjacent nesting and foraging sites.

Mountain Plover (*Charadrius montanus*)

The mountain plover is a California species of concern. The plover breeds in the interior states of Montana, Wyoming, Colorado, New Mexico, and from the Texas Panhandle east to Nebraska. It winters from central California and southern Arizona southward into Mexico. Threats to the species are primarily attributed to the conversion of native prairies to croplands, significantly reducing the availability of suitable nesting habitat, and nest destruction from agricultural practices. The mountain plover is one of the few shorebirds that live in dry regions away from water, preferring short-grass prairies and dry lowland areas. They are often found on grassy or bare dirt fields. Currently, mountain plovers are also found on human-made landscapes such as sod farms, cultivated fields that may mimic their natural habitat associations, and other sites with little vegetation such as alkali flats (National Geographic Society, 2002; USFWS, 2003).

The grasslands and agricultural fields in the property area offer suitable wintering habitat for potentially occurring mountain plovers. One CNDDDB record of the plover was found approximately two miles north of the property. The species is considered to have moderate potential to winter in the area.

Northern Harrier (*Circus cyaneus*)

The northern harrier is a California species of concern. Formerly known as the marsh hawk, the northern harrier is a slim, long-winged, long-tailed, raptor of open country. In all of the various plumages, a white rump patch is exhibited. This hawk nests on the ground in shrubby vegetation,

usually at the edge of a marsh. The nest is built out of a large mound of sticks in wet areas, and a smaller cup of grasses on dry sites. Most of the nests are found in emergent wetlands or along rivers or lakes, but it may also nest in grasslands, grain fields, or on sage brush flats that are several miles from water. Harriers usually perch on the ground but will use fence posts or other low perches and occasionally trees (Johnsgard, 1990). In the winter, communal ground roosts of a few to hundreds of birds can be found.

The northern harrier can be found in annual grasslands on the Valley floor up to the lodgepole pine belt and alpine meadow habitats which can be as high as 10,000 feet. It breeds from sea level to 5,700 feet in the Central Valley and both slopes of the Sierra Nevada. In northeastern California, it is found to breed up to 3,600 feet. It frequents meadow areas, grasslands, open range lands, the desert sinks, and fresh and saltwater emergent wetlands. Northern harriers are seldom found in wooded areas. They appear to be permanent residents of the northeastern plateau and coastal areas, and a less common resident of the Central Valley. Wintering or migrant northern harriers were observed foraging on the adjacent mining operations to the west during surveys conducted in 1995 (Zentner and Zentner, 1995).

Northern harriers can be locally abundant where suitable habitat remains free of disturbance, especially from results of intensive agriculture. They rely on the use of tall grasses and forbs in wetlands, or at wetland/field borders, for suitable cover. These borders or edges are especially important for nesting, feeding and cover. Their home range usually includes a freshwater site. They are very defensive of their territory and will attack other birds of prey and humans during breeding season. Northern harriers feed mainly on voles and other small mammals, birds, frogs, small reptiles, some crustaceans, insects, and, on occasion, fish.

Two northern harriers were observed on the property and suitable foraging and nesting habitats exist in the property area. Thus, the species has a high potential to occur on the property.

White-tailed Kite (*Elanus leucurus*)

The white-tailed kite is fully protected in California. The kite is a permanent resident of river valleys, riparian woodlands, and adjacent open fields and marshes in California's Central Valley and along the west coast (Johnsgard, 1990; National Geographic Society, 2002). Possible declines may be due to conversion of agricultural lands to urban areas, clean farming techniques that reduce prey populations, increased interspecific nest-site competition, and human disturbance at nests (Dunk, 1995).

White-tailed kites are found in open grasslands, savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields with scattered trees for nesting and perching. They are often found along tree-lined river valleys with adjacent open areas, but are not usually found in forests or in clear cuts within forests. The white-tailed kite nests in dense, usually deciduous tree groves adjacent to open foraging areas, but will use oak woodlands and savanna as well. The nesting season is extended and variable depending on food availability, usually peaking from April to August, but beginning as early as February and ending as late as September (Johnsgard, 1990).

The assessment area's open grasslands and agricultural areas provide suitable foraging habitat for the white-tailed kite, though nesting opportunities on the property are limited. Thus, the white-tailed kite is considered to have moderate potential for occurrence.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is listed as endangered and fully protected in California, and was federally delisted on June 28, 2007. Currently, its main California breeding range is restricted to the northern Sierra Nevada, southern Cascade ranges, and interior northern Coastal range (Johnsgard, 1990; National Geographic Society, 2002). The bald eagle winters throughout its breeding range, but more frequently along coastal areas. It nests in large, mature trees, on cliffs near large bodies of water, or free-flowing rivers that provide an adequate fish prey base. The bald eagle requires large bodies of water for hunting and fishing, as well as adjacent snags or structures for perching. The species is highly susceptible to human disturbance during nesting activities. Threats include eggshell thinning from pesticide use, habitat loss, and human disturbance.

Very limited suitable nesting habitat is located in the assessment area, and the property is located outside current nesting distribution for the bald eagle. However, Cache Creek may provide foraging opportunities for the bald eagle, and the area may see an occasional migrant during the winter. No CNDDDB records of the bald eagle were found in proximity to the property. The species is considered to have a low potential for occurrence as a migrant.

Bank Swallow (*Riparia riparia*)

The bank swallow is listed as threatened in California. It is a locally common to uncommon breeding season resident in northern and central California (Garrison, 1998). Because nesting only occurs in suitable habitat, breeding areas are widely dispersed throughout northern and central California in major lowland valleys, and coastal areas where alluvial soils exist. The major breeding population is confined to the Sacramento and Feather rivers, and major tributaries north of their confluence (Laymon et al., 1988). The Sacramento River population represented approximately 50 percent of the state's population in 1987, and the population occurs between Redding, Shasta County, and the Yolo Bypass, Yolo County. The Feather River supported 25 percent of the state's population in 1987; this population occurs between Oroville, Butte County, and the confluence of the Sacramento and Feather rivers, Sutter County.

Other relatively large breeding populations of several colonies have recently been found in the following locations: 1) Scott River, Siskiyou County; 2) Cache Creek, Yolo County; 3) Pit River, Shasta and Lassen counties; 4) American River, Sacramento County; 5) Cosumnes River, Sacramento County; 6) Salinas River, Monterey County; 7) Fall River, Shasta County; 8) Hat Creek and Lake Briton area, Shasta County; 9) Susan River and Baxter Creek, Lassen County; 10) Tule and Lower Klamath Lake area, Siskiyou and Modoc counties; 11) Clear Lake Reservoir, Modoc County; 12) Indian Creek, Plumas County; 13) Long Valley Creek, Lassen County; and 14) Bishop area, Inyo County.

Single colonies are widely scattered at other locations, including: 1) Smith River, Del Norte County; 2) Fort Funston/Lake Merced, San Francisco County; 3) Ano Nuevo, San Mateo County; 4) Pajaro River, Monterey and Santa Cruz counties; 5) Lake Crowley, Mono County; 6) Bridgeport, Mono County (T. and J. Heindel pers. comm.); 7) Topaz Lake, Mono County (T. and J. Heindel pers. comm.); 8) Lake Shastina, Siskiyou County; and 9) Santa Clara River, Ventura County. Threats to the species are primarily attributed to habitat loss and alteration from bank protection projects (CDFG, 1992).

Nesting colonies only occur in vertical banks or bluffs of friable soils suitable for burrowing by these small birds. Banks or bluffs must be at least one meter tall to have some predator deterrence values, and some source of continual erosion is almost always present. Breeding habitat vegetation is extremely varied because breeding sites are mostly selected for the suitability of the nesting bank. Throughout California, colonies are mostly located amidst lowland vegetation types, including riparian forests dominated by willows (*Salix* spp.), and Fremont cottonwood (*Populus fremontii*). Many colonies along the Sacramento and Feather Rivers occur near cultivated crops, including deciduous orchards, irrigated row crops, and dryland grain crops. Colonies at coastal locations are located near coastal grassland and coastal scrub communities, while colonies in montane environments in Shasta, Lassen, and Plumas counties occur in coniferous forests where pines and firs (*Abies* spp.) dominate. Colonies in northeastern California occur under irrigated pasture, riparian forests, and desert shrub habitats (Garrison, 1998).

River bank habitat along Cache Creek provides potential nesting substrate for the bank swallow. Agricultural fields and waterways provide suitable foraging opportunities. Numerous CNDDDB records of the species exist along Cache Creek. The species is considered to have high potential for occurrence.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is a California species of concern. Pallid bats occur throughout California, except in the high Sierra Nevada, from Shasta to Kern counties and the northwestern corner of the state from Del Norte and western Siskiyou counties (Hall, 1981 in CDFG, 1995). These bats inhabit a variety of habitats, including grasslands, shrublands, woodlands, and forests from sea level through mixed coniferous forests. They are common in grasslands and desert regions in the southwestern United States, and most abundant in the sonoran life zones; less abundant in evergreen and mixed forests than in vegetation assemblages characteristic of lower elevations (Hermanson, 1983 in CDFG, 1995). Pallid bats reside yearly in the majority of their range and they have been collected at sites up to 8,000 feet in elevation. In California pallid bats are associated with oak woodlands at lower elevations (BioSystems, 1994 in CDFG, 1995) and may roost in a variety of places, including tree cavities, rock crevices, and manmade structures.

Pallid bats travel 0.31 to 1.55 miles from the day roost for foraging. They will make longer movements to hibernation sites and for post-breeding dispersal, yet they are year long residents in most areas. Copulation occurs from late October to February and pregnancy averages nine

weeks with one to three young born from April to July. Lactation may occur from the beginning of May through the middle of August; the young are weaned at seven weeks, and begin to fly at four to five weeks of age (Hermanson, 1983 in CDFG, 1995). Pallid bats feed on large insects usually taken from the ground and activity is infrequent below 35 degrees Fahrenheit.

Manmade structures within the property may provide suitable roosting habitat for the pallid bat and foraging opportunities exist all around the property. However, as most of the property is continually disturbed, there is only a low potential for this species to occur.

Pacific Western Big-eared Bat (*Corynorhinus townsendii townsendii*)

The Pacific western big-eared bat is a subspecies of Townsend's big-eared bat and is a California species of concern. This bat is found throughout western North America, from British Columbia south to Oaxaca, Mexico, with two endangered subspecies in isolated areas in the Ozark and Central Appalachian regions of the United States. Threats include habitat loss and human disturbance (BCI, 2007). The Pacific western big-eared bat's most typical habitat is arid western desert scrub and pine forest regions. In the spring and summer, females form maternity colonies in mines, caves, or buildings, while males roost individually. In winter, these bats hibernate in caves and abandoned mines. They are extremely sensitive to disturbance at their roosting sites and have suffered severe population declines throughout much of the United States (BCI, 2007). These bats use caves, rock crevices, buildings, artificial structures, and tree hollows for roosting and forage along riparian edges in a variety of wooded habitats.

Manmade structures in the property area may provide potential roost and maternity sites. Other typical hibernation and young-rearing sites (mines and caves) were not observed. No CNDDDB records exist for the species in the property area. However, as suitable foraging habitat does exist along the riparian areas adjacent to Cache Creek, the species is considered to have low potential for occurrence.

American Badger (*Taxidea taxus*)

The American badger, a California species of concern, was once fairly widespread throughout the open grassland habitats of California. Badgers are now an uncommon, permanent resident found throughout most of the state, with the exception of the northern North coast area. They are most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions: prairies, park lands, and cold desert areas. Cultivated lands have been reported to provide little usable habitat for this species (CDFG Bay Delta Region, 2007).

Badgers are basically solitary, nocturnal creatures, foraging at night and then remaining underground during the daylight hours. Badgers dig burrows for cover with 8- to 12-inch elliptical entrances in friable soils. These burrows generally have a single entrance. This animal frequently reuses old burrows, although some have been known to dig a new den each night, especially in summer. Soil excavated during formation of the den is piled at the entrance. Often when a den is occupied in cold weather, the tunnel is partially plugged (CDFG Bay Delta Region, 2007).

The badger feeds mainly on small mammals, especially ground squirrels, pocket gophers, rats, mice, and chipmunks. Badgers capture their prey by digging out the animal's burrows. The badger captures some of its prey above ground, foraging on birds, eggs, reptiles, invertebrates, and carrion. Its diet will shift throughout the year depending upon prey availability. The American badger is known to bury surplus food.

The American badger is somewhat tolerant of human activities. Predator control with the usage of indiscriminate trapping and poisons, along with habitat loss have caused extensive losses. Additionally, vehicular accidents, farming operations, and indiscriminate shootings are also causes of mortality. Being a burrowing animal, deaths caused by other factors may easily go undetected. Larger predators such as coyotes occasionally kill badgers (CDFG Bay Delta Region, 2007).

Extensive cultivation of surrounding lands and lack of numerous burrowing prey species make the property unlikely to support the American badger. However, as friable soils and some mammal burrows were observed near Cache Creek, there is a low potential for this species to occur.

6.2 SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR ON THE PROPERTY

The CNDDDB documents four special-status plant species occurrences within the vicinity of the property. None of these species were determined to have potential to occur on the property based on the lack of suitable habitat.

7.0 POTENTIAL PROJECT IMPACTS

7.1 INTERRELATED AND INTERDEPENDENT IMPACTS

The project is not interrelated with any other action, and there are no known interdependent effects.

7.2 CUMULATIVE IMPACTS

Cumulative impacts include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BA. Future federal actions that are unrelated to the proposed action are not considered in this section because they will be subject to separate consultation by the Corps and USFWS pursuant to Section 404 of the CWA and Section 7 of the Endangered Species Act, as appropriate.

There are no other known mining operations, developments, or road expansions proposed in the surrounding area that would contribute to cumulative impacts. Existing land uses include the Capay mine to the immediate west, and agricultural operations that dominate the surrounding area.

7.3 IMPACTS TO EXISTING VEGETATIVE COVER AND WILDLIFE HABITAT

The portion of the property proposed for impacts by the project is limited to north of the Capay haul road. This area supports four habitat types:

- Irrigated Row Crop
- Nonnative Grassland
- Orchard
- Ruderal/Ornamental

Irrigated Row Crop

Irrigated row crops make up a majority of the agricultural production on the property. This habitat has a low value for special-status species due to the nature of the row crops with extensive plowing, planting and crop maintenance disturbances occurring on a frequent basis. The impact to irrigated row crop area will be **less than significant** considering the low value for wildlife and the expanses of similar habitat in the surrounding agricultural region, and because the habitat is not designated as critical habitat for any sensitive species.

Nonnative Grassland

Nonnative grassland covers a portion of the property west of the walnut orchards and south of Fulton and Frank Lane, and also the slope between the gravel mining access road and the Great Valley Willow Scrub habitat north of Cache Creek. This habitat has a moderate habitat value for special-status species, but constitutes a relatively small proportion of the project area and is in abundance in the surrounding area. The nonnative grassland that occurs within the 313-acre surface mining area will be impacted by the project. The impact will be **less than significant** considering there is a limited area impacted compared to the available similar habitat in the region, and that this habitat does not have high value for special status species and is not designated as critical habitat for any sensitive species.

Orchard

English walnut orchards are located just south of Fulton and Frank Lane on the eastern edge of the property and on a thin strip of land along the western edge of the property. An almond orchard is located in the northwest corner of the property. This habitat has a low value to avian and other special-status species with the potential to occur on the property. All orchard areas on the property will be impacted by the project. The impact will be **less than significant** due to the low value for special-status species and the expanses of similar habitat in the region, and because the habitat is not designated as critical habitat for any sensitive species.

Ruderal/ Ornamental

Ruderal/ornamental vegetation on the property is present bordering roads, and around the house, barn and farm equipment storage areas. Due to the regularly disturbed nature of this type of

habitat, it has a low value to special-status species with the potential to occur within the project area. All ruderal/ornamental habitat on the property will be impacted by the project. The impact will be **less than significant** considering the limited area involved and the low value to special status species, and because the habitat is not designated as critical habitat for any sensitive species.

7.4 IMPACTS ON SENSITIVE NATURAL COMMUNITIES

Cache Creek could be considered a sensitive natural community. The project will not impact this community. Impacts to the northern bank of Cache Creek for implementation of the County's Test 3 Line will be conducted in compliance with the Flood Development Hazard Permit and conditions associated with the regulatory permits (CDFG, Corps, RWQCB and USFWS) pursuant to the CCRMP.

7.5 DISTURBANCE TO WILDLIFE MOVEMENT CORRIDORS

Cache Creek is the only significant wildlife movement corridor on the property. The project will not impact this corridor. Impacts to the northern bank for implementation of the County's Test 3 Line will be conducted in compliance with existing regulatory permits pursuant to the CCRMP that has a goal of creating a continuous corridor within the Creek.

7.6 IMPACTS ON SPECIAL-STATUS SPECIES

Only two special-status species (Swainson's hawk and Northern harrier) were observed during field surveys. Of the total 14 special-status species with a potential to occur on the property, the project area has the potential to support a total of 10 special-status species rated as low (total of four species), moderate (total of five species) or high (total of one species). Potential impacts to these species are outlined below.

General potential construction-related impacts to special-status species can include direct impacts to individuals, eggs, burrows, or nests through excavation, crushing, burial, displacement, or disturbance; and indirect impacts through loss of nesting or foraging habitat, noise, or water contamination from sediment or spilled materials such as diesel fuel. No indirect impacts are expected as a result of surface water or groundwater contamination or sediment loading because the project will implement and maintain water quality measures pursuant to federal, state and local regulatory standards, including Best Management Practices pursuant to the RWQCB Water Quality Certification for the CCRMP. Therefore this impact will not be assessed further.

Impacts to Species with a High Potential to Occur in the Project Area

Northern Harrier

Two northern harriers were observed on the property and potentially suitable foraging and perching nesting habitats exist in the project area within nonnative grassland habitat and small trees/shrubs. The potential for impacts to northern harrier individuals or nests in these areas can be effectively mitigated through measures recommended in Section 8.0, including avoiding disturbance to nesting habitat during the nesting season when possible, or conducting preconstruction surveys during the nesting season and avoiding any active nests. Establishing an avoidance buffer around any active nests will mitigate for potential indirect noise impacts. Once ground in a given area is disturbed and suitable nesting/roosting/perching habitat within the project area has been disrupted or removed, it is unlikely that this species will return to nest, roost or perch, so no further direct impacts would be expected. Indirect impacts through the removal of nesting, roosting and perching habitat for this species (small shrubs and trees, as well as nonnative grassland) will be **less than significant** since suitable ground nesting sites are limited in the project area and there is similar habitat in the surrounding area. Impacts to foraging habitat will be **less than significant** due to the relatively small portion of non-grassland within the project area, and due to the presence of habitat in the surrounding area. In addition, impacts to habitat will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project.

Avoidance measures for potential impacts recommended in Section 8.0 are expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Impacts to Species with a Moderate Potential to Occur in the Project Area

Tricolored Blackbird

Potentially suitable habitat within the project area is limited to nonnative grassland and agriculture areas for foraging. Indirect impacts to tricolored blackbirds through the removal of potential foraging sites will be **less than significant** because abundant agriculture and riparian habitat exists around the project area for foraging. In addition, impacts to foraging habitat will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project. No further mitigation measures are considered necessary.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Ferruginous Hawk

Potentially suitable nesting and roosting habitat for the ferruginous hawk within the project area is limited and consists of large trees (often a single large tree in an isolated/open area [CDFG, 2005]). Suitable foraging habitat consists of nonnative grassland. The potential for ferruginous hawk individuals or nests to be impacted can be effectively mitigated through measures recommended in Section 8.0, including avoiding disturbance or removal of trees during the breeding season when possible, or conducting preconstruction surveys during the breeding season and avoiding any active nests. Establishing an avoidance buffer around any active nests will mitigate for potential indirect noise impacts. Once suitable nesting habitat within the project area has been disrupted or removed, it is unlikely that this species will return to nest, so no further direct impacts would be expected. Loss of foraging habitat for this species will be **less than significant** considering there is a limited area impacted compared to the available similar habitat in the region, and the property is not designated as critical habitat for the species. Impacts to habitat will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Swainson's Hawk

Potentially suitable Swainson's hawk habitat is limited to row crop and grassland habitat for foraging. Indirect impacts on Swainson's hawk foraging habitat will be **less than significant** considering there is a limited area impacted compared to the available similar habitat in the region, and the property is not designated as critical habitat for this species.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state threatened species. Therefore, if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Mountain Plover

Potentially suitable winter roosting and foraging habitat for mountain plovers within the project area consists of grassland habitat. This species breeds out of state, therefore no suitable nesting habitat is present on the property. The potential for mountain plover individuals to be impacted is expected to be **less than significant**, as initiation of construction activities would deter birds from roosting. Once suitable roosting habitat within the project area has been disrupted or removed, it is unlikely that this species will return to roost, so no further direct impacts would be expected. Indirect impacts to mountain plover through removal of suitable roosting/foraging

grasslands for wintering individuals is expected to be **less than significant** as grasslands constitute a small portion of the project area, and due to the fact that additional habitat exists in the surrounding area. In addition, impacts to habitat will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project. No further mitigation measures are considered necessary.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

White-tailed Kite

Potentially suitable nesting/roosting and foraging for white-tailed kite within the project area consists of trees and open agriculture/grassland habitat, respectively. The potential for white-tailed kite individuals or nests to be impacted can be effectively mitigated through measures recommended in Section 8.0, including avoiding disturbance or removal of trees during the breeding season when possible, or conducting preconstruction surveys during the breeding season and avoiding any active nests. Establishing an avoidance buffer around any active nests will mitigate for potential indirect noise impacts. Once suitable nesting habitat within the project area has been disrupted or removed, it is unlikely that this species will return to nest within the project area, so no further direct impacts would be expected. Indirect impacts through the removal of potentially suitable nesting and foraging areas (trees and open grassland/agricultural habitat) is expected to be **less than significant** due to the presence of abundant habitat in the surrounding area, and because impacts will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state fully protected species. Therefore, if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Species with a Low Potential to Occur in the Project Area

Western Spadefoot Toad

Nonnative grassland in the vicinity of Cache Creek provides potential habitat for western spadefoot toad in the project area. If the toads are present they would aestivate in the nonnative grassland areas within burrows and crevices between June and December. The potential for the toad to be impacted can be effectively mitigated by either avoiding work in these areas during the times specified, or if work is required at these times by conducting surveys and avoiding any individuals present. Impacts to habitat are expected to be **less than significant** because any impacts to habitat will be mitigated through implementation of the Habitat Restoration and Landscape Visual Screening Plan for the project.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Burrowing Owl

Grassland and ruderal/ornamental habitats and edge areas of row crop fields (e.g. disturbed, but inactive berms, ruderal areas) within the project provide potential habitat for the burrowing owl. The potential for burrowing owl individuals or nests to be impacted can be effectively mitigated through measures recommended in Section 8.0, including avoiding disturbance or removal of agricultural and grassland habitats during the breeding season when possible, or conducting preconstruction surveys and either avoiding any active nests during the breeding season, or relocating owls outside of the breeding season. Establishing an avoidance buffer around any active nests will mitigate for potential indirect noise impacts. Impacts to habitat are expected to be **less than significant** due to the presence of habitat in the surrounding area and due to the proposed implementation of the Habitat Restoration and Landscape Visual Screening Plan.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Pallid Bat

Potential pallid bat habitat within the project area is limited to large trees within and adjacent to some of the farm structures in the central part of the property. The potential for pallid bat individuals or roosts to be impacted can be effectively mitigated through measures recommended in Section 8.0, including avoiding the removal of trees or construction activities in these areas during the breeding season (early May through mid-August). Impacts due to loss of roosting or foraging habitat is expected to be **less than significant** as habitat associated with Cache Creek will be avoided. Noise impacts to pallid bats are not expected, since the hearing and communication range of bats is known to be around 100 to 150dBA (pers comm.) which is above the typical range for construction activities.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Pacific Western Big-eared Bat

Pacific Western big-eared bat potential habitat within the project area is limited to large trees within and adjacent to some of the farm structures in the central part of the property. The potential for big-eared bat individuals or roosts to be impacted can be effectively mitigated through measures recommended in Section 8.0, including avoiding the removal of trees or construction activities in these areas during the breeding season (October through April [CDFG, 2005]). Impacts due to loss of roosting or foraging habitat is expected to be **less than significant** as habitat associated with Cache Creek will be avoided. Noise impacts to pallid bats are not expected, since the hearing and communication range of bats is known to be around 100 to 150dBA (pers comm.) which is above the typical range for construction activities.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

This species is a state species of special concern. Therefore if this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

Raptors and Migratory Birds

Potential nesting sites for migratory birds and raptors within the project area, including and in addition to the special-status species described above, consist of habitats such as trees and grasslands. Migratory birds and raptors are protected under the Migratory Bird Treaty Act and the California State Fish and Game Code, which prohibit take of birds and their active nests. Typical nesting season for most migratory birds is March through September. Raptors typically nest from February through August. Direct impacts to nests through removal or indirect impacts due to noise can be mitigated by avoiding disturbance to potential nesting sites during the nesting season, or by conducting preconstruction nesting bird surveys and avoiding active nests if any are found.

Mitigation for potential impacts recommended in Section 8.0 is expected to limit impacts to this species to a level that is **less than significant**.

7.7 MODIFICATIONS TO JURISDICTIONAL WETLANDS OR OTHER WATERS

The project area is outside of the jurisdictional waters and wetlands identified during the delineation of the property, provided as Attachment D, therefore no impacts will occur.

As described in Section 1.3, Yolo County has been issued permits by the regulatory agencies to implement the Test 3 Line under the CCRMP. The applicant proposes to implement a segment of

the Test 3 line as a net benefit to Yolo County. This has already been analyzed under separate environmental documents and will require the independent approval of a Flood Hazard Development Permit for Yolo County. The Test 3 Line implementation is not a part of the proposed project and therefore is not included in this BA.

8.0 IMPACT AVOIDANCE AND MINIMIZATION RECOMMENDATIONS

The Mitigation Measures (MM) outlined in this section are recommended in order to limit potential impacts to a level that will be **less than significant**.

MM-8.1 Have a qualified biologist provide environmental awareness training to all construction personnel before construction begins. The training should include species descriptions and a mitigation measure discussion, including training to instruct construction workers to recognize special-status species with a potential to occur within the project area and their habitat.

MM-8.2 To the extent practical, schedule any construction activities within non-native grassland to avoid the Western spadefoot toad aestivation period (June to December). Where construction is required in these areas during the aestivation period, a qualified biologist should conduct a preconstruction presence/absence survey. Any individuals found should be avoided. If this species is found to be present within the project area and impacts cannot be avoided, then consultation with CDFG would be required.

MM-8.3 Schedule the removal of suitable nesting habitat (including trees, shrubs, and grassland habitat) outside of the migratory bird and raptor breeding season (February 15 through September 15) if feasible. This includes the nesting seasons for special-status birds with a potential to occur within the project area, including bald eagle (approximately February through July), white-tailed kite (approximately April through August), tricolored blackbird (approximately April through July), ferruginous hawk (approximately April through July), Swainson's hawk (approximately March through August), mountain plover, northern harrier (approximately April through September), and bank swallows. For any vegetation removal and site preparation that occurs during these breeding seasons (February through September), a qualified biologist should conduct preconstruction presence/absence nesting bird surveys as described in MM-8.5.

MM-8.4 Have a qualified biologist conduct preconstruction nesting bird surveys if initial disturbance occurs between February 15 and September 15 of any given year within or adjacent to suitable nesting habitat (trees, shrubs and grassland habitat) within the project area. Surveys should be conducted within 7 days prior to the beginning of disturbance activities and consist of a 1-day survey conducted during appropriate weather and time of day. If nesting birds or raptors are observed, MM-8.5 should be implemented.

MM-8.5 If nesting special-status or migratory birds are detected during preconstruction surveys, a minimum 250 feet avoidance buffer should be maintained and 500-foot buffer around active raptor nests. Depending on conditions specific to each nest, and the relative location and rate of disturbance activities, it may be feasible for disturbance to occur as planned within the buffer

without impacting the breeding effort. In this case, the nest(s) shall be monitored by a qualified biologist during disturbance activities within the buffer. If, in the professional opinion of the monitor, the project would impact the nest, the biologist shall immediately inform the construction manager and CDFG. The construction manager shall stop activities within the buffer until either the nest is no longer active or the project receives approval to continue from CDFG.

MM-8.6 Conduct burrowing owl surveys within 30-days prior to any initial disturbance in grassland habitat in both the breeding and non-breeding burrowing owl season, pursuant to the CDFG burrowing owl guidelines (CDFG, 1995) and the California Burrowing Owl Consortium protocol (1997). If burrowing owls are detected during preconstruction surveys, the following mitigation measures are recommended consistent with the CDFG protocol:

- I. Avoid occupied burrows during the burrowing owl breeding season, February 1 through August 31.
- II. Prior to the breeding season, September 1 through January 31, occupied burrows should be avoided. If avoidance is not possible, owls may be passively relocated per CDFG standards. Compensation for loss of burrows may be required.

MM-8.7 To compensate for loss of Swainson's hawk foraging habitat, the applicant will submit a habitat restoration plan and will follow Yolo County requirements for Swainson's hawk mitigation.

MM-8.8 To the extent practical, schedule the demolition/removal of suitable bat roosting sites and work adjacent to these potential sites, including large trees and farm structures in the central part of the property, outside of the rearing season (typically before March and after August). If this period cannot be avoided, a preconstruction presence/absence survey should be conducted by a qualified biologist. This survey shall include, at a minimum, a visual inspection of the potential roosting sites, or if visual inspection is impractical or inconclusive (e.g., high in tall trees), an evening or night survey using electronic bat detectors. If occupied bat roosts are detected they should be avoided during the breeding season. A qualified biologist will determine the need to establish an avoidance buffer or for monitoring.

9.0 DETERMINATION

Northern Harrier

The CSC northern harrier was observed at the site. The project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measures recommended for the northern harrier (MM-8.3, MM-8.4, MM-8.5), this impact is expected to be **less than significant**.

Tricolored Blackbird

The CSC tricolored blackbird has a moderate potential to forage in the project area. The project is not considered to have the potential to adversely impact foraging habitat for this species. Therefore no mitigation is proposed.

Ferruginous Hawk

The CSC ferruginous hawk has a moderate potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measures recommended for the ferruginous hawk (MM-8.3, MM-8.4, MM-8.5), this impact is expected to be **less than significant**.

Swainson's Hawk

The state threatened Swainson's hawk has a moderate potential to forage in the area. With implementation of the mitigation measure recommended for the Swainson's hawk (MM-8.7), impact to habitat is expected to be **less than significant**.

Mountain Plover

The proposed project has a moderate potential to support the CSC mountain plover as a roosting/foraging winter resident; no nesting habitat is present. If present, the project is not considered to have the potential to adversely impact this species. Therefore no mitigation is proposed.

White-tailed Kite

The California fully protected white-tailed kite has a moderate potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measure recommended for the white-tailed kite (MM-8.3, MM-8.4, MM-8.5), this impact is expected to be **less than significant**.

Western Spadefoot Toad

The federally threatened and California CSC western spadefoot toad has a low potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measure recommended for the western spadefoot toad (MM-8.2), this impact is expected to be **less than significant**.

Burrowing Owl

The CSC burrowing owl has a low potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measure recommended for the burrowing owl (MM-8.6), this impact is expected to be **less than significant**.

Pallid Bat

The CSC pallid bat has a low potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measure recommended for the pallid bat (MM-8.8), this impact is expected to be **less than significant**.

Pacific Western Big-eared Bat

The CSC Pacific western big-eared bat has a low potential to occur within the project area. If present, the project has the potential to adversely impact this species by direct take during construction. With implementation of the mitigation measure recommended for the Pacific western big-eared bat (MM-8.8), this impact is expected to be **less than significant**.

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