

Appendix C
Natural Environment Study

BCAG Transit Facility Property Acquisition Project

Chico, Butte County, CA

Natural Environment Study

July 2012



Prepared for:

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Natural Environment Study

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Prepared By:



Date:

7/31/12

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Summary

Butte County Association of Governments (BCAG) is proposing to acquire land to expand their existing transit facility located in Chico, CA and to extend a storm drain pipeline north to Comanche Creek, paralleling the Union Pacific train tracks. Approximately 16 acres of land adjoining the existing transit facility off of Huss Lane and the pipeline alignment (approximately 12 acres) was surveyed for biological and sensitive natural resources. This 28.9-acre total biological survey area (BSA) is characterized by disturbed annual grassland that had been graded and leveled for past agricultural purposes and heavily disturbed land void of vegetation surrounding the train tracks. One perennial creek, Comanche Creek, occurs along the northernmost boundary of the BSA.

Based on the lack of wetland features, lack of slow moving water in Comanche Creek, past grading activities, and the dominance of non-native, weedy and agricultural plant species within the BSA, no special-status plant species were determined to have potential to occur on the site. In addition, due to the dominance of weedy, non-native plants, care must be taken during any ground disturbing activities to prevent the spread of these non-natives to areas outside the BSA.

No special-status fish or amphibian species were determined to have potential to occur within the BSA based on lack of suitable habitat. One state and federally threatened reptile, the giant garter snake (GGS), was determined to have potential to utilize Comanche Creek as a travel corridor and for basking along the top of the banks. Additionally, elderberry shrubs, which are the sole host plant for the federally listed valley elderberry longhorn beetle, occur within 100 feet of the BSA on the northern bank of Comanche Creek.

The state bird species of special concern, the western burrowing owl and other migratory bird and raptor species protected by the Migratory Bird Treaty Act have potential to nest and forage within the disturbed annual grassland and area surrounding Comanche Creek on-site. Furthermore, one state mammal of special concern, the western red bat, has marginal potential to roost within trees along Comanche Creek. As such, pre-construction burrowing owl, swallow, bat, and migratory bird and raptor surveys will be required on-site if vegetation removal and/or ground disturbing activities occur during the breeding season (March 1 to August 31). In addition, a state threatened Swainson's hawk nest is known to occur within 10 miles of the BSA. Therefore, the BSA was assessed for potential foraging

habitat for Swainson's hawks. Due to the small size of the BSA, the poor habitat present, and the amount of developed land and tree cover surrounding the site, the BSA was determined to not contain suitable foraging habitat for Swainson's hawks.

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List of Abbreviated Terms

BCAG	Butte County Association of Governments
BSA	Biological Survey Area
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
ESU	Evolutionary Significant Unit
GGG	Giant Garter Snake
HCP	Butte Regional Habitat Conservation Plan
NCCP	Natural Community Conservation Plan
NorthStar	NorthStar Environmental Division
MBTA	Migratory Bird Treaty Act
NES	Natural Environment Study
SNC	Sensitive Natural Community
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley Elderberry Longhorn Beetle

Chapter 1. Introduction

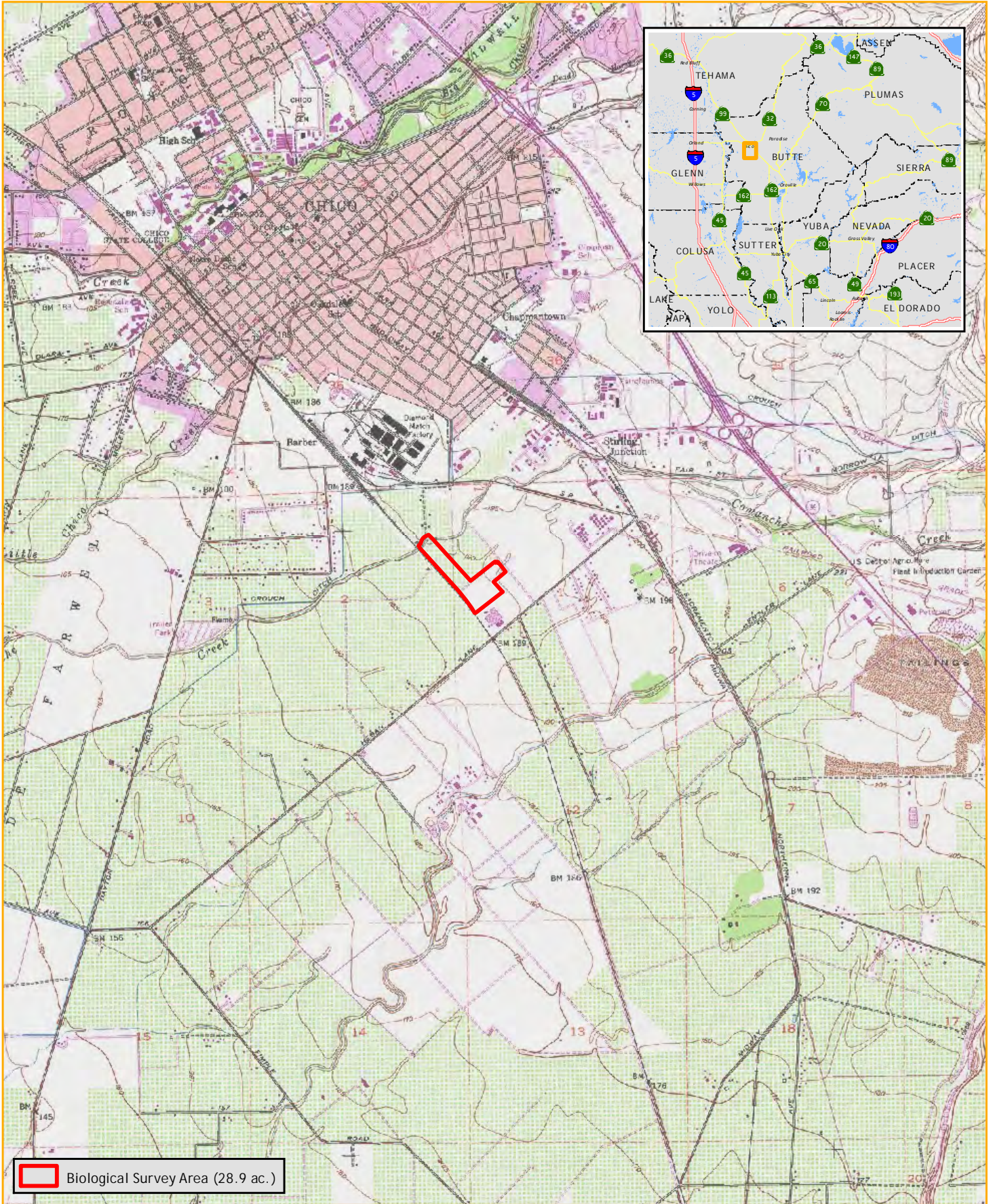
The Butte County Association of Governments (BCAG) existing transit facility located off of Huss Lane in Chico, Butte County, CA is currently in need of expansion. The surrounding property to the west of the existing facility is one large 34 acre parcel (APN 39-060-125). To expand their existing facility, only around 10 acres of land will need to be acquired. Therefore, approximately 16 acres of the 34-acre parcel located immediately adjacent to the existing facility was surveyed for sensitive natural resources. Additionally, the expansion will require a new stormwater drain to be constructed which will outfall into Comanche Creek, located just north of BCAG's existing facility (**Figure 1**). The alignment of the proposed storm drain (approximately 12 acres) was also surveyed for sensitive natural resources. The surveyed land proposed for acquisition and the storm drain alignment totals 28.9 acres and will hereafter be referred to as the Biological Survey Area (BSA).


1.1. Project History


Currently, BCAG has an existing transit facility located off of Huss Lane in Chico, CA. Due to the increased need for more parking and storage space for employees and vehicles, BCAG is in the process of determining the viability of expanding the existing facility by acquiring additional property. The development of the BCAG facilities will require installation of a new regional storm drainage infrastructure and outfall. A storm drain extension will be necessary to drain on-site surface storm water and will be sized to accommodate future adjacent development.

1.2. Project Description

The Butte County Association of Governments is seeking to acquire a portion of the 34-acre parcel that is immediately adjacent to the existing BCAG transit facility, located on Huss Lane in the southwest area of the City of Chico. The proposed project is the creation of an approximately 10-acre parcel that is contiguous with the existing transit facility site. The ultimate size of the parcel to be created and acquired depends upon the anticipated transit facility expansion needs. As such a total of 16 acres of land was surveyed to allow for 6 acres of buffer in case more land was determined necessary in the future or sensitive natural resources were observed on the site and needed to be avoided (**Figure 1**). Due to storm drainage constraints within



 Biological Survey Area (28.9 ac.)

 Within Sections 1, 2 of
T21N, R1E Butte County, CA.
Chico USGS 7.5' Quad.
Map Date: 7/13/2012

Miles
0 0.5 1

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Figure 1

the area, the future expansion of the existing BCAG facility will require the installation of a new storm drain pipe and outfall. The proposed storm drainage alignment runs westward along the north side of the proposed Aztec Road extension, continues between the existing Sierra Nevada Brewery-owned railroad spur and the Union Pacific railroad tracks, and then runs parallel with the tracks in a northward direction to Comanche Creek (**Figure 1**).

Chapter 2. Study Methods

The following sections describe federal, state, and local environmental laws and policies that are relevant to this Natural Environment Study (NES).

2.1. Regulatory Requirements

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under Section 404 of the Clean Water Act (33 U.S.C. 1341). A preliminary delineation of waters of the U.S. for the BSA was conducted by on September 01, 2011 by botanist Elena Gregg. The term “waters of the United States” is an encompassing term and includes “wetlands” and “other waters.” Wetlands have been defined for regulatory purposes as follows: “Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, vernal pools, and similar areas.” “Other waters of the United States” are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e. hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). Based on the site survey conducted in September, no waters of the U.S., as defined above, were determined to occur within the BSA.

The California Department of Fish and Game (CDFG) is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code (CFGC). Under Section 1603, a private party must notify CDFG if a proposed project will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds... except when the department has been notified pursuant to Section 1601.” If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFG may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFG identifying the approved activities and associated mitigation measures.

Special-status species are those that fall into one of the following categories:

- Designated as threatened or endangered under the federal Endangered Species Act (50 CFR 17.12) or the California Endangered Species Act (14 CCR 670.5);
- Designated as a Species of Special Concern by the CDFG;
- Protected under the Migratory Bird Treaty Act (MBTA) and §3503.5 of the California Fish and Game Code; or
- Included on the California Native Plant Society (CNPS) List 1A, 1B, 2 or 3;

Under ESA, species may be listed as either “endangered” or “threatened.”

“Endangered” means a species is in danger of extinction throughout all or a significant portion of its range. “Threatened” means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except non-native species and pest insects, are eligible for listing as endangered or threatened. The USFWS also maintains a list of “candidate” species. These are species for which there is enough information to warrant proposing them for listing, but that have not yet been proposed. “Proposed” species are those that have been proposed for listing, but have not yet been listed. The ESA makes it unlawful to “take” a listed animal without a permit. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Through regulations, the term “harm” is defined as “an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.”

The California Endangered Species Act (CESA) is similar to the federal ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFG when preparing documents to comply with the California Environmental Quality Act (CEQA). The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “Species of Special Concern” receive consideration by CDFG. Species of Special Concern are those whose numbers, reproductive success, or habitat may be threatened.

The MBTA prohibits the taking, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503 of

the California Fish and Game Code states that, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.”

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The CNPS listings categorize plants as follows:

- List 1A: Plants presumed extinct in California;
- List 1B: Plants rare, threatened, or endangered in California or elsewhere;
- List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- List 3: Plants about which we need more information; and
- List 4: Plants of limited distribution.

2.2. Studies Required


Due to the potential for future construction activities, biological studies of the site were required to describe what natural resources may be present, if special-status species or their habitat occur, and if these resources may be impacted by the proposed project. Prior to the field survey, NorthStar Environmental Division (NorthStar) compiled a list of special-status wildlife and plant species that potentially occur in or near the BSA. The list was created by accessing all pertinent databases, and contacting appropriate state and federal agencies. Topographic maps and aerial photos of the site were reviewed and areas of potential impact noted.

2.3. Personnel and Survey Dates

Special-status species/habitat surveys were conducted on September 01, 2011 and June 29, 2012 by botanist Elena Gregg (see **Attachment A** for surveyor qualifications).

Habitat assessments and general biological surveys were conducted within the BSA (**Figure 2**). The survey entailed traversing the entire BSA on foot using meandering transects.



 Biological Survey Area (28.9 ac.)



Aerial: Microsoft Web Map Services
Map Date: 8/1/2012

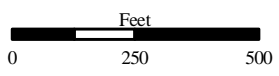


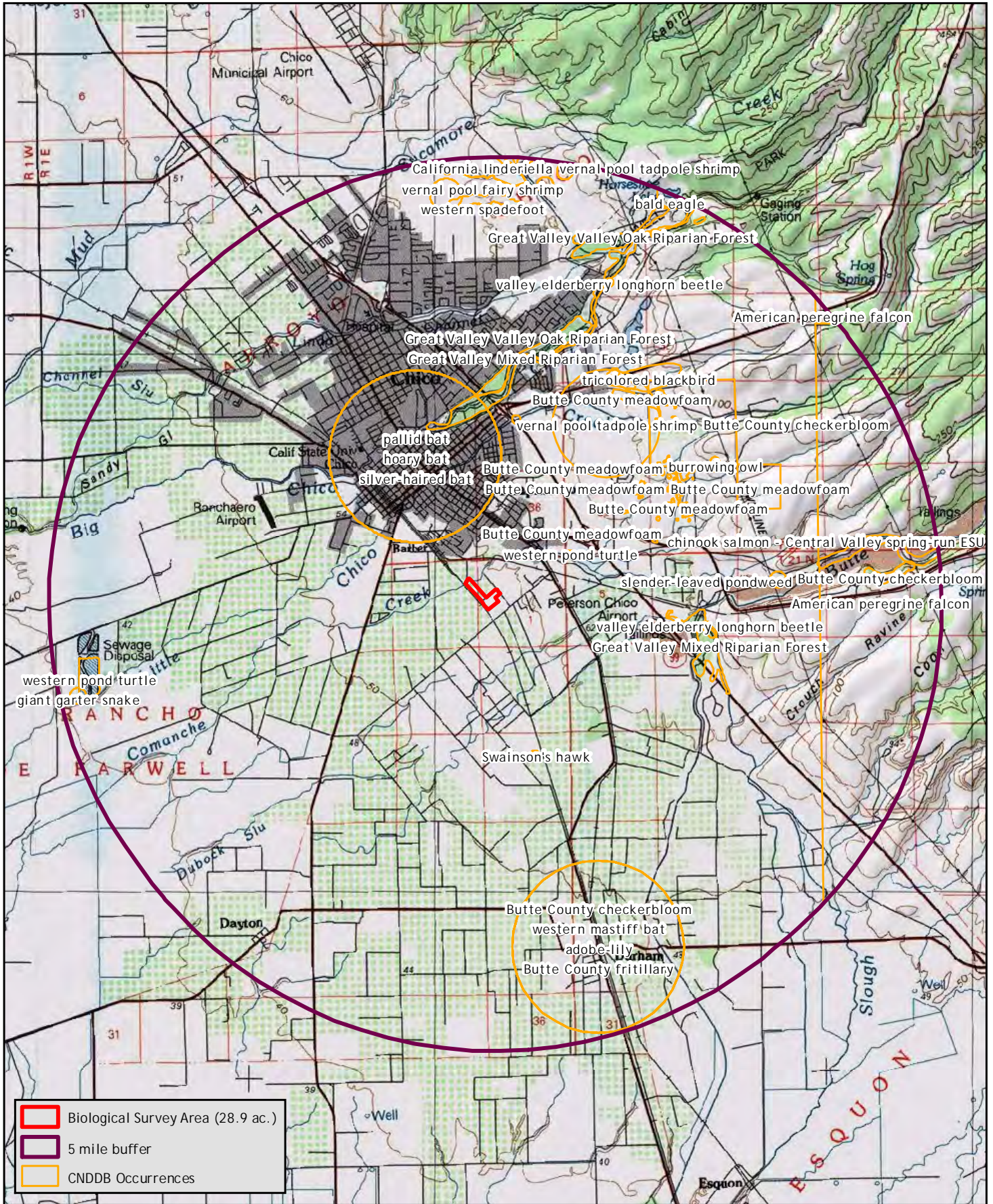
Figure 2

2.4. Agency Coordination and Professional Contacts

The USFWS was contacted on September 2, 2011 for documentation regarding a list of special-status species likely to occur within the USGS quadrangle on which the project occurs (**Appendix A**). On September 1, 2011, RareFind (v 3.0.3) was used to access the California Natural Diversity Database (CNDDDB) regarding special-status species potentially occurring in or near the BSA (**Figure 3** and **Appendix B**). The Inventory of Rare and Endangered Plants of California, Seventh Edition, published by the California Native Plant Society (CNPS; September 2011) was also reviewed on August 31, 2011 by NorthStar to determine special-status plant species that may occur in or near the BSA (**Appendix C**).

2.5. Limitations That May Influence Results

Due to the time of year the survey was conducted, no protocol-level surveys were performed. However, based on the results of the field assessment, no protocol-level surveys will be necessary since the BSA does not support suitable habitat for most special-status species. Those special status-species that do have potential to occur within the BSA will only need to be surveyed for during pre-construction surveys as described in detail in Chapter 4 below.



CNDDB Occurrences provided by CDFG (9/2011)
 Map Base: Chico 15" USGS Quad
 Map Date: 7/12/2012

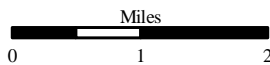


Figure 3

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

The BSA is located in Sections 1 and 2, Township 21N, Range 1E of the Chico U.S. Geological Survey (USGS) 7.5 minute quadrangle (**Figure 1**). The BSA is located within the southern city limits of Chico and is positioned adjacent to existing commercial buildings to the south, train tracks and orchards to the west, an alfalfa field and commercial buildings to the east, and Comanche Creek and orchards to the north.

3.1.1. Study Area

The BSA is composed of 10 acres of land conjoining the existing transit facility (APN 039-060-125), a moderate buffer of approximately 6 acres to accommodate any changes or additions to the future construction project, and approximately 12 acres of land within the proposed storm drain pipe alignment (**Figure 2**). Though this area is positioned within the city limits of Chico, the area immediately surrounding the parcel to the south is outside the city limits and is designated as an orchard/agricultural land use.

3.1.2. Physical Conditions

The BSA is characterized by flat topography void of wetland features. Hydrology on the site consists of localized, overland runoff from precipitation events and runoff from the irrigated alfalfa field. The overland flow enters Comanche Creek along the northernmost boundary of the BSA. Average precipitation in the area totals 25.66 inches per year and the average high temperatures in the area range from 63.0 °F in the winter to 87.4 °F in summer annually (WRCC 2011). The elevation of the site is approximately 191 feet above sea level. Soils on the BSA consist of the Chico loam soil series. The BSA is surrounded by commercial buildings to the south, train tracks and orchards to the west, irrigated cropland and commercial buildings to the east, and Comanche Creek and orchards to the north.

3.1.3. Biological Conditions

The BSA is composed of disturbed annual grassland habitat and heavily disturbed land void of vegetation surrounding the train tracks. Due to past grading activities, likely from historic agricultural land uses, the 16-acre portion of the BSA proposed for land acquisition has become dominated by weedy, non-native, herbaceous plant species. No tree or shrub species occur within the BSA except for a few mixed oak and landscape trees along Huss Lane and valley oak (*Quercus lobata*) trees along the immediate top of bank of Comanche Creek. The dominant plant species present within the BSA include hedge parsley (*Torilis arvensis*), wild oats (*Avena barbata*), sharp-leaved fluellin (*Kickxia elatine*), yellow star-thistle (*Centaurea solstitialis*), bindweed (*Convolvulus arvensis*), Johnsongrass (*Sorghum halepense*), medusahead (*Taneatherum caput-medusae*), and rip-gut brome (*Bromus diandrus*). An alfalfa field and small patch of planted bread wheat occurs immediately to the east of the proposed storm drain alignment portion of the BSA. Little wildlife was present on the date surveyed, however, many fossorial mammal burrows were observed. The few wildlife species observed included jackrabbits (*Lepus californicus*), scrub jays (*Aphelocoma coerulescens*), and turkey vultures (*Cathartes aura*), and a red-tailed hawk (*Buteo jamaicensis*) and black phoebe (*Sayornis nigricans*) near Comanche Creek.

3.2. Regional Species and Habitats of Concern

Due to the lack of wetlands, the incised nature of Comanche Creek, and the heavily disturbed upland habitat on the site, few special-status species have potential to occur within the BSA (**Table 1**). A list of species observed within the BSA during the field survey is provided in **Appendix D**.

No federally-listed fish species were identified as potentially occurring in the BSA. Though Comanche Creek occurs within the BSA and is a tributary of the Sacramento River, fish barriers have been placed in upper Butte Creek to prevent juveniles from entering Comanche Creek.

Table 1: Special-status species that potentially occur in or near the BCAG Transit Facility Property Acquisition survey area.

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
SENSITIVE NATURAL COMMUNITIES				
Coastal and Valley Freshwater Marsh	_/_SNC/_/_	Occurs near river mouths, oxbows, and other areas in the floodplain, and along margins of lakes and springs, where water is quiet and permanently flooded by freshwater. Dominated by perennial, emergent monocots 4-5 meters tall.	A	This SNC was not observed on the BSA
Great Valley Cottonwood Riparian Forest	_/_SNC/_/_	Perennial creeks and rivers in the Central Valley.	A	This SNC was not observed on the BSA
Great Valley Mixed Riparian Forest	_/_SNC/_/_	A tall, dense, winter-deciduous, broadleaved riparian forest. The tree canopy is usually fairly well closed and moderately to densely stocked with several species including <i>Acer negundo</i> , <i>Juglans hindsii</i> , <i>Platanus racemosa</i> , <i>Populus fremontii</i> , and <i>Salix</i> spp.	A	This SNC was not observed on the BSA
Great Valley Valley Oak Riparian Forest	_/_SNC/_/_	Occurs on the deep alluvial soils of higher floodplain terraces in association with river systems. Can also be found in other upland communities.	A	This SNC was not observed on the BSA
Great Valley Willow Scrub	_/_SNC/_/_	Pioneer riparian community found on depositional areas near the edge of intermittent and perennial creeks and rivers.	A	This SNC was not observed on the BSA
Northern Basalt Flow Vernal Pool	_/_SNC/_/_	Associated with low- to mid-elevation seasonally flooded depressions on impermeable soils.	A	This SNC was not observed on the BSA
Northern Hardpan Vernal Pool	_/_SNC/_/_	Seasonally flooded depressions on impermeable soils or rock.	A	This SNC was not observed on the BSA
Northern Volcanic Mud Flow Vernal Pool	_/_SNC/_/_	Seasonally flooded depressions on impermeable soils or rock.	A	This SNC was not observed on the BSA
PLANTS				
Adobe Lily (<i>Fritillaria pluriflora</i>)	_/_/_/1B	Chaparral, cismontane woodland, valley and foothill grassland. (Feb-Apr)	HA/A	No suitable habitat – no adobe soils present

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Ahart's Buckwheat (<i>Eriogonum umbellatum</i> var. <i>ahartii</i>)	___/___/1B	Serpentinite soils, openings, and slopes in chaparral and cismontane woodland. (Jun- Sep)	HA/A	No suitable habitat – BSA is outside the normal range for the species
Ahart's Paronychia (<i>Paronychia ahartii</i>)	___/___/1B	Cismontane woodland, valley and foothill grassland, and vernal pools. (Mar-Jun)	HA/A	No suitable habitat – no vernal features present.
Big-scale Balsam Root (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	___/___/1B	Cismontane woodlands and chaparral. Valley and Foothill grasslands. Sometimes serpentinite. (Mar-June)	HA/A	No suitable habitat – BSA is outside the normal range for the species
Brazilian Watermeal (<i>Wolffia brasiliensis</i>)	___/___/2	Marshes and swamps (shallow freshwater). (Apr-Dec)	HA/A	No suitable habitat – no suitable slow moving water habitat present
Brownish Beaked-Rush (<i>Rhynchospora capitellata</i>)	___/___/2	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest (mesic), 455-2000 meters. (Jul- Aug)	HA/A	No suitable habitat – no suitable slow moving water habitat present
Butte County Checkerbloom (<i>Sidalcea robusta</i>)	___/___/1B	Chaparral and cismontane woodland. (Apr-Jun)	HA/A	No suitable habitat – no chaparral or woodland habitats are present.
Butte County Fritillaria (<i>Fritillaria eastwoodiae</i>)	___/___/3	Chaparral, cismontane woodland, openings in lower montane coniferous forests, sometimes serpentinite. (Mar- Jun)	HA/A	No suitable habitat – BSA is outside the normal range for the species
Butte County Golden Clover (<i>Trifolium jokerstii</i>)	___/___/1B	Valley and foothill grassland, vernal pools. (Mar-May)	HA/A	No suitable habitat – no vernal features present.
Butte County Meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>)	FE/SE/1B	Valley and foothill grassland, vernal pools. (Mar-May)	HA/A	No suitable habitat – no vernal features present or typical soils.
Butte County Morning-glory (<i>Calystegia atriplicifolia</i> ssp. <i>buttensis</i>)	___/___/1B	Chaparral and rocky lower montane coniferous forest, sometimes roadsides. (May-Jul)	HA/A	No suitable habitat – BSA is outside the normal range for the species
California Beaked-rush (<i>Rhynchospora californica</i>)	___/___/1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, and marshes and swamps. (May-Jul)	HA/A	No suitable habitat – no suitable slow moving water habitat present.

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
California Satintail (<i>Imperata brevifolia</i>)	__/__/2	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and mesic riparian scrub, 0-500 meters. (Sep-May)	HA/A	No suitable habitat – no alkaline soils or wetlands present.
Dissected-leaved Toothwort (<i>Cardamine pachystigma</i> var. <i>dissectifolia</i>)	__/__/3	Chaparral and lower montane coniferous forests, usually serpentinite and rocky. (Feb-May)	HA/A	No suitable habitat – BSA is outside the normal range for the species
Ferris's Milk-vetch (<i>Astragalus tener</i> var. <i>ferrisiae</i>)	__/__/1B	Meadows and seeps, valley and foothill grassland. (Apr-May)	HA/A	No suitable habitat – no wetland features present.
Flagella-like Atractylcarpus (<i>Campylopodia stenocarpa</i>)	__/__/2	Cismontane woodland, 100-500 meters.	HA/A	No suitable habitat present.
Greene's Tuctoria (<i>Tuctoria greenei</i>)	FE/__/1B	Vernal pools. (May-Jul/Sept)	HA/A	No suitable habitat – no vernal features present.
Hairy Orcutt Grass (<i>Orcuttia pilosa</i>)	FE/SE/1B	Deep vernal pools. (May-Sept)	HA/A	No suitable habitat – no vernal features present.
Hoover's Spurge (<i>Chamaesyce hooveri</i>)	FT/__/1B	Vernal pools. (Jul-Sep/Oct)	HA/A	No suitable habitat – no vernal features present.
Norris' Beard Moss (<i>Didymodon norrisii</i>)	__/__/2	Cismontane woodland and lower montane coniferous forest (intermittently mesic, rocky)	HA/A	No suitable habitat – BSA is outside the normal range for the species
Pink Creamsacs (<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>)	__/__/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (serpentine). (Apr-Jun)	HA/A	No suitable habitat – no meadow or seep features present.
Recurved Larkspur (<i>Delphinium recurvatum</i>)	__/__/1B	Chenopod scrub, cismontane woodland, valley and foothill grassland (alkaline). (Mar-Jun)	HA/A	No suitable habitat – no alkaline soils present.
Red Bluff Dwarf Rush (<i>Juncus leiospermus</i> var. <i>leiospermus</i>)	__/__/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland and vernal pools/vernally mesic habitats. (Mar-May)	HA/A	No suitable habitat – no wetland features present.
Red Hills Soaproot (<i>Chlorogalum grandiflorum</i>)	__/__/1B	Chaparral, cismontane woodland, and lower montane coniferous forest (typically serpentinite or gabbroic soils). (May-Jun)	HA/A	No suitable habitat – BSA is outside the normal range for the species

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Round-leaved Filaree (<i>California macrophylla</i>)	__/__/1B	Cismontane woodland, valley and foothill grassland (clay). (Mar-May)	HA/A	No suitable habitat – no heavy clay soils present and site is too heavily disturbed.
Slender-leaved Pondweed (<i>Potamogeton filiformis</i>)	__/__/2	Marshes and swamps (assorted shallow freshwater). (May-July)	HA/A	No suitable habitat – no suitable slow moving water habitat present.
Slender Orcutt Grass (<i>Orcuttia tenuis</i>)	FT/SE/1B	Drying beds of vernal pools and borrow pits. (May-Sep/Oct)	HA/A	No suitable habitat – no vernal features present.
Veiny Monardella (<i>Monardella douglasii</i> ssp. <i>venosa</i>)	__/__/1B	Cismontane woodlands. Valley and foothill grasslands in heavy clay soils. (May-July)	HA/A	No suitable habitat – no heavy clay soils present.
Watershield (<i>Brasenia schreberi</i>)	__/__/2	Freshwater marshes and swamps. (Jun-Sep)	HA/A	No suitable habitat – no suitable slow moving water habitat present.
White-stemmed Clarkia (<i>Clarkia gracilis</i> ssp. <i>albicaulis</i>)	__/__/1B	Chaparral and cismontane woodland (sometimes serpentine). (May-Jul)	HA/A	No suitable habitat – no chaparral or woodland habitat and no serpentinite soils present.
Wooly Rose-mallow (<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>)	__/__/2	Marshes and swamps (freshwater). (Jun-Sep)	HA/A	No suitable habitat – no suitable slow moving water habitat present.
INVERTEBRATES				
Conservancy Fairy Shrimp (<i>Branchinecta conservatio</i>)	FE/__/__	Moderately turbid, deep, cool-water vernal pools, swales, and ephemeral freshwater habitat.	HA/A	Not known to occur in the area, and no suitable habitat – no vernal pools present
Valley Elderberry Longhorn Beetle (<i>Desmocerus californicus dimorphus</i>)	FT/__/__	Blue elderberry shrubs usually associated with riparian areas.	MH	No elderberry shrubs were present; however, shrubs present 100 feet away from the BSA
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	FT/__/__	Vernal pools, swales, and ephemeral freshwater habitat.	HA/A	No suitable habitat – no vernal pools were present

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Vernal Pool Tadpole Shrimp (<i>Lepidurus packardii</i>)	FE/__/__	Vernal pools, swales, and ephemeral freshwater habitat.	HA/A	No suitable habitat – no vernal pools were present
AMPHIBIANS AND REPTILES				
California red-legged frog (<i>Rana aurora draytonii</i>)	FT/CSC/__	Requires a permanent water source and is typically found along quiet slow moving streams, ponds, or marsh communities with emergent vegetation.	HA/A	No suitable habitat – no suitable slow moving water present – and believed to be extirpated from the Sacramento Valley.
Coast Horned Lizard (<i>Phrynosoma coronatum</i>)	-- / CSC / --	Occurs in openings in valley foothill hardwood, coniferous, riparian habitats, pine-cypress, juniper, and annual grassland habitats with sandy soils and presence of ants.	HA/A	No suitable habitat – no sandy soils present
Giant garter snake (<i>Thamnophis gigas</i>)	FT/ST/__	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	HP	Comanche Creek is considered a potential travel corridor for GGS.
Northwestern Pond Turtle (<i>Actinemys marmorata marmorata</i>)	__/CSC/__	Associated with permanent ponds, lakes, streams, and irrigation ditches or permanent pools along intermittent streams.	HA/A	No suitable habitat – no suitable slow moving water present
Western Spadefoot (<i>Spea hammondi</i>)	_/CSC/_	Grassland and woodland and vernal pools without aquatic predators for breeding.	HA/A	No suitable habitat – no vernal pools present
FISH				
Central Valley Spring-Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	FT/ST/__	Sacramento River and tributaries.	HA/A	No suitable habitat – fish barriers present
Central Valley Steelhead (<i>Oncorhynchus mykiss</i>)	FT/__/__	Sacramento and San Joaquin Rivers and their tributaries.	HA/A	No suitable habitat – fish barriers present
Delta Smelt (<i>Hypomesus transpacificus</i>)	FT/ST/__	Sacramento-San Joaquin Estuary	HA/A	No suitable habitat – fish barriers present

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Green Sturgeon (<i>Acipenser medirostris</i>)	FT/CSC/_	Sturgeon enter freshwaters to spawn. The only recently-documented green sturgeon spawning locations are in the Klamath, Sacramento, and Rogue rivers along the west coast of North America.	HA/A	No suitable habitat – fish barriers present
Sacramento River Winter-Run Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)	FE/SE/_	Sacramento River and tributaries.	HA/A	No suitable habitat – fish barriers present
MAMMALS				
American Badger (<i>Taxidea taxus</i>)	_/CSC/_	Grasslands, savannahs, and mountain meadows with friable soils.	HA/A	No suitable habitat present due to the close proximity of the BSA to human activity.
Pallid Bat (<i>Antrozous pallidus</i>)	_/CSC/_	Arid and semi-arid habitats; roosts in rock crevices, caves, and mine shafts.	HA/A	No suitable roosting habitat.
Sierra Nevada Red Fox (<i>Vulpes vulpes necator</i>)	_/ST/_	Prefer dense forests interspersed with meadows or alpine fell-fields for cover and den sites. Found in alpine dwarf-shrub, wet meadow, sub-alpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian, mixed conifer, and ponderosa pine habitats typically above 2200m (7000 feet). Open areas are used for hunting.	HA/A	BSA is outside the typical range of the species and no suitable habitat present.
Western Mastiff Bat (<i>Eumops perotis californicus</i>)	_/CSC/_	Common species of low elevations in California. Crevices in steep cliff faces or in the roof eaves of buildings of two or more stories (needs vertical faces to take flight).	HA/A	No suitable roosting habitat.
Western Red Bat (<i>Lasiurus blossevillii</i>)	_/CSC/_	Roosting habitat includes forest and broadleaf woodlands from sea level to coniferous forest. Feeds over grasslands, shrublands, open woodlands, and croplands. Known to occur from Shasta County to the Mexican border – often in riparian habitats.	MH	Marginal roosting habitat present within the few trees along Comanche Creek.

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
BIRDS				
Bald eagle (<i>Haliaeetus leucocephalus</i>)	___/SE/___	Lakes, rivers, estuaries, reservoirs and some coastal habitats.	HA/A	No suitable nesting habitat.
Bank Swallow (<i>Riparia riparia</i>)	___/ST/___	Nests in steep riverbank cliffs, gravel pits, and highway cuts.	HA/A	No suitable bank nesting habitat is present within Comanche Creek in the BSA.
Burrowing owl (<i>Athene cunicularia</i>)	___/CSC/___	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	MH	Marginal habitat is present due to the highly disturbed nature of the site and dense weed cover
California Black Rail (<i>Laterallus jamaicensis coturniculus</i>)	___/ST/___	Yearlong resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay Area, Sacramento-San Joaquin Delta, coastal Southern California, the Salton Sea and lower Colorado River area.	HA/A	No suitable nesting habitat.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	___/CSC/___	Open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover	HA/A	No suitable nesting habitat.
Swainson's hawk (<i>Buteo swainsoni</i>)	MBTA/ST/___	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat including grasslands or suitable grain or alfalfa fields, or livestock pastures.	MH	Sub-marginal foraging habitat present, and no suitable nesting habitat
Tri-colored blackbird (<i>Agelaius tricolor</i>)	___/CSC/___	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central valley and foothills surrounding the valley.	HA/A	No suitable nesting habitat.
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	FC/SE/___	Large, structured, dense riparian forest, generally with willows. Found predominately along the Sacramento River	HA/A	No suitably large riparian or willow thickets are present
Yellow Warbler (<i>Dendroica petechia</i>)	___/CSC/___	Very partial to riparian woodlands of the lowlands and foothill canyons.	HA/A	No suitable nesting habitat.
Migratory Birds and Raptors	MBTA	Nest and forage in a variety of habitats including hardwood woodlands, coniferous forests, meadows, grasslands and riparian.	HP	Suitable nesting and foraging habitat present

Common Name (<i>Scientific name</i>)	Status Federal/ State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
FE = Federally-listed Endangered FT = Federally-listed Threatened FC = Federal Candidate Species SE = State-listed Endangered ST = State-listed Threatened SH = Species presumed extinct in California CSC = CDFG Species of Special Concern FP = CDFG Fully Protected Species		CODE DESIGNATIONS MBTA = protected under the federal Migratory Bird Treaty Act CNPS 1B = Rare or Endangered in California or elsewhere CNPS 2 = rare or Endangered in California, more common elsewhere CNPS 3 = Plants for which more information is needed		A = Species Absent P = Species Present HA = Habitat Absent HP = Habitat Present CH = Critical Habitat MBTA = Migratory Bird Treaty Act MH = Marginal Habitat

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Natural Communities of Special Concern

Under CEQA, a project that substantially adversely affects any riparian habitat or other sensitive natural community (SNC) identified in local or regional plans, policies, regulations, or by CDFG or USFWS, will have an impact on the environment. For this NES, the term “sensitive natural community” includes those communities that, if eliminated or substantially degraded, would sustain a significant adverse impact as defined under CEQA. These community types are important, as further degradation and destruction threatens these community types as well as associated populations of dependent plant and wildlife species and significantly reduces their regional distribution and viability. The CDFG designated SNCs occurring within 5 miles of the BSA include great valley mixed riparian forest and great valley valley oak riparian forest (**Figure 3**). However, no designated SNCs occur within the BSA. Though valley oak trees occur along the immediate top of bank and within the bank of Comanche Creek, the sparse and narrow line of trees within the BSA do not constitute a forest and are not included in the SNC designation.

4.2. Special-Status Plant Species

Due to the highly disturbed nature of the site, the lack of wetland features, and the lack of slow moving water in Comanche Creek, no special-status plant species were determined to have potential to occur within the BSA. The majority of the plant species listed in **Table 1** require either wet habitats (i.e. vernal pools and marshes with stagnant or slow moving water) or wooded habitats which do not occur within the BSA. However, special-status plant species typically found in valley grassland habitats also do not have potential to occur within the BSA due to the dominance of weedy-non-native plants that tend to out-compete rare native species for sunlight and water and typically do not occur within graded areas.

4.3. Special-Status Animal Species Occurrences

Based on the disturbed habitat type present within the BSA and the lack of suitable wetland features, few special status animal species have potential to occur on the site. Most of the special-status animal species listed in **Table 1** either require the presence of specific habitat types that do not occur within the BSA or wetland features to breed and forage. The only special-status animal species determined to have potential to occur within the BSA include valley elderberry longhorn beetle (VELB), the giant garter snake (GGS), western red bat, western burrowing owl, and migratory bird and raptor species that are protected by the MBTA.

4.3.1. Valley Elderberry Longhorn Beetle

The VELB is federally listed as threatened and critical habitat has been designated by the USFWS. The beetle is endemic to riparian systems along the margins of rivers and streams, and in adjacent grassy savannas in California's Central Valley. The VELB occurs in the Central Valley of California below 3,000 feet. It is distributed primarily within riparian habitats from Shasta County to Kern County. Valley elderberry longhorn beetles feed and reproduce exclusively on two species of elderberry, including blue elderberry (*Sambucus mexicana*) and red elderberry (*S. racemosa*). The adult female beetles deposit eggs in the bark crevices of living plants. Larvae bore into the pith (plant tissue in the center of the stem) of larger elderberry stems upon hatching, where the majority of the animal's life-span occurs. Following pupation in the spring, the adult beetle emerges, creating a hole in the bark of the stem or branch. Adults feed on foliage and are present from March through early June. Because the adult stage is short lived, survey techniques focus on the presence of emergence holes for evidence of VELB. Valley elderberry longhorn beetle emergence holes have been observed in shoots or branches with diameters as small as 0.5 inches (13 mm) but are more common in older, larger branches. Besides exhibiting a preference for "stressed" elderberry shrubs, VELB prefer shrubs with stems of a certain size class. Exit holes have been found more frequently in trunks or branches that are 5 to 20 cm (2-8 in) in diameter, or at least 1.0 inch or greater at ground height (USFWS 1999) and less than one meter off the ground (Collinge et al. 2001). Research also shows that exit holes more consistently occur in clusters or stands of elderberry shrubs surrounded by associate riparian vegetation, rather than in isolated shrubs (Collinge et al. 2001). Exit holes are circular to slightly oval and are usually 7-10 mm in diameter. Valley elderberry longhorn beetles are the only insect

species known to inhabit live elderberry shrubs and/or make exit holes of a similar size and shape in the Central Valley (USFWS 1991).

4.3.1.1. SURVEY RESULTS

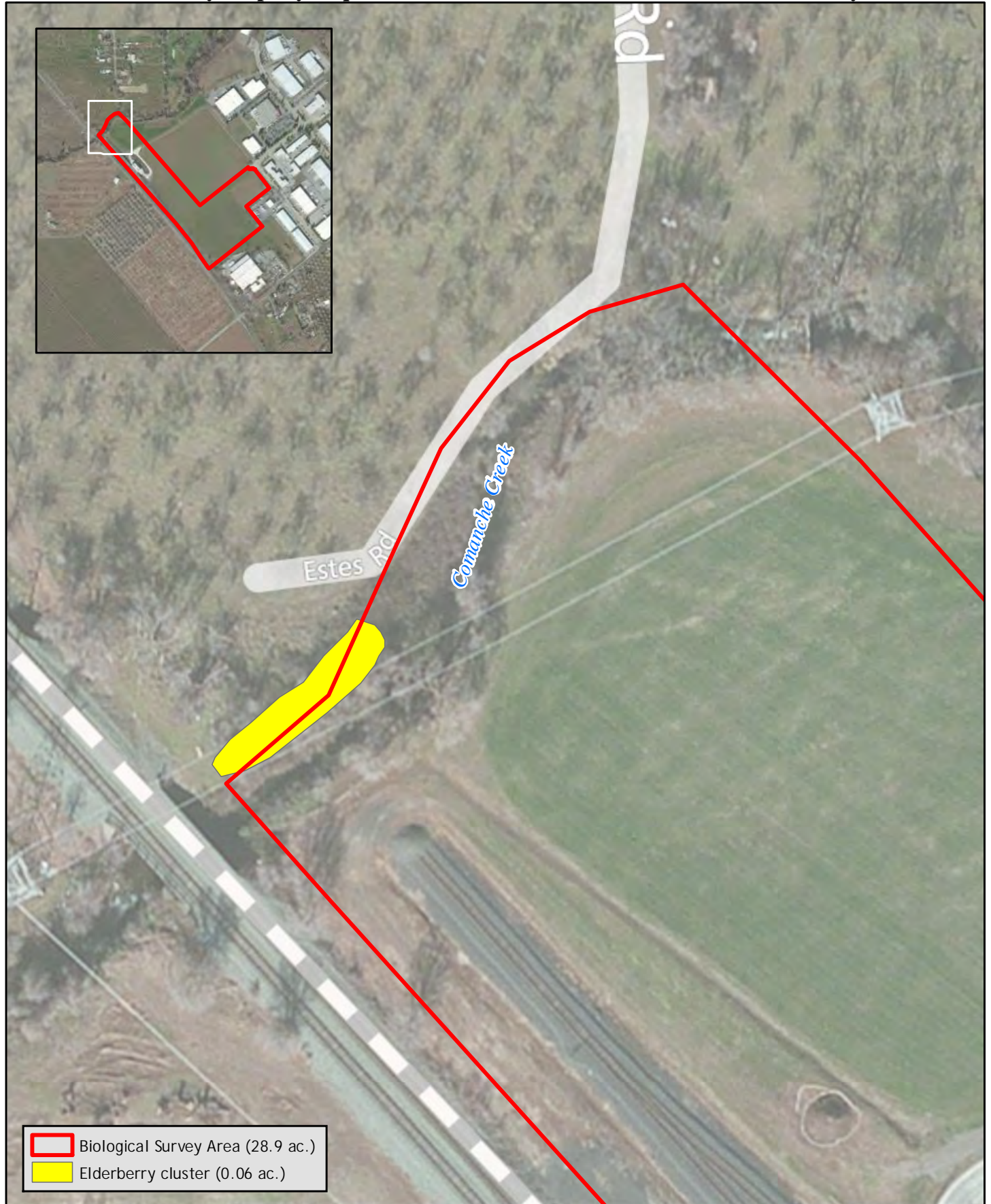
No elderberry shrubs were observed within the BSA. However, according to the 1999 USFWS Conservation Guidelines for Valley Elderberry Longhorn Beetle (Guidelines), complete avoidance (i.e., no adverse effects) may be assumed when a 100-foot buffer is established and maintained around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level. Elderberry shrubs were observed on the north bank of Comanche Creek within a 100-foot buffer of the proposed outfall location, and all of the shrubs observed had stems greater than 1 inch in size. These elderberry shrubs occur approximately 20 feet away from the edge of the proposed outfall construction but are located on privately owned land (**Figure 4**). Since the shrubs were located on privately owned land and access to this property was not granted, the elderberry shrubs were not surveyed for VELB exit holes.

4.3.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Though the elderberry shrubs are located approximately 20 feet from proposed construction activities, the shrubs are located on the opposite bank of Comanche Creek from where the construction will be. Thus, the root system of the elderberry shrubs will not be impacted and the crown of the shrubs are located outside of the construction zone and will not be impacted. Wherever possible, all bushes within 100 feet of the project area should be fenced during the course of construction and clean up to prevent disturbance. No pesticides or herbicides should be used within the vicinity of any elderberry bushes and dust control measures will be necessary during construction to prevent harm to Valley elderberry longhorn beetles. To further ensure that no impacts to these elderberry shrubs occur, dust abatement measures will be implemented during the construction activities within 100 feet of the elderberry shrubs and workers will not be allowed to access the north bank of Comanche Creek. Orange barrier fencing will be used where appropriate to further avoid impacts.

4.3.1.3. PROJECT IMPACTS

As the proposed construction activities will not encroach within the root zone or canopy of the elderberry shrubs located off-site to the north, no impacts to VELB are anticipated. The implementation of the abovementioned avoidance and minimization efforts will further ensure no impacts will occur to the elderberry shrubs or VELB.



Elderberry survey: 7/5/2012(EG)
Aerial: Microsoft Web Map Services
Map Date: 7/13/2012



Figure 4

4.3.1.4. COMPENSATORY MITIGATION

As no impacts to elderberry shrubs are anticipated due to the proposed project, no compensatory mitigation measures will be required for VELB.

4.3.1.5. CUMULATIVE IMPACTS

No cumulative impacts to VELB will occur as a result of the proposed project due to avoidance of impacts to the elderberry shrubs and the implementation of the abovementioned avoidance and mitigation measures.

4.3.2. Giant Garter Snake

The GGS is a federal and state listed threatened species which inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, the GGS relies heavily on rice fields in the Sacramento and San Joaquin Valley, but also uses managed marsh areas in federal national wildlife refuges and state wildlife areas. Giant garter snakes are typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations. However, some riparian woodlands do provide good habitat.

Primary 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 floodwaters during the snake's dormant season. Habitat loss and fragmentation, flood control activities, changes in agricultural and land management practices, predation from introduced species, parasites, water pollution and continuing threats are the main causes for the decline of this species. However, when abundant cover is available, GGS may be able to persist with numerous predators that share the same habitats (Hansen 1990).

4.3.2.1. SURVEY RESULTS

No GGS were observed within Comanche Creek, however, Comanche Creek is considered by the USFWS to be a migration or travel corridor for GGS. Comanche Creek is hydrologically connected to known GGS habitat in Butte Creek. Basking

habitat within the BSA is marginal due to the presence of a few valley oak trees and the overgrowth of blackberries and wild grape along the sides of the banks of Comanche Creek, however the top of the banks is dominated by annual grassland and could provide marginal basking habitat.

4.3.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization measures will be implemented within the BSA per the 1997 *Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California* (GGS Programmatic).

- Construction activities within 200 feet of Comanche Creek must be conducted during the active season for GGS (between May 1 and October 1) to minimize any direct impacts to the species.
- Dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavation or filling of the dewatered habitat.
- Construction personnel will participate in a USFWS worker environmental awareness training program. During the training, workers will be informed of the potential for this species to be present and the associated habitat for GGS and that it is unlawful to take harm or harass GGS.
- The site will be inspected by a USFWS approved biologist within 24 hours prior to the commencement of the construction activities. If GGS are found within the BSA, the USFWS will be notified immediately and the qualified biologist has the authority to stop all construction work on the site until the appropriate corrective measures have been conducted and it is determined that the snake will not be harmed.
- The clearing of wetland vegetation will be confined to the minimal area necessary to excavate the toe of bank for the outfall and riprap placement. Excavation equipment will be located and operated from the top of the bank.
- Movement of heavy equipment to and from the site will be restricted to established roadways to minimize habitat disturbance and no staging or storing of equipment will occur within 200 feet of Comanche Creek.

- Adjacent GGS habitat will be designated as Environmentally Sensitive Areas and will be flagged or fenced off using orange barrier fencing to avoid inadvertent impacts from the construction personnel.
- After completion of the construction activities, any temporary water diversion structures and debris will be removed and the disturbed bank will be restored to pre-construction height and slope and revegetated with an appropriate native seed mix.

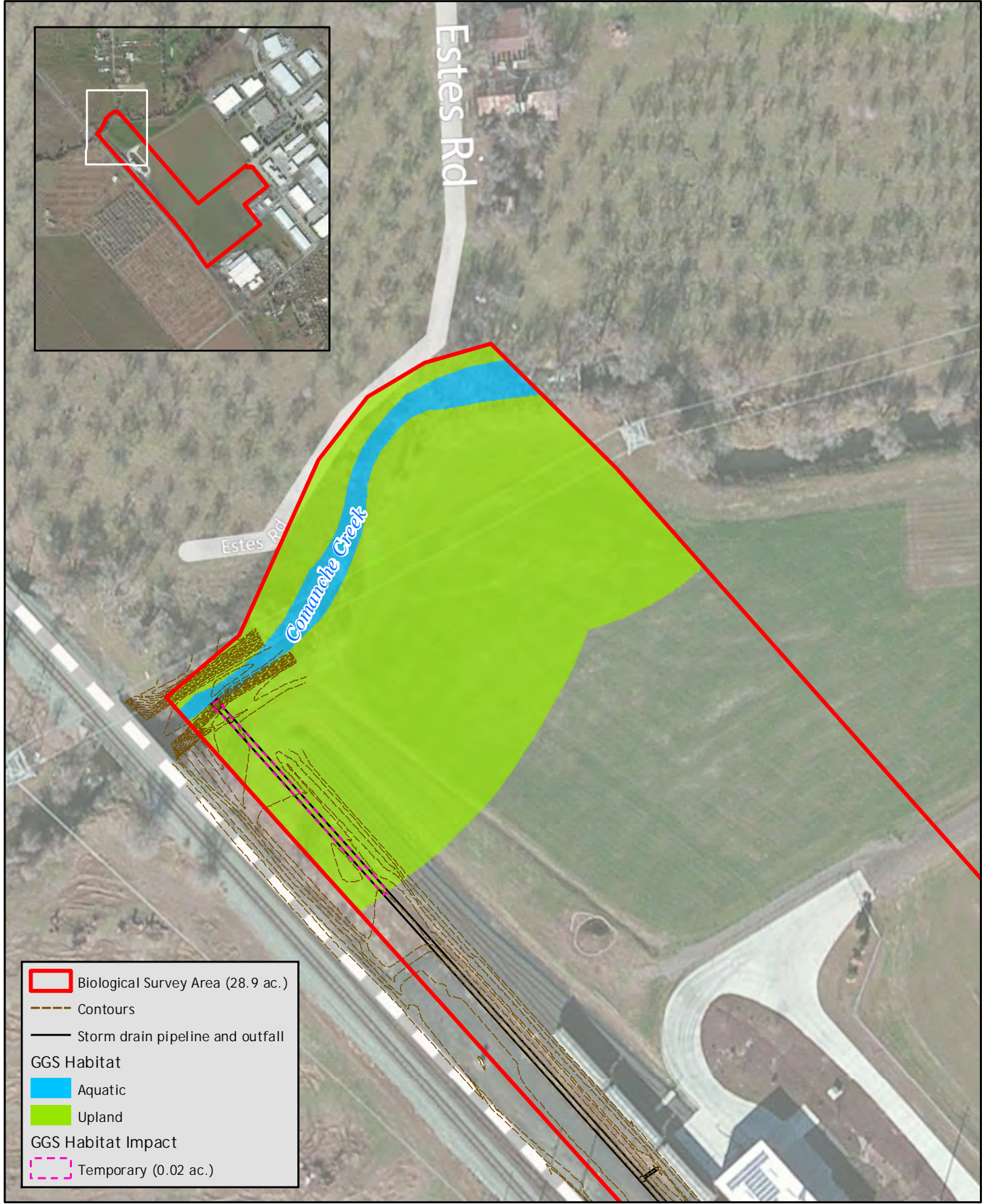
4.3.2.3. PROJECT IMPACTS







By implementing the above described avoidance and minimization measures, no direct impacts to the snake are expected to occur. However, temporary impacts to GGS aquatic and upland habitat will occur from the placement of a small coffer dam to divert creek flows away from the construction zone and the installation of a cemented stormwater outfall into Comanche Creek. GGS upland habitat extends 200 feet from the bank of Comanche Creek. The pipe will be buried underground and the trench will be filled and re-graded to pre-construction conditions and the cofferdam will be removed following the installation, hence, the impacts will be temporary. During the construction activities, the movement of the snake through the water in the creek will not be impeded. A total of 0.02 acre of temporary direct impacts to GGS upland habitat is anticipated (**Figure 5**). Construction within GGS habitat within the BSA is expected to be completed in one season.


4.3.2.4. COMPENSATORY MITIGATION

Actual mitigation is dependent on the level and amount of impact the project causes to potential GGS habitats and determined per GGS Programmatic. Due to the temporary nature of the impacts, compensation will be completed at Level 1 for the temporary impacts to 0.02 acre of GGS terrestrial habitat.

Compensation for Level 1 temporary impacts per the GGS Programmatic requires restoration of affected snake habitat to pre-project conditions within the same season or, at most, the same calendar year. It also includes one calendar year of monitoring of the restored habitat and Project site with photo documentation and letter report documenting pre and post construction conditions due one year from the date restoration occurred (USFWS 2005).



-  Biological Survey Area (28.9 ac.)
-  Contours
-  Storm drain pipeline and outfall
- GGs Habitat**
-  Aquatic
-  Upland
- GGs Habitat Impact**
-  Temporary (0.02 ac.)

 GGS habitat determined by NSE
Upland habitat based on 200 ft. buffer of Comanche Creek
Aerial: Microsoft Web Map Services
Map Date: 7/26/2012

Feet
0 50 100



Figure 5

4.3.2.5. CUMULATIVE IMPACTS

No cumulative impacts to GGS will occur as a result of the proposed project due to the implementation of the abovementioned avoidance and mitigation measures and all impacts to GGS habitat will be temporary.

4.3.3. Western Red Bat

The western red bat is found in California from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. Winter range includes western lowlands and coastal habitats south of San Francisco. The western red bat roosts primarily in trees within forests and woodlands in edge habitats from sea level to mixed conifer forests. However, the western red bat may have an association with riparian habitats with dense stands of cottonwood and sycamore, and orchards (Bolster, 1998). Family groups are known to roost together, forming nursing colonies. They forage in open areas and feed on a variety of insects including moths, crickets, beetles, and cicadas. Migrations typically occur in the spring from March to May and in the autumn from September to October. The western red bat has been seen at temperatures as low as 44°F, however, in these cold climates the bat spends winter in hibernation.

4.3.3.1. SURVEY RESULTS

No bats or bat roosts were observed within the BSA during the field surveys. However, bats are not typically active during the daytime hours when the field surveys were conducted. The valley oak trees present along the banks of Comanche Creek provide potential roosting habitat for the western red bat, though, due to the narrow strip of trees present, the roosting habitat is only marginal on the site.

4.3.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

As the western red bat typically roosts in trees, to avoid and minimize any potential impacts to the bat, no trees will be removed within the BSA. Furthermore, a pre-construction bat survey will be conducted in combination with the pre-construction migratory bird and raptor survey (see Section 4.3.5.2 below) to determine if any bat roosts occur within the BSA.

4.3.3.3. PROJECT IMPACTS

No impacts to the western red bat are expected as a result of the proposed project due to the preservation of all trees within the BSA.

4.3.3.4. COMPENSATORY MITIGATION

No compensatory mitigation is required since no impacts to the western red bat are anticipated.

4.3.3.5. CUMULATIVE IMPACTS

No cumulative impacts to the western red bat will occur due to the proposed project, as no impacts to the western red bat are anticipated.

4.3.4. Burrowing Owl

Western burrowing owls inhabit dry, open grasslands. Nests are usually in small burrows that have been constructed and abandoned by small mammals such as ground squirrels or badgers, however, they have also been known to use man-made structures including cement culverts, cement, asphalt or wood piles, and openings under pavement. The breeding season for burrowing owls is from late March through May, and they often reuse burrows year after year. They perch on top of the burrows and other low structures to forage and watch for other predators. Their diet consists of insects, small reptiles or amphibians and small mammals.

4.3.4.1. SURVEY RESULTS

No burrowing owls were observed within the BSA during the field surveys conducted. However, the survey was not conducted during the breeding season for burrowing owls. In addition, multiple fossorial animal burrows were present throughout the 16-acre portion of the BSA proposed for land acquisition and an area of piled dirt was located adjacent to the southern boundary of the BSA which could be utilized by burrowing owls.

4.3.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

Vegetation removal or ground disturbance in areas where nests of western burrowing owls potentially occur must be conducted between September 1 and February 28 (i.e. the non-breeding season). If vegetation removal or ground disturbance occurs during the breeding season (i.e. March 1 to August 31) then a qualified biologist will conduct pre-construction surveys for western burrowing owl nests. If a potential nest is observed on the site, the area must either be monitored to determine if the nest is active or that area will be avoided. If an active nest is observed, a no-disturbance buffer will be established and no ground disturbance in that area will be allowed until the young have fledged.

4.3.4.3. PROJECT IMPACTS

By implementing the avoidance measures discussed above, no impacts to western burrowing owls will occur as a result of the project.

4.3.4.4. COMPENSATORY MITIGATION

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

4.3.4.5. CUMULATIVE IMPACTS

No cumulative impacts to western burrowing owls will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.3.5. Swainson's Hawk

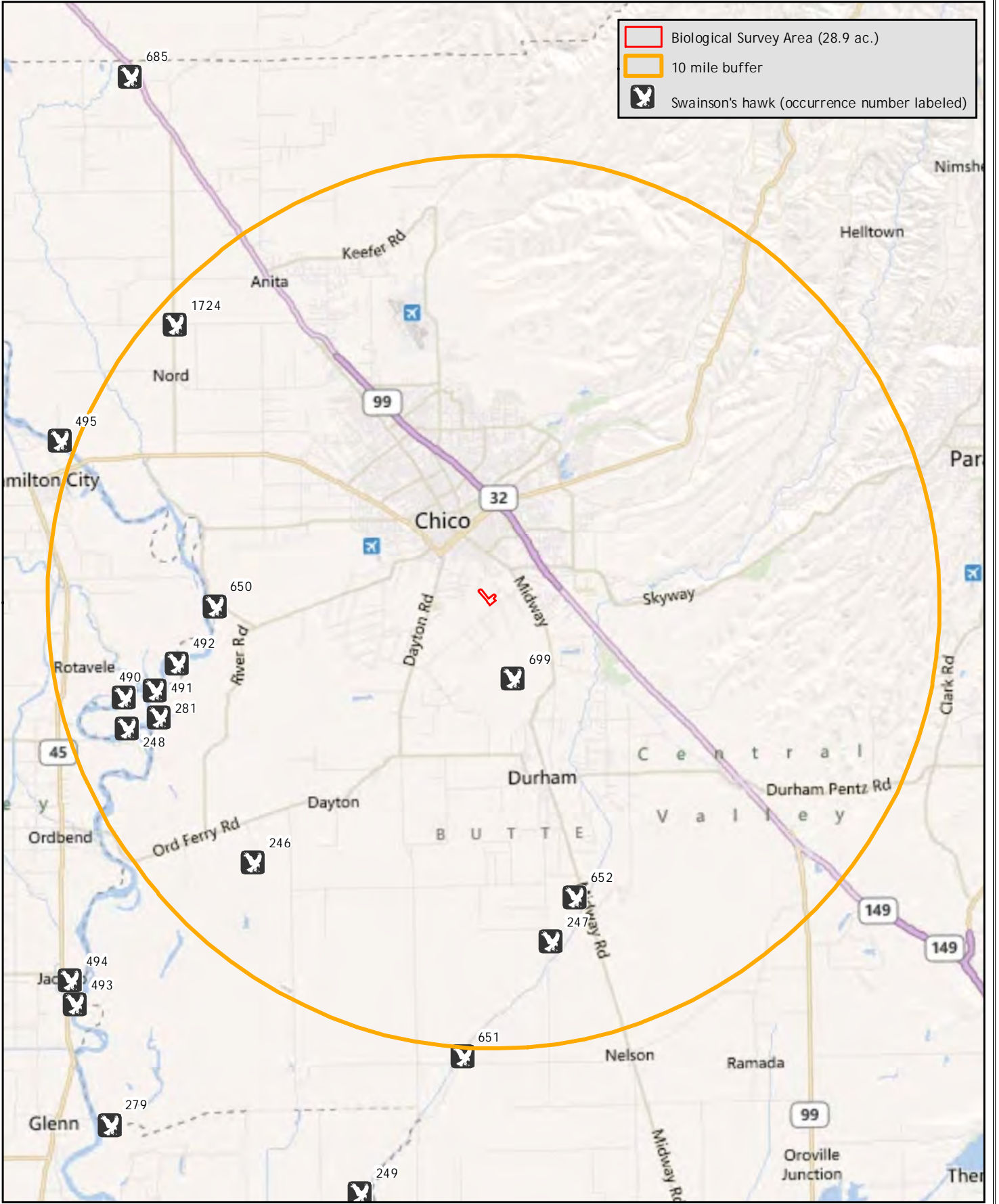
The Swainson's hawk is a long-distance migrant with nesting grounds in western North America. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters primarily in Argentina. Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories, and breeding occurs from late March to late August, peaking in late May through July. Over 85% of Swainson's hawk territories in the Central Valley are in riparian systems adjacent to suitable foraging habitats. Swainson's hawks often nest peripherally to riparian systems of the valley as well as utilizing lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes crops such as vineyards, orchards, certain row crops, rice, corn and cotton crops. Suitable nest sites may be found in mature riparian forest, lone trees or groves of oaks, other trees in agricultural fields, and mature roadside trees. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and DeWater 1994). Swainson's hawks' largest threats are loss of habitat and poisoning due to pesticide use in South America, where they winter.

4.3.5.1. SURVEY RESULTS

Although only marginal nesting habitat occurs along the portion of Comanche Creek within the BSA and no Swainson's hawks or Swainson's hawk nests were observed on the site, the BSA is located within 10 miles of documented Swainson's hawk nests and, thus, was assessed for potential Swainson's hawk foraging habitat. The determination of suitable foraging habitat occurs when there is a documented nest that has been active within the previous five years within a distance of ten miles from the project site (**Figure 4**). According to the CNDDDB there are 11 documented Swainson's hawk nests within 10 miles, with the closest occurrence located approximately 2 miles from the BSA (**Figure 4**). However the closest nest, occurrence number 699, was destroyed in recent years by a storm and no new nests have been observed at that site. Nine of the remaining nest locations were documented between 1988 and 1998 and have not been re-verified as being active in the most updated version of Rarefind. Only one documented occurrence within 10 miles of the BSA, occurrence number 1724, was reported as being active within the past 5 years. However, this occurrence is approximately 9.5 miles away from the BSA. Additionally, Swainson's hawk habitat has been assessed in the draft Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) which is available on-line (<http://www.buttehcp.com>). This HCP/NCCP has been developed by BCAG in conjunction with CDFG and includes a map depicting Swainson's hawk nesting and foraging habitat in Butte County (Figure 4-24 in the HCP). The area in which the BSA is positioned has not been mapped as being Swainson's hawk nesting or foraging habitat (**Attachment B**). This is likely due to the poor habitat present within the BSA and adjacent to the BSA. Only one small parcel located immediately west of the storm drain alignment portion of the BSA is characterized by irrigated row crops, currently planted in alfalfa, which could have a low potential for foraging habitat. However, the remaining adjacent land is dominated by industrial buildings and orchards which hold no habitat for Swainson's hawks.

4.3.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

As mentioned above, only occurrence number 1724 was reported to the CNDDDB within the past 5 years as active. However, this occurrence is approximately 9.5 miles from the BSA and due to the small size of the BSA and the lack of quality foraging habitat in and adjacent to the site, it is not likely that Swainson's hawks nesting 9.5 miles away would forage within the BSA. As such, no compensatory mitigation for impacts to Swainson's foraging habitat will be necessary.



Swainson's hawk occurrences provided by CDFG (9/2011)
Aerial: Microsoft
Map Date: 9/9/2011

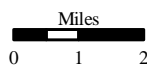


Figure 6

Though no active nests have been recorded in close proximity to the BSA, old nests could be re-used by Swainson's hawks in the future or new nests could be constructed in close proximity to the BSA. Therefore, to ensure no indirect impacts to active nests occur due to any future construction activities, a pre-construction survey for raptor nests per the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000b) will be conducted if construction occurs during the breeding season (March-August). The area to be surveyed should include a ½ mile radius area including and surrounding the BSA and a qualified biologist should conduct the surveys. If active nests are found, mitigation measures consistent with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (Buteo swainsoni) in the Central Valley of California* (Staff Report, CDFG 1994) should be incorporated in the following manner:

- No intensive new disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that may cause nest abandonment or forced fledging, should be initiated within ¼ mile (buffer zone) of an active nest between March 1 and September 15.
- If construction or other project-related activities that may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project proponent) by a qualified biologist (to determine if the nest is abandoned) will be required. If it is abandoned and if the nestlings are still alive, the project proponent shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s).

4.3.5.3. PROJECT IMPACTS

Project related activities that convert the open land within the BSA to developed uses would not impact Swainson's hawk foraging habitat since the open land present is not considered suitable foraging habitat. Additionally, with the incorporation of conducting raptor nest surveys prior to construction activities and the above mentioned avoidance measures, including the preservation of all trees within the BSA, no impacts to Swainson's hawk nests will occur.

4.3.5.4. COMPENSATORY MITIGATION

No compensatory mitigation will be required due to the lack of potential impacts and the incorporation of the avoidance and minimization efforts described above.

4.3.5.5. CUMULATIVE IMPACTS

No cumulative impacts to Swainson's hawks will occur as a result of the project due to the lack of potential impacts and the implementation of the mitigation measures discussed above.

4.3.6. Migratory Bird and Raptor Species

Migratory birds and raptors in the orders Falconiformes (hawks, eagles, and falcons) and Strigiforms (owls) are protected in varying degrees under California Fish and Game Code, Section 3503.5, the MBTA, and CEQA. The BSA currently provides suitable nesting and/or foraging habitat for several of these species within the disturbed annual grassland and vegetation along Comanche Creek. Direct take of active nests, eggs, or birds is prohibited by CDFG and measures must be taken to minimize disturbance. The typical breeding season for migratory bird species in California is from March 1 to August 31.

4.3.6.1. SURVEY RESULTS

Very few bird species were observed during the field surveys conducted. The disturbed annual grassland present on the site and the few trees present along Comanche Creek and Huss Lane provide suitable nesting and foraging habitat for multiple migratory bird species, particularly ground nesting bird species. Additionally, the wood-trestle bridge located immediately to the northwest of the BSA contains potential nesting habitat for a variety of migratory bird species including cliff swallows and black phoebes. A black phoebe was observed flying out from under the south side of the bridge and may be nesting there. However, the remaining area under the bridge was void of bird nests on the date surveyed. This is likely due to the frequent vibrations from trains crossing over the bridge.

4.3.6.2. AVOIDANCE AND MINIMIZATION EFFORTS

Vegetation removal or ground disturbance in areas where nests of birds protected by the MBTA (16 USC §703) and the CFGC (§3503) potentially occur must be conducted between September 1 and February 28 (i.e. the non-breeding season). If vegetation removal or ground disturbance occurs during the breeding season (i.e. March 1 to August 31) then a qualified biologist shall:

- Conduct a survey for all birds and raptors protected by the MBTA no more than 30 days prior to construction activities and map all nests located within 500 feet of construction areas;

- Develop buffer zones around active nests in coordination with CDFG. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least twice per week and a report submitted to CDFG monthly.

If nesting swallows are observed under the bridge, the development of buffer zones as described above will be conducted. Alternatively, prior to the breeding season for cliff swallows, the bridge can be netted or nests can be regularly removed prior to the laying of eggs until construction commences.

4.3.6.3. PROJECT IMPACTS

By implementing the avoidance measures discussed above and by avoiding removal of trees within the BSA, no impacts to migratory bird species will occur as a result of the project.

4.3.6.4. COMPENSATORY MITIGATION

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

4.3.6.5. CUMULATIVE IMPACTS

No cumulative impacts to migratory bird species will occur as a result of the project due to the implementation of the avoidance measures discussed above.

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act Consultation Summary

Section 7 consultation will be required for the proposed project due to the potential for the federally listed GGS and VELB to occur within the BSA. Section 7 consultation will be initiated by the USACE during the Nationwide Permit acquisition process.

5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary

No special-status fish species, critical habitat for federally listed fish species or Essential Fish Habitat occur within the BSA due to the presence of downstream fish barriers.

5.3. California Endangered Species Act Consultation Summary

If during the pre-construction surveys for the western red bat, western burrowing owl, Swainson's hawk, and migratory bird and raptor species an active nest is observed, the CDFG will be consulted to determine appropriate buffer zones or other mitigation actions necessary. Consultation with the CDFG will be necessary to determine if compensatory mitigation is required for the temporary impacts to the marginal Swainson's hawk foraging habitat within the BSA.

5.4. Wetlands and Other Waters Coordination Summary

One jurisdictional waters of the U.S was identified within the BSA, Comanche Creek. The preparation of a formal Delineation of Waters of the U.S. will be required and must be verified by the USACE prior to the start of any construction activities.

5.5. Invasive Species

The BSA is dominated by weedy, non-native plant species including bindweed, hedge parsley, medusahead, and sharp leaved fluellin. Due to the dominance of weed species within the property, it will be important for any vehicles or machinery entering the site to be cleaned prior to leaving the site.

Chapter 6. References

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Appendix A USFWS Species List.

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 110902124537

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Critical habitat, Conservancy fairy shrimp (X)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardii

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris

green sturgeon (T) (NMFS)

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana draytonii

California red-legged frog (T)

Reptiles

Thamnophis gigas

giant garter snake (T)

Plants

Chamaesyce hooveri

Critical habitat, Hoover's spurge (X)

Hoover's spurge (T)

Limnanthes floccosa ssp. californica

Butte County (Shippee) meadowfoam (E)

Critical habitat, Butte County (Shippee) meadowfoam (X)

Orcuttia pilosa

Critical habitat, hairy Orcutt grass (X)

hairy Orcutt grass (E)

Orcuttia tenuis

slender Orcutt grass (T)

Tuctoria greenei

Critical habitat, Greene's tuctoria (=Orcutt grass) (X)

Greene's tuctoria (=Orcutt grass) (E)

Candidate Species**Birds***Coccyzus americanus occidentalis*

Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

HAMLIN CANYON (576B)

SHIPPEE (576C)

CHICO (577A)

ORD FERRY (577B)

LLANO SECO (577C)

NELSON (577D)

PARADISE WEST (592C)

NORD (593C)

RICHARDSON SPRINGS (593D)

County Lists**Butte County****Listed Species****Invertebrates***Branchinecta conservatio*

Conservancy fairy shrimp (E)

Critical habitat, Conservancy fairy shrimp (X)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris

green sturgeon (T) (NMFS)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Reptiles

Thamnophis gigas

giant garter snake (T)

Plants

Chamaesyce hooveri

Critical habitat, Hoover's spurge (X)

Hoover's spurge (T)

Limnanthes floccosa ssp. californica

Butte County (Shippee) meadowfoam (E)

Critical habitat, Butte County (Shippee) meadowfoam (X)

Orcuttia pilosa

Critical habitat, hairy Orcutt grass (X)

hairy Orcutt grass (E)

Orcuttia tenuis

slender Orcutt grass (T)

Tuctoria greenei

Critical habitat, Greene's tuctoria (=Orcutt grass) (X)

Greene's tuctoria (=Orcutt grass) (E)

Proposed Species

Amphibians

Rana draytonii

Critical habitat, California red-legged frog (PX)

Candidate Species

Amphibians

Rana muscosa

mountain yellow-legged frog (C)

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (C)

Mammals

Martes pennanti

fisher (C)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environment documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as

part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be

December 01, 2011.

Appendix B CNDDDB Species List

California Department of Fish and Game
Natural Diversity Database
Chico and 8 Surrounding Quads

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Ahart's buckwheat <i>Eriogonum umbellatum</i> var. <i>ahartii</i>	PDPGN086UY			G5T2	S2	1B.2
2 Ahart's paronychia <i>Paronychia ahartii</i>	PDCAR0L0V0			G2	S2	1B.1
3 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
4 American peregrine falcon <i>Falco peregrinus anatum</i>	ABNKD06071	Delisted	unknown code...	G4T3	S2	
5 Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	IICOL49020			G1	S1	
6 Brazilian watermeal <i>Wolffia brasiliensis</i>	PMLEM03020			G5	S1.3	2.3
7 Butte County checkerbloom <i>Sidalcea robusta</i>	PDMAL110P0			G2	S2.2	1B.2
8 Butte County fritillary <i>Fritillaria eastwoodiae</i>	PMLIL0V060			G3Q	S3	3.2
9 Butte County golden clover <i>Trifolium jokerstii</i>	PDFAB40310			G1	S1.2	1B.2
10 Butte County meadowfoam <i>Limnanthes floccosa</i> ssp. <i>californica</i>	PDLIM02042	Endangered	Endangered	G4T1	S1	1B.1
11 Butte County morning-glory <i>Calystegia atriplicifolia</i> ssp. <i>buttensis</i>	PDCON04012			G5T3	S3	4.2
12 California beaked-rush <i>Rhynchospora californica</i>	PMCYP0N060			G1	S1.1	1B.1
13 California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041		Threatened	G4T1	S1	
14 California linderiella <i>Linderiella occidentalis</i>	ICBRA06010			G3	S2S3	
15 California satintail <i>Imperata brevifolia</i>	PMPOA3D020			G2	S2.1	2.1
16 Coastal and Valley Freshwater Marsh	CTT52410CA			G3	S2.1	
17 Conservancy fairy shrimp <i>Branchinecta conservatio</i>	ICBRA03010	Endangered		G1	S1	
18 Ferris' milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	PDFAB0F8R3			G1T1	S1	1B.1
19 Great Valley Cottonwood Riparian Forest	CTT61410CA			G2	S2.1	
20 Great Valley Mixed Riparian Forest	CTT61420CA			G2	S2.2	
21 Great Valley Valley Oak Riparian Forest	CTT61430CA			G1	S1.1	
22 Great Valley Willow Scrub	CTT63410CA			G3	S3.2	
23 Greene's tuctoria <i>Tuctoria greenei</i>	PMPOA6N010	Endangered	Rare	G2	S2.2	1B.1
24 Hoover's spurge <i>Chamaesyce hooveri</i>	PDEUP0D150	Threatened		G2	S2.1	1B.2
25 Norris' beard moss <i>Didymodon norrisii</i>	NBMUS2C0H0			G3G4	S3S4	2.2


California Department of Fish and Game
Natural Diversity Database
Chico and 8 Surrounding Quads

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
26 Northern Basalt Flow Vernal Pool	CTT44131CA			G3	S2.2	
27 Northern Hardpan Vernal Pool	CTT44110CA			G3	S3.1	
28 Northern Volcanic Mud Flow Vernal Pool	CTT44132CA			G1	S1.1	
29 Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	PMJUN011L2			G2T2	S2.2	1B.1
30 Red Hills soaproot <i>Chlorogalum grandiflorum</i>	PMLIL0G020			G3	S3	1B.2
31 Sacramento anthicid beetle <i>Anthicus sacramento</i>	IICOL49010			G1	S1	
32 Sierra Nevada red fox <i>Vulpes vulpes necator</i>	AMAJA03012		Threatened	G5T3	S1	
33 Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070		Threatened	G5	S2	
34 Yuma myotis <i>Myotis yumanensis</i>	AMACC01020			G5	S4?	
35 adobe-lily <i>Fritillaria pluriflora</i>	PMLILOV0F0			G3	S3	1B.2
36 bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S2	
37 bank swallow <i>Riparia riparia</i>	ABPAU08010		Threatened	G5	S2S3	
38 big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	PDAST11061			G3G4T2	S2	1B.2
39 brownish beaked-rush <i>Rhynchospora capitellata</i>	PMCYP0N080			G5	S2S3	2.2
40 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC
41 chinook salmon - Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i>	AFCHA0205A	Threatened	Threatened	G5	S1	
42 coast horned lizard <i>Phrynosoma blainvillii</i>	ARACF12100			G4G5	S3S4	SC
43 flagella-like atractylocarpus <i>Campylopodia stenocarpa</i>	NBMUS84010			G5	S1?	2.2
44 giant garter snake <i>Thamnophis gigas</i>	ARADB36150	Threatened	Threatened	G2G3	S2S3	
45 great blue heron <i>Ardea herodias</i>	ABNGA04010			G5	S4	
46 great egret <i>Ardea alba</i>	ABNGA04040			G5	S4	
47 hairy Orcutt grass <i>Orcuttia pilosa</i>	PMPOA4G040	Endangered	Endangered	G2	S2.1	1B.1
48 hoary bat <i>Lasiurus cinereus</i>	AMACC05030			G5	S4?	
49 loggerhead shrike <i>Lanius ludovicianus</i>	ABPBR01030			G4	S4	SC

California Department of Fish and Game
Natural Diversity Database
Chico and 8 Surrounding Quads

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
50 osprey <i>Pandion haliaetus</i>	ABNKC01010			G5	S3	
51 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC
52 pink creamsacs <i>Castilleja rubicundula ssp. rubicundula</i>	PDSCR0D482			G5T2	S2	1B.2
53 recurved larkspur <i>Delphinium recurvatum</i>	PDRAN0B1J0			G2	S2.2	1B.2
54 round-leaved filaree <i>California macrophylla</i>	PDGER01070			G2	S2	1B.1
55 silver-haired bat <i>Lasionycteris noctivagans</i>	AMACC02010			G5	S3S4	
56 slender-leaved pondweed <i>Stuckenia filiformis</i>	PMPOT03090			G5	S1S2	2.2
57 tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020			G2G3	S2	SC
58 valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened		G3T2	S2	
59 veiny monardella <i>Monardella douglasii ssp. venosa</i>	PDLAM18082			G5T1	S1.1	1B.1
60 vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened		G3	S2S3	
61 vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered		G3	S2S3	
62 watershield <i>Brasenia schreberi</i>	PDCAB01010			G5	S2	2.3
63 western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011			G5T4	S3?	SC
64 western pond turtle <i>Emys marmorata</i>	ARAAD02030			G3G4	S3	SC
65 western red bat <i>Lasiurus blossevillii</i>	AMACC05060			G5	S3?	SC
66 western spadefoot <i>Spea hammondi</i>	AAABF02020			G3	S3	SC
67 western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
68 white-stemmed clarkia <i>Clarkia gracilis ssp. albicaulis</i>	PDONA050J1			G5T2	S2.2?	1B.2
69 woolly meadowfoam <i>Limnanthes floccosa ssp. floccosa</i>	PDLIM02043			G4T4	S3.2	4.2
70 woolly rose-mallow <i>Hibiscus lasiocarpus var. occidentalis</i>	PDMAL0H0R3			G4	S2.2	1B.2
71 yellow warbler <i>Dendroica petechia brewsteri</i>	ABPBX03018			G5T3?	S2	SC

Appendix C CNPS Species List



Inventory of Rare and Endangered Plants

v7-11aug 8-05-11

Status: search results - Wed, Aug. 31, 2011 15:31 c

{QUADS_123} =~ m/577A|593C|593D|576B|576C|592C|577B|577C

Tip: Want to search by habitat? Try the **Checkbox and Preset** search page.[\[all tips and help.\]](#)
[\[search history\]](#)


























Your Quad Selection: Chico (577A) 3912167, Nord (593C) 3912178, Richardson Springs (593D) 3912177, Hamlin Canyon (576B) 3912166, Shippee (576C) 3912156, Paradise West (592C) 3912176, Ord Ferry (577B) 3912168, Llano Seco (577C) 3912158, Nelson (577D) 3912157

Hits 1 to 28 of 28
Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	List 1B.1
	<input type="checkbox"/>	1	Balsamorhiza macrolepis var. macrolepis	big-scale balsamroot	Asteraceae	List 1B.2
	<input type="checkbox"/>	1	Brasenia schreberi	watershield	Cabombaceae	List 2.3
	<input type="checkbox"/>	1	California macrophylla	round-leaved filaree	Geraniaceae	List 1B.1
	<input type="checkbox"/>	1	Campylopodiella stenocarpa	flagella-like atractylocarpus	Dicranaceae	List 2.2
	<input type="checkbox"/>	1	Cardamine pachystigma var. dissectifolia	dissected-leaved toothwort	Brassicaceae	List 3
	<input type="checkbox"/>	1	Castilleja rubicundula ssp. rubicundula	pink creamsacs	Orobanchaceae	List 1B.2
	<input type="checkbox"/>	1	Chamaesyce hooveri	Hoover's spurge	Euphorbiaceae	List 1B.2
	<input type="checkbox"/>	1	Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	List 1B.2
	<input type="checkbox"/>	1	Clarkia gracilis ssp. albicaulis	white-stemmed clarkia	Onagraceae	List 1B.2
	<input type="checkbox"/>	1	Delphinium recurvatum	recurved larkspur	Ranunculaceae	List 1B.2
	<input type="checkbox"/>	1	Didymodon norrisii	Norris' beard moss	Pottiaceae	List 2.2
	<input type="checkbox"/>	1	Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	List 3.2
	<input type="checkbox"/>	1	Fritillaria pluriflora	adobe-lily	Liliaceae	List

	<input type="checkbox"/>	1	<u>Hibiscus lasiocarpus</u> var. occidentalis	woolly rose- mallow	Malvaceae	List 1B.2
	<input type="checkbox"/>	1	<u>Imperata brevifolia</u> 	California satintail	Poaceae	List 2.1
	<input type="checkbox"/>	1	<u>Juncus leiospermus</u> var. leiospermus 	Red Bluff dwarf rush	Juncaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Limnanthes floccosa</u> ssp. californica 	Butte County meadowfoam	Limnanthaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Monardella douglasii</u> ssp. venosa 	veiny monardella	Lamiaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Orcuttia pilosa</u> 	hairy Orcutt grass	Poaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Paronychia ahartii</u> 	Ahart's paronychia	Caryophyllaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Rhynchospora californica</u> 	California beaked-rush	Cyperaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Rhynchospora capitellata</u> 	brownish beaked- rush	Cyperaceae	List 2.2
	<input type="checkbox"/>	1	<u>Sidalcea robusta</u> 	Butte County checkerbloom	Malvaceae	List 1B.2
	<input type="checkbox"/>	1	<u>Stuckenia filiformis</u>	slender-leaved pondweed	Potamogetonaceae	List 2.2
	<input type="checkbox"/>	1	<u>Trifolium jokerstii</u> 	Butte County golden clover	Fabaceae	List 1B.2
	<input type="checkbox"/>	1	<u>Tuctoria greenei</u> 	Greene's tuctoria	Poaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Wolffia brasiliensis</u>	Brazilian watermeal	Lemnaceae	List 2.3

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

No more hits.



Appendix D Species Observed Within the BSA

Plant Species Observed in the BSA on 9/1/11 and 7/5/12	
Scientific Name	Common Name
Alopecurus sp.	Foxtail grass
Amaranthus albus	Tumbleweed
Artemisia douglasiana	Mugwort
Avena barbata	Wild oat
Bromus diandrus	Rip-gut brome
Bromus hordeaceus	Soft chess
Carduus pycnocephalus	Italian thistle
Carex barbarae	Santa Barbara sedge
Centaurea solstitialis	Yellow star thistle
Chamaesyce maculata	Spotted spurge
Chenopodium botrys	Jerusalem oak
Convolvulus arvensis	Bindweed
Cynodon dactylon	Bermuda grass
Cynosaurus echinatus	Hedgehog dogtail
Epilobium brachyantherum	Tall willowherb
Juglans nigra	Black walnut
Kickxia elatine	Sharp-leaved fluellin
Lactuca serriola	Prickly lettuce
Lolium multiflorum	Italian rye
Medicago sativa	Alfalfa
Paspalum diliatum	Dalisgrass
Plantago lanceolata	English plantain
Polygonum arenastrum	Common knotweed
Prunus dulcis	Almond
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus sp.	White oak hybrid
Raphanus sativus	Wild radish
Rubus discolor	Himalayan blackberry
Rumex crispus	Curly dock
Silybum marianum	Milk thistle
Sorghum halapense	Johnsongrass
Taeniatherum caput-medusae	Medusahead
Torilis arvensis	Hedge parsley
Tribulus terrestris	Puncture-vine
Triticum aestivum	Bread wheat
Trygopogon sp.	Salsify
Verbascum blattaria	Moth mullein
Verbascum thapsus	Wooly mullein
Vicia villosa	Vetch
Vitis californica	Wild grape
Xanthium strumarium	Cocklebur
Wildlife Species Observed in the BSA on 9/1/11 and 7/5/12	
Scientific Name	Common Name
Lepus californicus	Jackrabbit
Felis domesticus	Domestic cat
Cathartes aura	Turkey vulture
Buteo jamaicensis	Red-tailed hawk
Sayornis nigricans	Black phoebe
Zenaida macroura	Mourning dove

Attachment A Surveyor Qualifications



Elena Gregg Botanist/Certified Arborist

EDUCATION

- **B.S., Biology – Environmental Biology and Management, 2004**
University of California, Davis

EXPERIENCE

6 years

- **NorthStar Environmental; formerly known as Gallaway Consulting**
Botanist/Certified Arborist
 - **U.S.D.A. Forest Service, Truckee Ranger District**
Botanical Technician
 - **Jones and Stokes**
Field Botanist
 - **U.C. Davis, Botanical Conservatory**
Nursery Technician
-

Elena Gregg is proficient in conducting botanical/rare plant surveys, wetland delineations, and valley elderberry longhorn beetle surveys. She has also classified and mapped habitat for the U.S. Forest Service. Ms. Gregg has acquired extensive knowledge of greenhouse management and exotic and native plant maintenance and identification through her many years working for the U.C. Davis Botanical Conservatory. In 2007, Ms. Gregg completed her International Society of Arboriculture Arborist Certification (WE-8033A). Her areas of expertise include general botanical surveys and plant identification, rare plant surveys, tree inventories, tree health assessments, and wetland delineations. As a botanist with NorthStar Environmental; formerly known as Gallaway Consulting, Ms. Gregg has conducted rare plant surveys in a wide variety of habitats and eco-regions using standardized Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered plants and Natural Communities (CDFG 2000); Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS 2000); and Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants (CNPS1998). In addition, Ms. Gregg prepares biological resource assessments, arborist reports, preliminary wetland evaluations, and gathers and organizes baseline data for various environmental projects. Since joining NorthStar Environmental; formerly known as Gallaway Consulting, Ms. Gregg has also prepared tree planting plans for restoration projects and helped to install plantings. Ms. Gregg has also conducted botanical surveys for the U.S. Forest Service using the Jepson Manual to identify sensitive plant species, has used Forest Service protocol to assess the health of aspen stands, and participated in the implementation of the U.S. Forest Service's noxious weed management plan. In addition, Ms. Gregg worked as a field botanist for Jones and Stokes conducting rare plant surveys and keying out wetland and vernal pool plants.

Attachment B HCP Swainson's Hawk Habitat Map

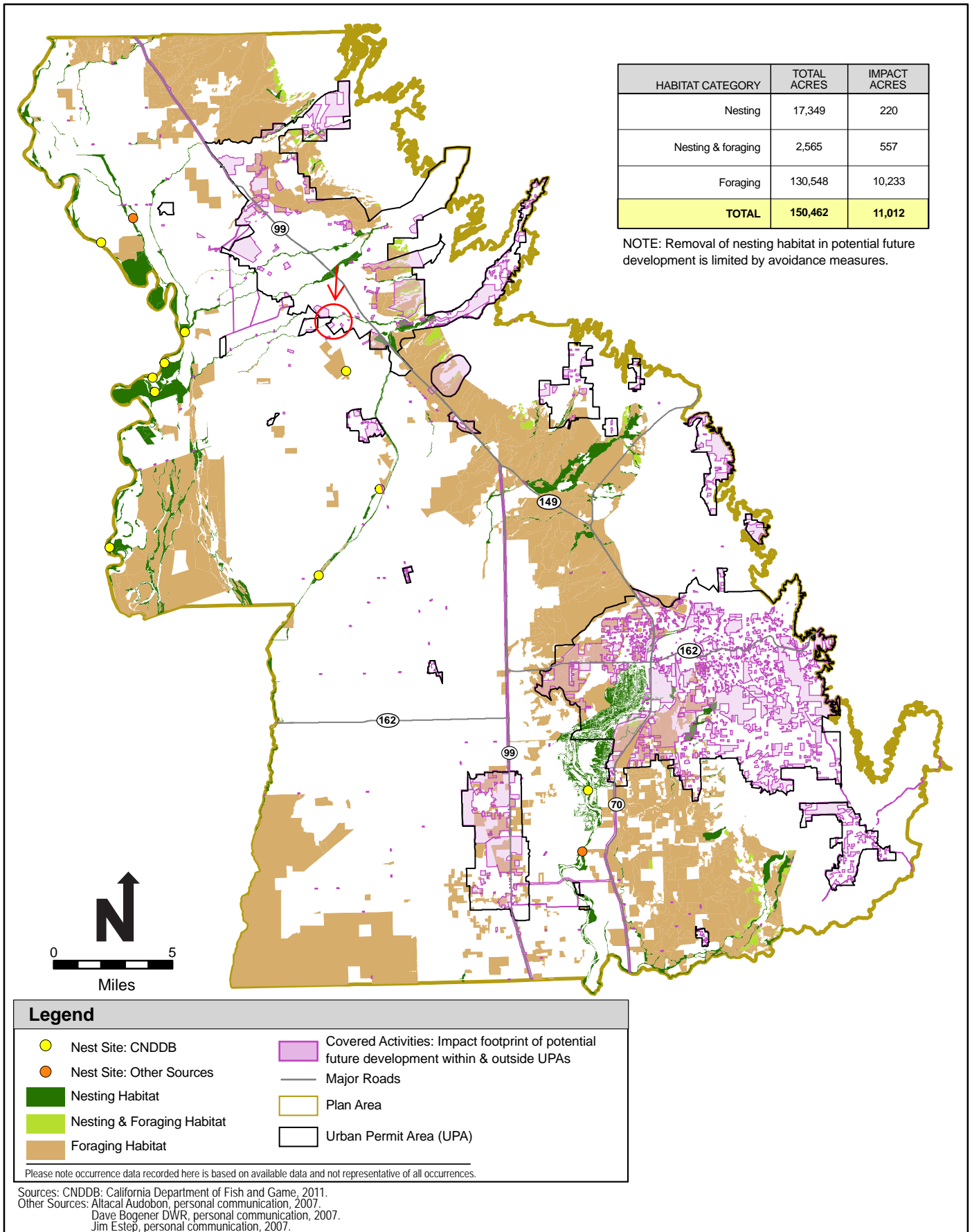


Figure 4-24. Swainson's Hawk: Direct Impacts of Covered Activities