Biological Resources Assessment

Butte Community College

Butte County, California

September 2011

Prepared for:

Butte College Facilities Planning and Management
Attn: Mike Miller
3536 Butte Campus Drive
Oroville, CA 95965

Prepared by:

NorthStar
ENVIRONMENTAL DIVISION
Formerly Gallaway Consulting

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1. Introduction

Portions of the Butte Community College Campus (Campus) have been surveyed in the past for biological resources and wetlands. The purpose of this document is to summarize the results of these past surveys and form an overall updated assessment of special-status species and vegetation communities that have potential to occur or are known to occur within the entire Campus property.

2. Environmental Setting

The Campus is situated at the toe of the foothills associated with the Sierra Nevada Mountain Range north of Oroville in Butte County, CA. The 911.7-acre Campus site is located in Sections 21, 22, 27-29, Township 21 N Range 3 E, of the Hamlin Canyon U.S. Geological Survey (USGS) 7.5-minute quadrangle (**Figure 1**). The Campus occurs at a transition zone and extends from blue oak woodlands in relatively steep and rolling terrain to the north to annual grassland with flat to gently sloping terrain in the south. Elevations range from 266 feet to 720 feet above sea level onsite.

3. Methods

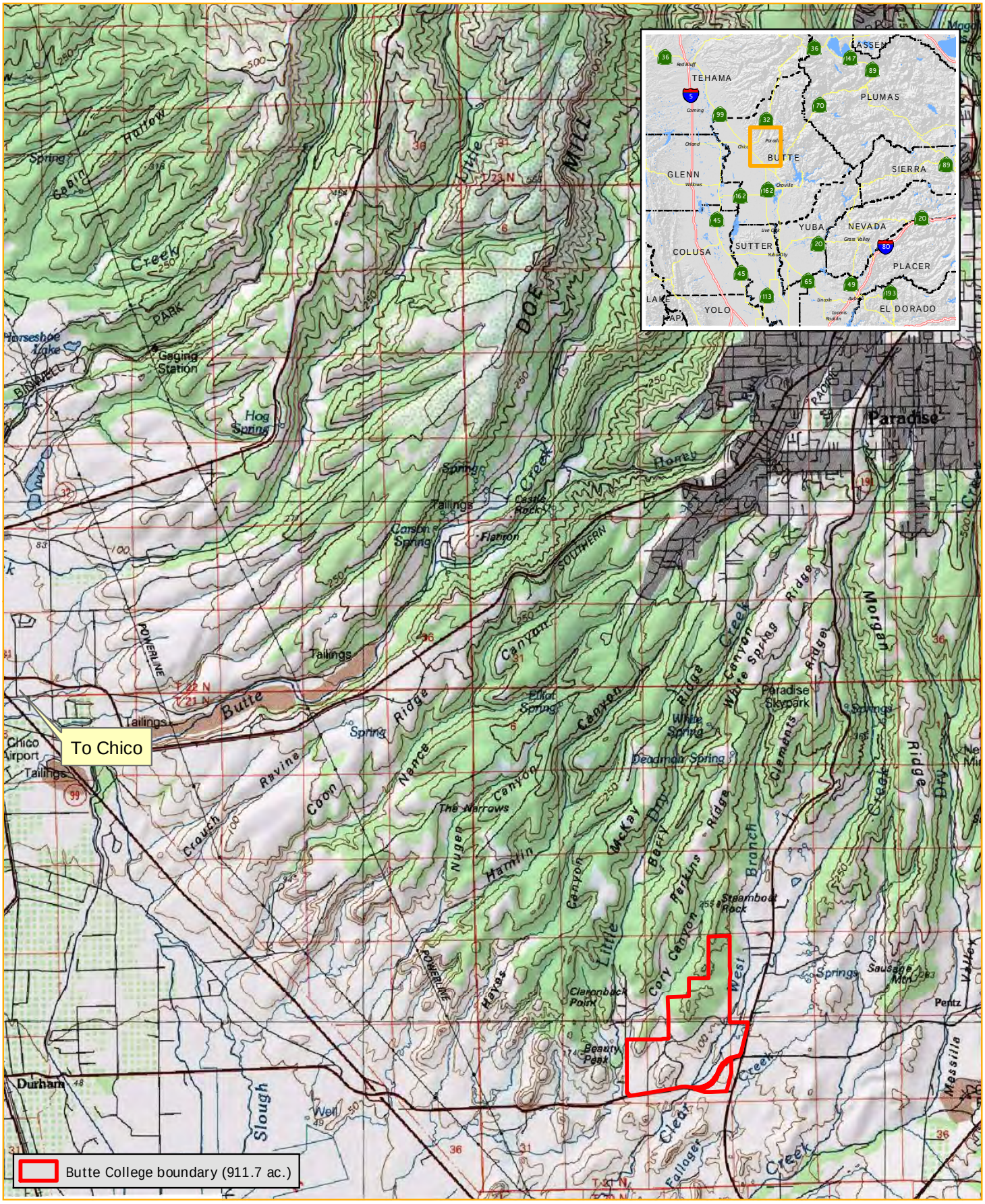
Available documents regarding past surveys conducted within the Campus were reviewed and past surveyor, botanist Mary Bailey, was interviewed due to her extensive knowledge of the Campus property. A summary of the past biological surveys conducted throughout the Campus that were reviewed is presented in **Attachment A**. In addition, updated information from the California Department of Fish and Game (CDFG) Natural Diversity Database (CNDDB) was gathered to create a 5-mile CNDDB occurrence map (**Figure 2**). Aerial photographs of the area were used to create the vegetation community map and field visits by botanist Elena Gregg were conducted on June 14 and July 6, 2011 to ground truth the vegetation map.

4. Results

4.1 Vegetation Communities

California vegetation community types are described in the California Wildlife Habitat Relationships (CWHR) system based on classifications created by Mayer and Laudenslayer (1988). The CWHR system was designed to aid in the mapping of habitats utilized by California's commonly-occurring birds, mammals, reptiles, and amphibians. The vegetation communities occurring within the Campus include blue oak woodland, annual grassland, urban, cropland, valley-foothill riparian, fresh emergent wetland, and open water (**Figure 3**, **Table 1**). These community types are described further below.

Butte-Glenn Community College **Location**



Within Sections 21, 22, 27-29 of
T21N, R3E Butte County, CA.
Hamlin Canyon USGS 7.5' Quad.
Map Date: June 16, 2011

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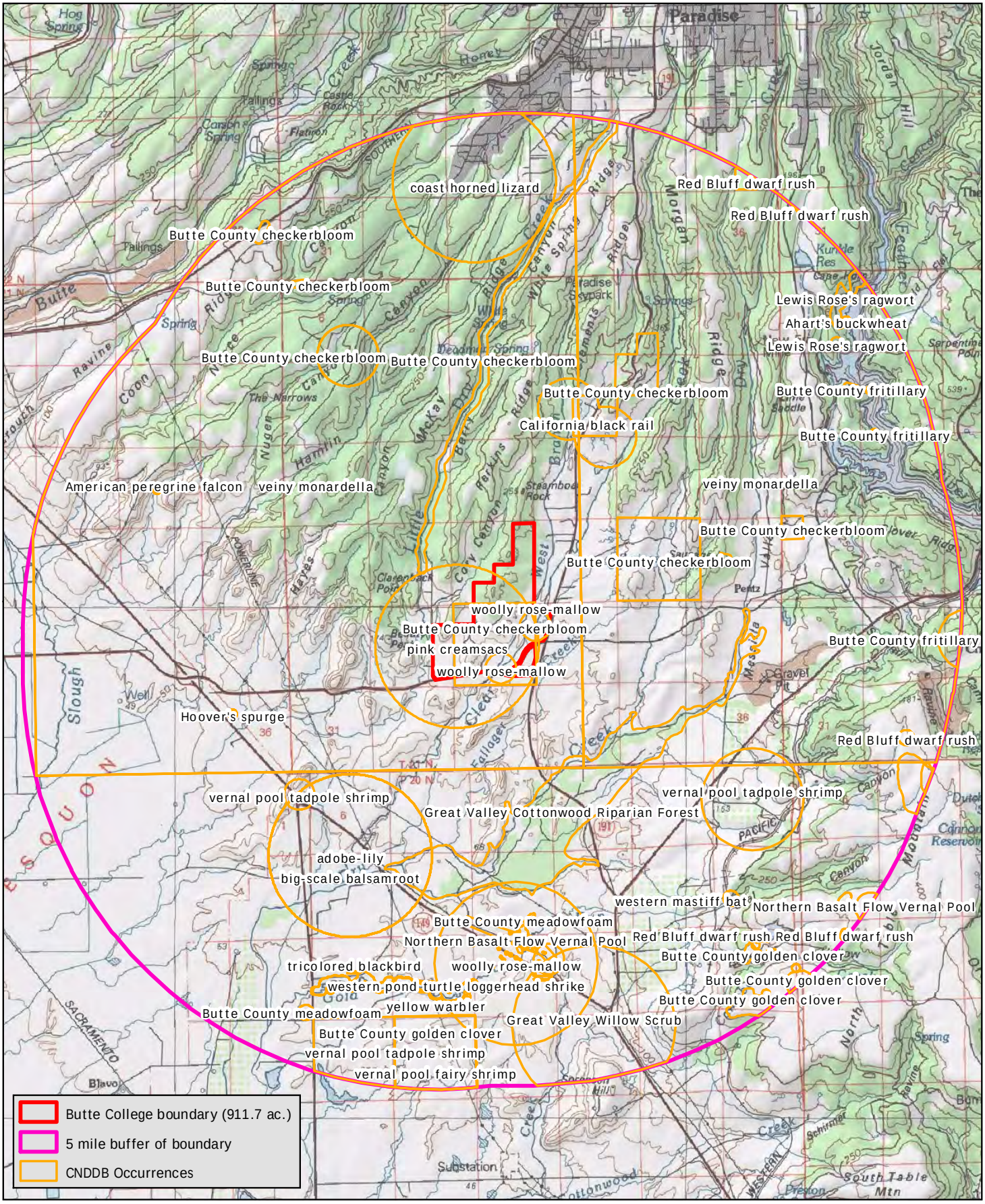
Figure 1

Butte-Glenn Community College **CNDDB Occurrences**



Within Sections 21, 22, 27-29 of
T21N, R3E Butte County, CA.
CNDDB provided by CDFG (5/2011)
Hamlin Canyon USGS 7.5' Quad.
Map Date: June 16, 2011

Miles
0 0.5 1

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Figure 2

Butte College Facilities Master Plan **Vegetation Community Map**

Butte College boundary (911.7)

Vegetation Class

- Annual grassland (231.4 ac.)
- Blue Oak Woodland (307.4 ac.)
- Crops (92.9 ac.)
- Fresh Emergent Wetland (3.6 ac.)
- Riparian (54.8 ac.)
- Urban/disturbed (206.8 ac.)
- Water (14.7 ac.)

Little Dry Creek
WILLIAMS RD
OLD STAGE RD
CORY CANYON RD
Cory Canyon
ECHO MOUNTAIN DR
RUNAWAY RD
TWO CREEKS RD
W Branch Clear Creek
BUTTE CAMPUS DR
Clear Creek
WILLIAMS RD
DURHAM PENTZ RD
CIRCLE 4 CT
HWY 191
Fallleger Creek

Vegetation classes determined by Gallaway Consulting using Mayer and Laudenslayer (1988).
Aerial: 2009
Map date: July 13, 2011

Feet
0 500 1,000

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Figure 3

Table 1. List of vegetation communities present within the Campus.

Vegetation Community	Estimated Acreage
Blue Oak Woodland	307.4
Annual Grassland	232.5
Urban	211.4
Cropland	92.5
Valley-foothill Riparian	58.9
Water	9.1
Fresh Emergent Wetland	

Blue Oak Woodlands: Blue oak woodlands occur along the foothills that form a nearly continuous ring around the Central Valley and are associated with shallow, rocky, well drained soils in hilly terrain where the water table is usually unavailable. Blue oak woodlands generally have an overstory of scattered trees with canopy coverage ranging from fairly opened to nearly closed on better quality sites. Blue oak is the dominant species comprising 85-100 percent of the trees present. Common associates in the canopy include coast live oak and valley oak. Associated shrub species include poison oak, California coffeeberry, buckbrush, redberry, California buckeye and manzanita species. The ground cover usually consists of annual grasses. According to Mayer and Laudenslayer (1988), with the exception of riparian habitat, hardwood habitats including blue oak woodlands, provide breeding habitat for more wildlife species than any other habitat in California. They estimated in 1980 that these woodlands provide important breeding habitat for over 29 amphibian and reptile species, 57 bird species and 10 mammal species. Common species observed in blue oak woodlands can include scrub jays, yellow-billed magpies, western gray squirrels, California ground squirrels, and western fence lizards. Blue oak woodlands dominate the northern portion of the Campus.

Annual grassland: Annual grassland habitats are found on flat plains to gently rolling foothills and often occur in between or adjacent to other wooded habitat types. Annual grasslands are described as open grasslands composed primarily of annual plant species. Species commonly found within annual grasslands include wild oats, ripgut brome, red brome, soft chess, wild barely, foxtail fescue, filaree, and various clovers among others. Annual grasslands can frequently support micro-habitat such as vernal pools and vernal pool complexes. These vernal pools provide unique habitats for several endemic and rare California plants, invertebrates (i.e. the federally listed fairy shrimp), and amphibians. Wildlife species that use annual grasslands include the western fence lizard, garter snake, western rattlesnake, black-tailed jackrabbit, California ground squirrel, burrowing owl, short-eared owl, horned lark, western meadowlark, northern harrier, and American kestrel. Vernal pools occur within a few areas of annual grasslands within the Campus. The majority of the annual grassland habitat present on the Campus occurs in the southern portion of the property. In addition, there are a few areas adjacent to the riparian corridors along the West Branch of Clear Creek that have been planted with California native bunch grasses.

Urban: Areas on the Campus where development and other unclassified disturbed land occurred were characterized as urban habitat. Urban habitat can occur anywhere and includes graded areas, disturbed roadsides, commercial and residential developments, and associated infrastructure (i.e. roads). As stated by Mayer and Laudenslayer (1988), most units of the urban vegetation are relatively static in species composition due to maintenance. Species commonly associated with the urban environment include scrub jays, raccoons, European starlings, mockingbirds, house finches, striped skunks, opossum, and rock doves.

Cropland: Croplands include a variety of different sizes, shapes, and growing patterns. Typically croplands are located in flat to gently rolling terrain in fertile soils. Within the Campus, croplands generally included irrigated crops, fallow disked land and a small area of vineyard. Irrigated crops can include annual seed producing grasses, cereal rye, oats, wheat, hay, and alfalfa. They are usually planted in the fall and then harvested in the spring. They may also be rotated with other irrigated crops after the fall harvest of a previous crop, dry farmed, and then harvested in the late spring. Volunteer native or naturalized herbaceous species may colonize fallowed irrigated fields. The irrigated crop fields within the study area were not currently active at the time of the surveys. Many of the fields seemed fallow and were inhabited by non-native annual grasses and forbs. Cropland and vineyards are often planted on fertile soils that would have supported a variety of wildlife species. Deer and rabbits often browse vineyards and other mammals such as squirrels, moles, and gophers and many bird species feed on the fruits and grains produced in croplands. The most typical bird species include scrub-jays, crows, plain titmouse, Brewer's blackbird, and house finches. Within the Campus, croplands were scattered throughout the southern portion of the property.

Valley Foothill Riparian: Valley foothill riparian habitats occur within the Central Valley and the surrounding foothills in sloping alluvial fans and slightly dissected terraces. They are associated with floodplains of streams and other drainages, typically with low velocity water flows and flat to gentle topography. Valley foothill riparian typically contains a mix of cottonwood, sycamore and valley oak with a canopy cover of 20 to 80 percent. The subcanopy often includes various willows, alders and buttonbush. In addition to a subcanopy, a vine understory often occurs, which includes blackberry, grapes, poison oak, and wild rose. Occasionally an herbaceous layer with various shade tolerant grasses exists. Riparian habitat supports highly diverse wildlife and is important for foraging and nesting for many songbirds, mammals, reptiles and amphibians including flycatchers, warblers, bushtit, scrub jay, red-shouldered hawk, Cooper's hawk, striped skunk, raccoon, squirrels, and western pond turtle. Valley foothill riparian habitat within the Campus occurred along the banks of drainages in the southern portion of the property. Riparian habitats in California have also been broken down into sub-classifications based on the dominant species present. Due to the rarity and productivity of many of these sub-classifications, the CNDDB considers them to be sensitive natural communities (SNC). Two riparian SNCs occur within the Campus including Great Valley mixed riparian forest and Great Valley willow scrub. These two SNCs are described in further detail below.

Open Water: Open water habitat can vary from small, palustrine ponds to lakes to large streams. Open water can be found throughout California and often found within or adjacent to other habitat types including lacustrine and riverine habitats. Wildlife species that typically utilize open water habitats include pacific tree frogs, bullfrogs, garter snakes, deer, and a variety of waterfowl species including mallards and killdeer. Open water present within the Campus includes small cattle ponds and detention ponds scattered throughout the property.

Fresh Emergent Wetland: Fresh Emergent Wetland (FEW) habitat is found throughout California, within all ranges at almost all elevations (typically below 7500 ft). These wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominants typically consist of sedges, rushes, and nutgrasses on periodically flooded sites, and cattails and bulrushes within wetter sites. These habitats are among the most productive in California, providing food, cover, and water for more than 160 species of birds, and numerous mammals, reptiles, and amphibians. Some wildlife species rely on FEW for their entire life cycle. The FEW habitat type is found onsite within the northern-most pond that had been created in between Clear Creek and the West Branch of Clear Creek.

4.2 Migratory Deer Herds

The Campus is not located within any Butte County (County) designated winter ranges for migratory deer herds (**Figure 4**). However, the northernmost portion of blue oak woodland habitat onsite is in the deer herd area and could support foraging habitat for migratory deer herds. During winters, migratory deer herds travel to elevations ranging from 500 to 4,000 feet above sea level, and tend to utilize chaparral and scrub type habitats with a dense shrub layer for bedding down and riparian habitats for foraging and accessing water. Deer have been spotted within the Campus; however, it is believed that these deer are year-round residents and not a part of a migratory deer herd.

4.3 Special Status Species

Based on the past surveys conducted on the Campus and the updated CNDDB occurrence map (**Figure 2**), a list of species and sensitive natural communities (SNC) known to occur within the Campus and those with potential to occur are listed in **Table 2**.

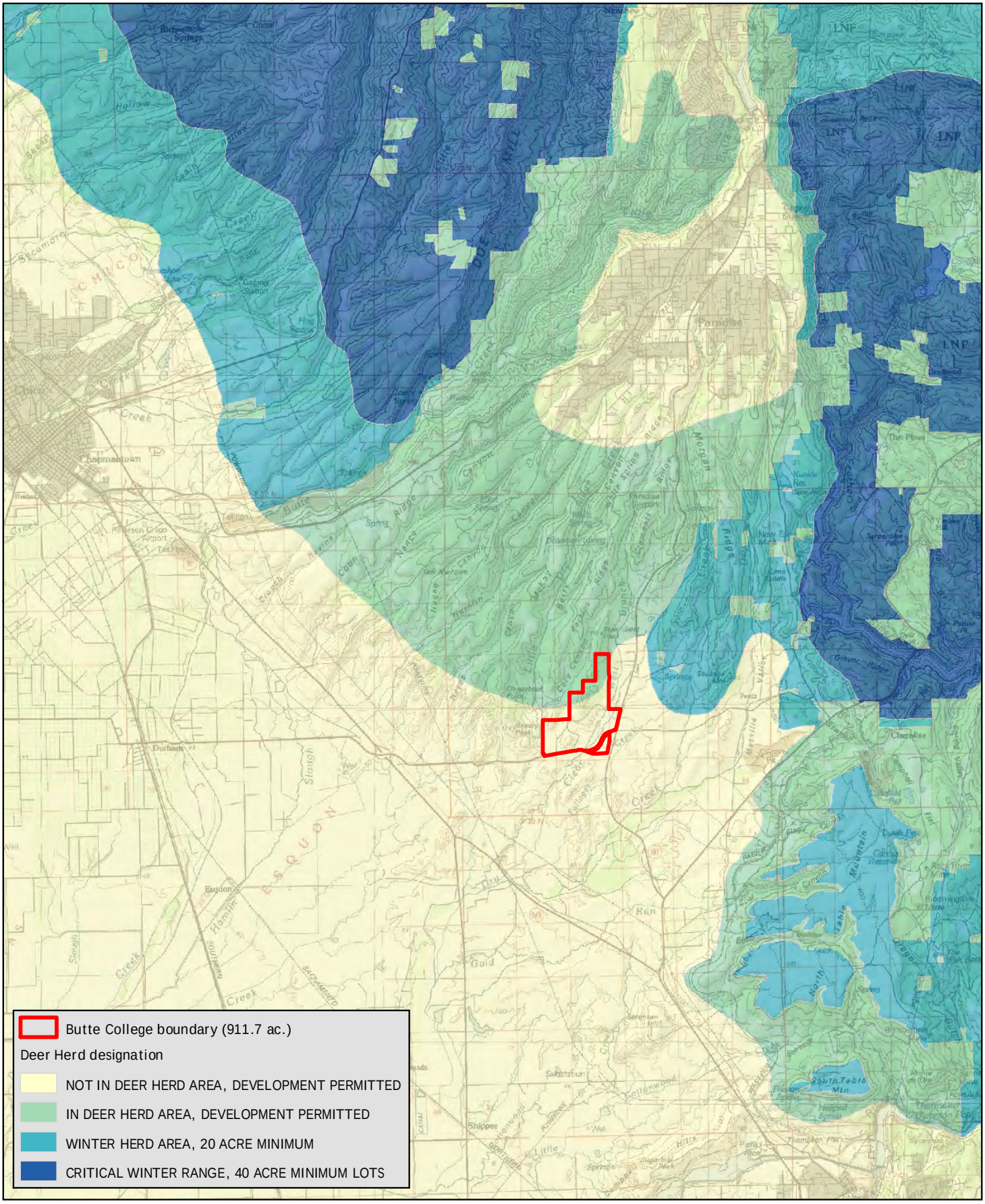
4.3.1 Sensitive Natural Communities

Three SNCs are known to occur within the Campus.

Great Valley Mixed Riparian Forest

Riparian forests are associated with alluvial fans in the floodplains and along the banks of streams and drainages throughout California's Central Valley and foothills. Soils in riparian forests are intermittently or seasonally flooded. Riparian habitats are critical for many species, even those that primarily use surrounding oak woodlands and annual grasslands. This habitat-type provides food, water, migration, dispersal corridors, and escape, nesting and thermal cover for a very high density of California's wildlife similar

Butte-Glenn Community College **Deer Herd Designation**



Deer herd data provided by Butte County
Within Sections 21, 22, 27-29 of
T21N, R3E Butte County, CA.
Hamlin Canyon USGS 7.5' Quad.
Map Date: June 16, 2011

Miles
0 2 4

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Figure 4

Table 2. Special-status species and sensitive natural communities identified as occurring or potentially occurring within the Campus.

Common Name (*Scientific Name*)	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence***
SENSITIVE NATURAL COMMUNITIES			
Great Valley Cottonwood Riparian Forest	_/SNC/_	Perennial creeks and rivers in the Central Valley.	None. The riparian habitat that occurs onsite only contains sparse cottonwood trees.
Great Valley Mixed Riparian Forest	_/SNC/_	A tall, dense, winter-deciduous, broadleafed riparian forest. The tree canopy is usually fairly well closed and moderately to densely stocked with several species including *Acer negundo*, *Juglans hindsii*, *Platanus racemosa*, *Populus fremontii*, and *Salix* spp.	**Known**. This type of riparian habitat occurs onsite along the banks of Clear Creek and West Clear Creek. (observed during the 2011 site visit)
Great Valley Willow Scrub	_/SNC/_	Pioneer riparian community found on depositional areas near the edge of intermittent and perennial creeks and rivers.	**Known**. Willow dominated riparian habitat occurs onsite. (observed during the 2011 site visit)
Northern Hardpan Vernal Pool	_/SNC/_	Seasonally flooded depressions on impermeable soils or rock.	**Known**. Vernal pools occur onsite in the annual grassland habitat. (observed during the 2011 site visit)
PLANTS			
Adobe Lily (*Fritillaria pluriflora*)	__/__/1B	Chaparral, cismontane woodland, valley and foothill grassland. (Feb-Apr)	Moderate. Potential habitat occurs in the deep clay soils in the annual grassland habitat onsite.
Ahart's Buckwheat (*Eriogonum umbellatum* var. *ahartii*)	__/__/1B	Serpentine slopes and openings in chaparral and cismontane woodlands (June-Sep)	None. Out of elevational range and no suitable serpentinite soils present onsite.
Ahart's Dwarf Rush (*Juncus leiospermus var. ahartii*)	__/__/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools / vernally mesic areas. (Mar-May)	None. Out of normal distributional range
Ahart's Paronychia *(Paronychia ahartii)*	__/__/1B	Cismontane woodland, valley and foothill grassland, and vernal pools. (Mar-Jun)	Moderate. Marginal habitat present onsite in the annual grasslands, particularly in areas with mound/swale topography.
Big-scale Balsam Root (*Balsamorhiza macrolepis* var. *macrolepis*)	__/__/1B	Cismontane woodlands and chaparral. Valley and Foothill grasslands. Sometimes serpentinite. (Mar-June)	Low. Sub-marginal habitat present onsite in the blue oak woodland.
Butte County Checkerbloom (*Sidalcea robusta*)	__/__/1B	Chaparral and cismontane woodland. (Apr-Jun)	**Known**. Species known to occur based on previous surveys conducted (observance recorded with the CNDDB).

Common Name (*Scientific Name*)	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence***
Butte County Fritillary (*Fritillaria eastwoodiae*)	__/__/3	Chaparral, cismontane woodland, openings in lower montane coniferous forests, sometimes serpentinite. (Mar-Jun)	Moderate. Marginal habitat present onsite in the blue oak woodland habitat.
Butte County Golden Clover (*Trifolium jokerstii*)	__/__/1B	Valley and foothill grassland, vernal pools. (Mar-May)	Moderate. Marginal habitat present onsite in the annual grasslands, particularly in areas with mound/swale topography.
Butte County Meadowfoam (*Limnanthes floccosa* ssp. *californica*)	FE/SE/1B	Valley and foothill grassland, vernal pools. (Mar-May)	**Known**. Species is known to occur onsite in the annual grassland based on previous surveys (not a natural population).
Hairy Orcutt Grass (*Orcuttia pilosa*)	FE/SE/1B	Deep vernal pools. (May-Sep)	Low. Sub-marginal habitat occurs onsite in the vernal pools.
Hoover's Spurge (*Chamaesyce hooveri*)	FT/__/1B	Vernal pools. (Jul-Sep/Oct)	Low. Sub-marginal habitat occurs onsite in the vernal pools.
Lewis Rose's Ragwort (*Packera eurycephala var. lewisrosei*)	__/__/1B	Chaparral, cismontane woodland, and serpentine lower montane coniferous forest. (Mar-Jul/Sep)	None. No suitable rocky or serpentinite habitat occurs onsite.
Pink Creamsacs (*Castilleja rubicundula* ssp. *rubicundula*)	__/__/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (serpentine). (Apr-Jun)	High. Suitable habitat is present in the drainages in the annual grassland and blue oak woodland habitats and a CNDDB occurrence is located adjacent to the site.
Red Bluff Dwarf Rush *(Juncus leiospermus* var. *leiospermus)*	__/__/1B	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland and vernal pools/vernally mesic habitats. (Mar-May)	Moderate. Marginal habitat present onsite in the annual grasslands, particularly in areas with mound/swale topography.
Round-leaved Filaree (*California macrophylla*)	__/__/1B	Cismontane woodland, valley and foothill grassland (clay). (Mar-May)	Moderate. Marginal habitat present onsite in the annual grassland habitat.
Shield-bracted Monkey Flower (*Mimulus glaucescens*)	__/__/4	Serpentine seeps and streambanks in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands (Feb-Aug/Sep).	**Known**. Species known to occur in drainages onsite based on previous surveys conducted.
Veiny Monardella (*Monardella douglasii* ssp. *venosa*)	__/__/1B	Cismontane woodlands. Valley and foothill grasslands in heavy clay soils. (May-July)	Low. Sub-marginal habitat present onsite in the blue oak woodland.
White-stemmed Clarkia (*Clarkia gracilis ssp. Albicaulis*)	__/__/1B	Chaparral and cismontane woodland (sometimes serpentine). (May-Jul)	Low. Sub-marginal habitat present onsite in the blue oak woodland.
Wooly Rose-mallow (*Hibiscus lasiocarpos var. occidentalis*)	__/__/2	Marshes and swamps (freshwater). (Jun-Sep)	High. Species was recorded to the CNDDB as occurring in riparian habitat onsite but has not been observed recently.

Common Name (*Scientific Name*)	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence***
INVERTEBRATES			
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT/__/__	Moderately turbid, deep, cool-water vernal pool.	Moderate. Vernal pools occur onsite.
Vernal Pool Tadpole Shrimp *(Lepidurus packardi)*	FE/__/__	Vernal pools, swales, and ephemeral freshwater habitat.	Moderate. Vernal pools occur onsite.
REPTILES AND AMPHIBIANS			
Coast Horned Lizard (*Phrynosoma coronatum*)	_/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.	Low. Areas of suitable sandy soil are limited onsite
Northwestern Pond Turtle *(Actinemys marmorata marmorata)*	_/CSC/_	Associated with permanent ponds, lakes, streams, and irrigation ditches or permanent pools along intermittent streams.	High. Suitable habitat occurs onsite in the riparian habitat.
FISH			
Central Valley Spring-Run Chinook Salmon *(Oncorhynchus tshawytscha)*	FT/ST/__	Sacramento River and tributaries.	None. No suitable or critical habitat present due to the presence of downstream fish barriers.
Central Valley Steelhead (*Oncorhynchus mykiss*)	FT/ST/__	Sacramento and San Joaquin Rivers and their tributaries.	None. No suitable or critical habitat present due to the presence of downstream fish barriers.
Hardhead (*Mylopharodon conocephalus*)	_/CSC/_	Well oxygenated undisturbed areas of larger middle and low elevation streams with clear, deep, slow water velocity pools and sand-gravel-boulder substrates.	High. Suitable habitat occurs within Clear Creek.
MAMMALS			
Pallid Bat (*Antrozous pallidus*)	_/CSC/_	Arid and semi-arid habitats; roosts in rock crevices, caves, and mine shafts.	Low. Sub-marginal habitat occurs in the urban and blue oak woodland habitats onsite.
Western Mastiff Bat (*Eumops perotis californicus*)	_/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).	Low. Sub-marginal habitat occurs in the urban and blue oak woodland habitats onsite.
BIRDS			
Burrowing Owl (*Athene cunicularia*)	_/CSC/_	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	**Known**. Species observed onsite based on previous surveys conducted.
Great Blue Heron (rookery) (*Ardea herodias*)	MBTA/__ /__	Common all year throughout California, in shallow estuaries and fresh and saline emergent wetlands. Nests in colonies in tops of secluded large snags or live trees.	None. Though the riparian and open water habitats onsite support foraging habitat, the Campus is not known to support a rookery.

Common Name (*Scientific Name*)	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence***
Loggerhead Shrike *(Lanius ludovicianus)*	_/CSC/_	Open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover	Moderate. Marginal habitat present onsite in the cropland and annual grassland.
Northern Harrier (*Circus cyaneus*)	_/CSC/_	Meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands	High. Suitable habitat present onsite in the cropland and annual grassland.
Osprey (*Pandion haliaetus*)	_/CSC/_	Wetland, open water.	Moderate. Marginal habitat present onsite near open water.
Peregrine Falcon (*Falco peregrinus anatum*)	__/SE/__	Woodland, forest and costal habitats including riparian and wetland areas. Requires bodies of water in open areas with cliffs and canyons nearby.	Low. Sub-marginal habitat present in the oak woodland and riparian habitats.
Swainson's hawk (*Buteo swainsoni*)	__/ST/__	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat including grasslands or suitable grain or alfalfa fields, or livestock pastures.	Moderate. Marginal nesting and foraging habitat present onsite in the riparian and grassland habitats.
Tri-colored Blackbird (*Agelaius tricolor*)	_/CSC/_	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands throughout the Central valley and foothills surrounding the valley.	Moderate. Marginal habitat present onsite in the open water and riparian habitats.
Yellow Warbler (*Dendroica petechia*)	_/CSC/_	Very partial to riparian woodlands of the lowlands and foothill canyons.	Moderate. Marginal habitat present onsite in the riparian habitat.
Migratory Birds and Raptors	MBTA	Nest and forage in a variety of habitats including hardwood woodlands, coniferous forests, meadows, grasslands and riparian.	**Known**. Golden eagles, red-tailed hawks, and other migratory birds including killdeer have been observed during the 2011 survey and previous surveys of the site.

CODE DESIGNATIONS

FE = Federally-listed Endangered
FT = Federally-listed Threatened
FC = Federal Candidate Species
MBTA = protected by the federal Migratory Bird Treaty Act

SE = State-listed Endangered
ST = State-listed Threatened

CSC = CDFG Species of Special Concern
FP = CDFG Fully Protected Species
SNC= CDFG Sensitive Natural Community

CNPS 1B = Rare or Endangered in California or elsewhere
CNPS 2 = rare or Endangered in California, more common elsewhere
CNPS 3 = More information is needed
CNPS 4 = Plants with limited distribution

***Potential for occurrence:** for plants it is considered the potential to occur during the survey period; for birds and bats it is considered the potential to breed, forage, roost, over-winter, or stop-over in the BSA during migration. Any bird or bat species could fly over the BSA, but this is not considered a potential for occurrence. The categories for the potential for occurrence include:

None: The species or natural community is known not to occur, and has no potential to occur in the BSA based on sufficient surveys, the lack of suitable habitat, and/or the BSA is well outside of the known distribution of the species.

Low: Potential habitat in the BSA is sub-marginal and the species is not known to occur in the vicinity of the BSA. Protocol-level surveys are not recommended.

Moderate: Suitable habitat is present in the BSA and the species is known to occur in the vicinity of the BSA.

High: Habitat in the BSA is highly suitable for the species and there are reliable records close to the BSA, but the species was not observed.

Known: Species was detected in the BSA or a recent reliable record exists for the BSA.

to those found in valley-foothill riparian habitat types. The tree species in this particular type of riparian forest is co-dominated by any combination of Fremont's cottonwood, black willow, California sycamore, and valley oak. Subcanopy tree species include Arroyo willow, boxelder, and Oregon ash. Typical understory plants include wild grape, wild rose, California blackberry, blue elderberry, poison oak, and a variety of willow species. The herbaceous layer consists of a variety of sedges, rushes, and grasses including pacific rush, Santa Barbara sedge, slender rush, Dallisgrass, barnyard grass, and iris-leaved rush. Great Valley mixed riparian forest occurs as the type of riparian habitat surrounding Clear Creek and the West Branch of Clear Creek within the Campus.

Great Valley Willow Scrub

Willow scrub riparian habitats are associated with alluvial fans in the floodplains and along the banks of streams and drainages throughout California's Central Valley and foothills, usually below 1,000 feet above sea level. Soils in willow scrub habitats are intermittently or seasonally flooded and are typically dominated by sandy and/or cobbly soils. This is a pioneer community, which colonizes the depositional areas of streams and drainages and is characterized by shrubby vegetation. The dominant plant species in this habitat includes various willows with sparse to absent understory vegetation. The willow stands may or may not be dominated by a single species. The understory, if present, typically consists of a variety of sedges, rushes, and grasses including Johnsongrass, Bermuda grass, nutsedge, and slender rush. This habitat-type provides food, water, migration, dispersal corridors, and escape, nesting and thermal cover for a very high density of California's wildlife including ducks, vireos, shorebirds, warblers, sparrows, red-winged blackbird, willow flycatcher, chipmunks, squirrels, western fence lizard, and gopher snake. Great Valley willow scrub occurs as the type of riparian habitat located within the small drainage south of the running track on the Campus and is also present within the pond located south of Durham-Pentz Road in the southeast corner of the Campus boundary.

Northern Hardpan Vernal Pools

Vernal pools form where there is a soil layer below or at the surface that is impermeable or nearly impermeable referred to as a hardpan. Precipitation and surface runoff become trapped or "perched" above this layer. Hardpans are formed by leaching, redeposition, and cementing of silica materials from high in the soil horizon to a lower ("B") horizon. In addition, vernal pools typically occur in landscapes that, at a broad scale, are shallowly sloping or nearly level, but on a finer scale may be quite bumpy or uneven. Since appropriate combinations of climate, soil, and topography often occur over continuous areas rather than in isolated spots, vernal pools in the Central Valley tend to occur in clusters called "complexes." Within these complexes, pools may be fed or connected by low drainage pathways called "swales." Swales are often themselves seasonal wetlands that remain inundated with water for much of the wet season, but not long enough to support strong vernal pool characteristics. Vernal pools may remain inundated until spring or early summer, sometimes filling and emptying numerous times during the wet season. Vernal pools gradually dry down during the spring, often forming a unique

"bathtub ring" of flowers from endemic vernal pool plants blooming successively at the pool margins.

Northern Hardpan Vernal Pools are considered a specific type of vernal pool complex which occur on old alluvial fans along the margins of California's Central Valley with acidic, iron- silica cemented soils forming the hardpan (Sawyer and Keeler-Wolf, 1995). Plant species commonly found in northern hardpan vernal pools and were found onsite include *Navarettia leucocephala, Lasthenia fremontii, Juncus bufonius, Eryngium castrense, Pogogyne ziziphoroides, Plagiobothrys stipitatus, Danthonia californica, Deschampsia danthonioides, Hordeum marinum (geniculatum*), *Psilocarphus brevissimus* and *Downingia* spp. Northern hardpan vernal pools occur in the portions of the annual grassland within the Campus that support mima mound/swale topography.

4.3.2 Plants

Of the 19 special-status plant species listed in **Table 2**, 6 have a moderate potential to occur, 1 has a high potential to occur and 4 are known or have been know to occur onsite in the past. These species include adobe lily, Ahart's paronychia, Butte County fritillary, Butte County golden clover, Red Bluff dwarf rush, round-leaved filaree, pink creamsacs, Butte County checkerbloom, Butte County meadowfoam, shield-bracted monkey-flower, and the wooly rose mallow, respectively. The remaining 8 species were determine to have no or low potential to occur onsite and are not described further below. These species were determined to not have a significant potential to occur within the Campus due to the Campus being outside the elevational range, the distributional range, or the Campus not supporting suitable habitat for the species.

Adobe Lily

The adobe-lily is a California endemic, bulbiferous herb and a CNPS list 1B plant species. It is known only from populations found in Butte, Colusa, Glenn, Lake, Napa, Solano, Tehama, and Yolo Counties. The adobe-lily occurs in chaparral, cismontane woodland and valley and foothill grassland habitats, usually in adobe soils. It can occur at elevations ranging from 60 to 705 meters above sea level and can be found blooming from February to April with showy pink flowers. The deep clay soils in annual grassland located in the western portion of the Campus property contains suitable habitat for the adobe lily.

Ahart's Paronychia

Ahart's paronychia is a California endemic and a CNPS list 1B plant species. It has only been found in Butte, Shasta, and Tehama Counties at elevations ranging between 30 and 510 meters above sea level. This small, low-growing, annual herb occurs in cismontane woodland, valley and foothill grassland and vernal pool habitats where there is little competition from other plant species. Its blooming period lasts from March to June and produces inconspicuous, white, papery flowers. Ahart's paronychia has potential to occur within mesic areas within the annual grassland habitats onsite.

Butte County Fritillary

Butte County fritillary is a California endemic species known to occur in chaparral,

cismontane woodland, and openings in lower montane coniferous forests in Northern California. It is a CNPS list 3 plant that has been documented to occur in Butte, Shasta, Tehama, Yuba, Placer, El Dorado, and Nevada Counties. Butte County fritillary is a perennial herb that inhabits dry benches and slopes between 500 to 1500 meters above sea level, and can be observed blooming with nodding, greenish-white to reddish flowers between March and June. Butte County fritillary has potential to occur within the blue oak woodland habitat within the Campus.

Butte County Golden Clover

Butte County golden clover is a California endemic annual herb CNPS listed as 1B. The golden clover has been found only in Butte County, California and is known from fewer than 10 occurrences. Its habitat includes mesic valley and foothill grassland and vernal pools at elevations ranging from 50 to 385 meters above sea level. It can be observed blooming from March to May, producing yellow flowering heads. Butte County golden clover has potential to occur within vernal and some seasonal wetlands present within the annual grassland habitat onsite.

Red Bluff Dwarf Rush

Red Bluff dwarf rush is a CNPS list 1B and a Northern California endemic plant species. This inconspicuous annual herb has only been found in Butte, Placer, Shasta, and Tehama Counties. It occurs in meadows, seeps, vernal pools, and other vernally mesic areas in chaparral, cismontane woodland and valley and foothill grassland habitats. The dwarf rush can be found at elevations ranging between 35 to 1020 meters above sea level and blooms from March to May. Red Bluff dwarf rush has potential to occur within vernal and seasonal swales, shallow vernal pools, and other mesic areas within the annual grassland habitats onsite.

Round-Leaved Filaree

The round-leaved filaree is a California endemic and a CNPS list 1B plant species which has recently been re-named due to new molecular data to form a new mono typic genus. The filaree occurs in cismontane woodlands and valley and foothill grasslands with clay soils at elevations ranging from 15 to 1200 meters above sea level. It historically occurs throughout California into Baja California to the south and Oregon to the north, however, most collections and occurrences are historical and more information is needed on the filaree's current status and distribution. The round-leaved filaree has potential to occur within heavy clay soils present within the annual grassland and blue oak woodland habitats on the Campus.

Pink Creamsacs

The pink creamsac is a California endemic, CNPS list 1B plant species only found in Butte, Colusa, Glenn, Lake, Napa, Santa Clara, and Shasta Counties. It occurs in chaparral openings, cismontane woodland, meadows and seeps, and serpentinite valley and foothill grassland habitats at elevations ranging from 20 to 900 meters above sea level. Pink creamsacs bloom from April to June and produce many small pink to white colored flowers. Pink creamsacs are know from a historic population in a drainage located just northwest of the Campus, therefore, drainages and seeps within the annual

grassland and blue oak woodland habitats onsite have a high potential to support pink creamsacs.

Butte County Checkerbloom

The Butte County checkerbloom is a California endemic plant species and a CNPS list 1B plant. This tall rhizomatous herb is known only from populations in Butte County. It occurs in chaparral and cismontane woodland habitats at elevations ranging from 90 to 1600 meters above sea level. It can be observed flowering from April to June producing multiple delicate, five-petaled, light pink flowers on one terminal raceme. Butte County checkerbloom is known to occur within portions of the blue oak woodland habitat present within the Campus.

Butte County Meadowfoam

Butte County meadowfoam is a state and federal listed endangered species. This species is protected under the federal Endangered Species Act (ESA) and critical habitat has been designated by the USFWS. The winter annual herb belonging to the false mermaid family (Limnanthacea) occurs in vernal swales, along the edges of vernal pools and ephemeral streams, and less frequently around the edges of isolated vernal pools. It has also been observed occurring on uplands immediately adjacent to vernal swales and pools and within abandoned irrigation canals and roadside drainage ditches. Butte County meadowfoam has been identified exclusively in a narrow 25-mile strip along the eastern edge of the Sacramento Valley from central Butte County to the northern portion of the City of Chico. Butte County meadowfoam was experimentally planted within two vernal pool complexes in two separate portions of the Campus more than 10 years ago. One area was in the western portion of the Campus, west of the Fire Training Center, and one was in the eastern portion of the Campus in the northwest corner of the Clark Road/Durham-Pentz Hwy intersection. Since that time, only the planted population in the eastern portion of the Campus appears to have persisted; however, no current studies of these populations have been conducted to see if the population size has diminished, stayed the same, or increased. In addition, these non-natural populations have not been recorded by the CNDDB.

Shield-Bracted Monkey-Flower

Shield-bracted monkey-flower is a California endemic and is listed by the CNPS as a List 4 plant species. The shield-bracted monkey-flower has a limited distribution but is not considered very endangered in California. It is know from populations in Butte, Colusa, Lake, Nevada, Shasta, and Tehama Counties and occurs at elevations ranging from 60 to 1240 meters. The shield-bracted monkey-flower is associated with serpentinite seeps and stream beds/banks in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland habitats. It can be observed blooming from February to August and sometimes into September, producing bright, showy yellow flowers. It can be distinguished from the common seep monkey-flower by its leaf-like bracts that are fused, forming a ‘shield.’ The shield-bracted monkey-flower is known to occur in seeps and drainages within the annual grassland and blue oak woodland habitats onsite.

Wooly Rose Mallow

The rose mallow is a rhizomatous emergent herb and a CNPS list 2 plant species. It grows in freshwater marsh and swamp habitats at elevations ranging from 0 to 120 meters above sea level. It is known from occurrences in Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo Counties as well as in other states including Nebraska. Most of the occurrences in California are small and are being threatened by development, agriculture, weed control measures and the channelization of the Sacramento River and it's tributaries. The rose mallow can be observed blooming from June to September, producing a large showy white flower with a dark red center. Wooly rose mallow has been recorded by the CNDDB as occurring onsite within the riparian habitats along Clear Creek within the Campus. However, no recent surveys have been conducted to verify that these occurrences still persist onsite.

4.3.3 Invertebrates

Vernal pool fairy shrimp and vernal pool tadpole shrimp were determined to have a moderate potential to occur within the Campus. No protocol-level surveys for vernal pool invertebrates have been conducted within the vernal complexes present within the Campus.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp has known populations that extend from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County, one in the mountain grasslands of northern Santa Barbara County, one on the Santa Rosa Plateau in Riverside County, and one near Rancho California in Riverside County. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Although the species has been collected from large vernal pools including one exceeding 25 acres, it tends to occur in smaller pools. It is most frequently found in pools measuring less than 0.05 acre. These are most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. Vernal pool fairy shrimp have been collected from early December to early May. Vernal pool fairy shrimp have potential to occur within vernal pools or other seasonal wetlands present within the annual grassland habitats onsite.

Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp is a small crustacean in the Triopsidae family. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates. They inhabit vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie. The vernal pool tadpole shrimp is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the

City of Fremont, Alameda County. Vernal pool tadpole shrimp have potential to occur within deep vernal pools present within the annual grassland habitats within the Campus.

4.3.4 Reptiles and Amphibians

Of the 2 reptile/amphibian species listed in **Table 2**, only one, the northwestern pond turtle has a moderate potential to occur within the Campus. The other species, the coast horned lizard was determined to have a low potential to occur within the Campus due to the lack of suitably sandy soils onsite.

Northwestern Pond Turtle

The northwestern pond turtle can be found throughout California and is the only abundant native turtle in California. They are associated with permanent or nearly permanent water in a wide variety of habitats at elevations ranging from near sea level to 1430 meters. They require basking sites including partially submerged logs, rocks, mats of floating vegetation, or open mud banks. The northwestern pond turtle hibernates in colder areas underwater on muddy bottoms. Nesting sites are typically constructed along the banks of permanent water in soils at least 10 cm deep and must have high internal humidity for eggs to develop and hatch. Northwestern pond turtles have potential to occur within Clear Creek and some of the ponds present within the Campus.

4.3.5 Fish

Anadromous fish were determined to not have potential to occur within Clear Creek within the Campus due to the fact that Clear Creek is a tertiary tributary and is not a direct tributary of any streams know to support anadromous fish (Pers. Comm. Tracy McRenolds CDFG). Clear Creek flows into multiple streams before flowing into the Western and Cherokee Canals. These canals make it difficult for anadromous fish to migrate up-gradient. In addition, water temperatures in Clear Creek are too warm to support anadromous fish. Clear Creek does, however, support suitable habitat for hardhead.

Hardhead

Hardhead are a California species of special concern. They are bottom feeders that forage for benthic invertebrates, aquatic plants in quiet water, and occasionally plankton. The small fish feed on mayfly larvae, caddis fly larvae, and small snails while the larger fish eat aquatic plants, including filamentous algae, and crayfish and large invertebrates. Hardhead prefer clear, deep pools with sand, gravel, or boulder substrates and slow water velocities. In rivers, the adult hardhead mostly occur more toward the bottom of the pools, not near the surface.

4.3.6 Mammals

Two bat species were determined to have a low potential to occur within the Campus including the pallid bat and the western mastiff bat. These species have a low potential to

occur within the Campus due to the lack of suitable cliff faces, abandoned buildings, or arid habitats which these species prefer as roost sites.

4.3.7 Birds

Of the 8 special-status bird species listed in **Table 2**, 4 were determined to have a moderate potential to occur, 1 has a high potential to occur, and one has been known to occur within the Campus. These species include the loggerheaded shrike, osprey, tri-colored blackbird, yellow warbler, northern harrier, and western burrowing owl, respectively. In addition multiple migratory bird and raptor species protected by the Migratory Bird Treaty Act (MBTA) have been observed within the Campus. The other 2 species listed in **Table 2**, the great blue heron rookery and peregrine falcon, were determined to have no to low potential to occur within the Campus since no heron rookeries are known to occur onsite and there is no suitable cliff-face habitat for peregrine falcons to nest within the Campus.

Loggerheaded Shrike

Loggerheaded shrikes are common residence and winter visitors in lowlands and foothills throughout California. They can be found in open habitats with scattered shrubs, trees, posts, fences, utility lines or other perches. Typically they occur in open canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. They rarely occur in heavily urbanized areas but are often found in open croplands. Loggerheaded shrikes mainly eat large insects, but also take small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. They nest in shrubs or trees at heights ranging from 0.4 to 15 meters above the ground. Adults lay eggs from March to May with male and females tending their young into July or August. Loggerheaded shrikes have the potential to nest within trees and shrubs throughout the Campus.

Osprey

The osprey (*Pandion haliaetus*) is a migratory raptor species that feeds almost exclusively on live fish. Foraging in clear, open waters, ospreys dive feet first to catch their prey. This species is considered a Species of Special Concern by the CDFG, despite recent population increases following the elimination of pesticide use such as DDT, which caused population decline during the 1950s and up to 1970. Osprey populations appear to be increasing since the 1970s. Nests are constructed from sticks to form platforms on top of dead-topped trees, cliffs, man-made structures (i.e. cell phone and utility towers), and occasionally on the ground. Ospreys arrive on nesting grounds mid-March to early April and lay between 1-4 eggs. Southern migration occurs in October, with osprey flying along the coast and western slopes of Sierra Nevada in October to Central and South America (CDFG 2005). Osprey have potential to nest within tall trees in the riparian corridor along Clear Creek onsite.

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. 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. 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. 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 Swainson's hawks have potential to nest in the riparian areas or in lone trees within the Campus that are adjacent to annual grasslands that are suitable for foraging habitat. A CNDDB search determined that 6 historic Swainson's hawk nests have been recorded within 10 miles of the Campus, with the closest occurrence located 6 miles away (**Figure 5**). None of these occurrences have been active within the past 10 years based on the description of these occurrences in the most recent version of Rarefind.

Tri-colored Blackbird

The tri-colored blackbird occurs throughout California's Central Valley and in coastal habitats from Sonoma County south. The tri-colored blackbird requires dense fresh emergent wetlands to nest and breed, and forages in grassland and cropland habitats. Its nests are made from mud and plant materials and they form colonies of 50 pairs to as large as 30,000 pairs. Tri-colored blackbirds require open, accessible water, protective nesting substrates (flooded, thorny, or spiny vegetation), and suitable foraging space within a few miles of the nesting colony. In response to loss of fresh emergent wetland habitat, tri-colored blackbirds have been increasingly observed to utilize Himalayan blackberry (*Rubus discolor*), elderberry, poison oak (*Toxicodendron diversilobum*), and grain fields for colony establishment. Tri-colored blackbirds have potential to nest within fresh emergent wetlands present within the riparian and open water habitats onsite.

Yellow Warbler

The yellow warbler is a summer resident found throughout California in riparian woodlands from costal and desert lowlands up to 2500 meters in the Sierra Nevada Mountain Range. They can also be found in montane chaparral, open ponderosa pine forest and mixed conifer habitats with substantial amounts of brush. They mainly eat insects and spiders and typically glean and hover in the upper canopy of deciduous trees and shrubs. The yellow warbler requires riparian deciduous habitats and montane habitats with tall trees for singing and foraging and a dense under story of shrubs for nesting. They are active diurnally and migrants typically arrive in California in April and

Butte-Glenn Community College **Swainson's Hawk Occurrences**

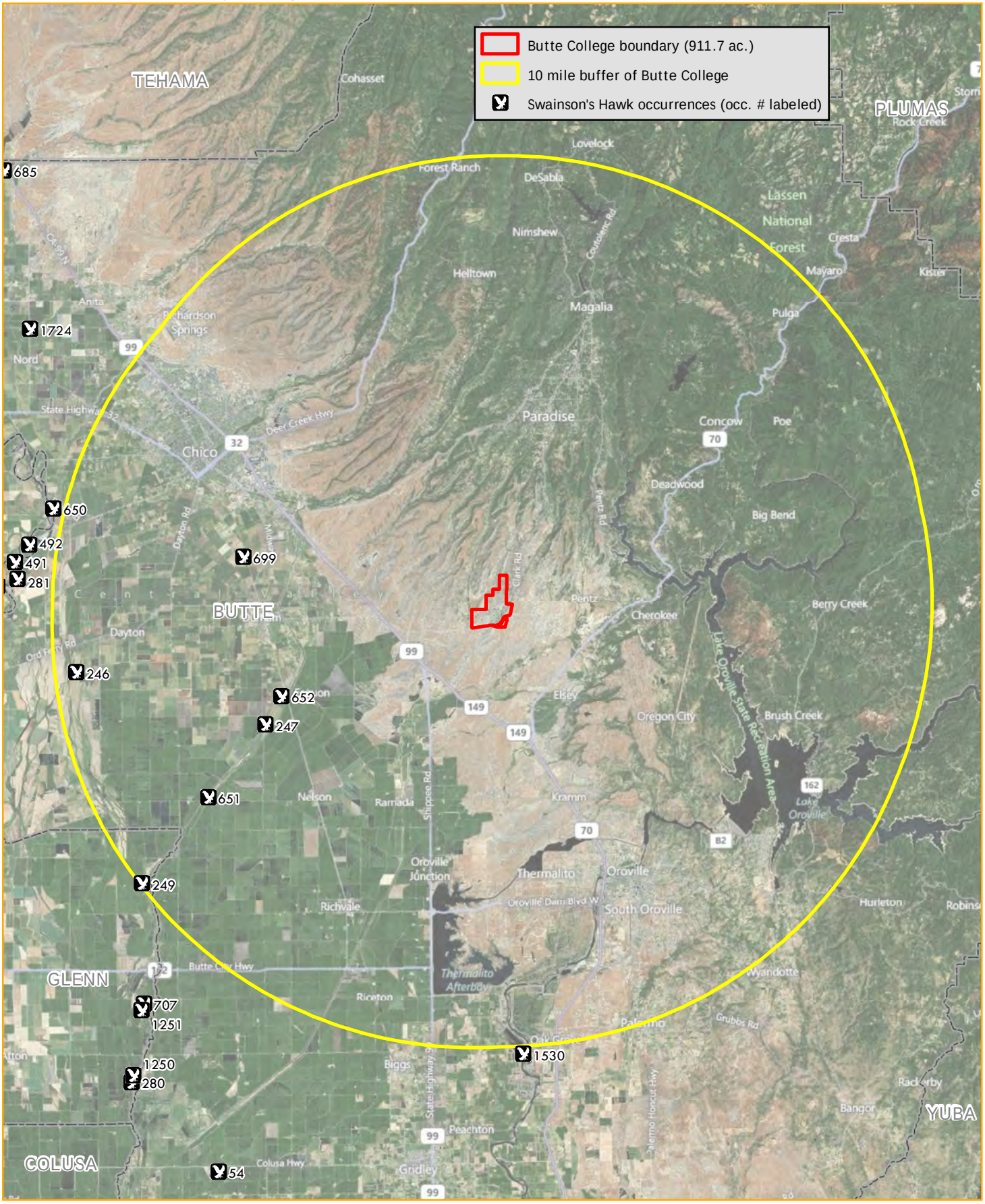

Figure 5

remain until October. A small number of yellow warblers are known to over-winter in Southern California lowlands. Breeding occurs from mid-April into early August. The female will incubate the eggs for 11 days and once hatched, both parents will tend to the young until fledging at 9-12 days. In recent years, the numbers of breeding pairs have declined drastically in many lowland areas where they were formerly common. The yellow warbler has potential to nest within the riparian habitats present within the Campus.

Northern Harrier

Northern harriers are a raptor commonly found near wetlands and open grasslands perched on or flying close to the ground. The northern harrier is one of the few birds of prey that is frequently polygynous when ecological conditions permit. Nests are constructed on the ground, typically in dense, low vegetation that provides a visual barrier and cover. In drier habitats, the nest consists of a loose, thin layer of sticks. In wetter situations, nests are larger, more substantial structures. Nests are built by the female and typically consist of grass, reeds, and small sticks. Breeding activity begins in April, concluding in September, with a peak in activity from June to July. A single brood of four to six eggs are incubated by the female. Incubation begins with the last egg and lasts about 29–39 days. The female broods the young for about 4 weeks while the male provisions the female and young with prey items. Young begin to leave the nest, moving around into the surrounding vegetation, at about 2 weeks of age. The amount of time spent at the nest steadily decreases after this point until fledging. First flight generally occurs at 29–34 days of age. Young remain in the vicinity of the nest until dispersal. Northern harriers have potential to nest within the annual grassland and fallow cropland habitats present onsite.

Western Burrowing Owl

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. Western burrowing owls have potential to nest and forage within the annual grassland and fallow cropland habitats onsite. Sightings of western burrowing owls have been made in the southeastern portion of the Campus by local residents of the area but no protocol-level surveys for nests have been conducted.

Migratory Birds 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 project site currently provides suitable nesting and/or foraging habitat for several of these species. Direct take of active nests, eggs, or birds is prohibited by CDFG and measures must be taken to minimize disturbance. Therefore, a qualified biologist should conduct a pre-construction migratory

bird/raptor survey during April-May, or no more than 30 days prior to construction activities, to determine the presence/absence of nesting birds in the BSA. Should nesting migratory birds or raptors be observed, appropriate spatial and temporal buffers will be required by MBTA and/or CDFG. A few of the MBTA protected species observed within the Campus during past biological surveys include red-tailed hawks, golden eagles, killdeer, meadowlarks, and scrub jays. All of these species have potential to nest within the annual grassland, cropland, riparian, and blue oak woodland habitats present within the Campus.

5. Conclusions and Recommendations

As this biological resources assessment is Campus wide, site specific surveys and assessments using this document as a reference should be conducted prior to the start of any construction related activities. If any special-status species are determined to occur within a proposed construction area, mitigation per the USFWS and/or the CDFG may be required.

Mitigation requirements for plant and wildlife species are species specific and are often commensurate with their degree of rarity. Any impacts to species that are federally or state listed as threatened or endangered will require consultation with the applicable agency. Species with specific designated mitigation requirements are discussed below. Mitigation for impacts to species that do not currently have designated mitigation requirements will be determined on a case-by-case basis based on consultation with CDFG and any other appropriate agencies.

Butte County Meadowfoam

Construction occurring near Butte County meadowfoam requires consultation with the USFWS. USFWS establishes avoidance/protection requirements on a case-by-case basis. Where impacts are unavoidable, mitigation guidelines for Butte County meadowfoam populations will be developed through consultation with USFWS. Following consultation, USFWS may declare the habitat eligible for mitigation according to the 1996 USFWS Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits. According to the programmatic consultation, affected habitat cannot exceed one (1) acre. Included in habitat, both directly and indirectly affected include:

- all habitat supported or destroyed by upland areas and swales
- all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution caused by the project

Both direct and indirect impacts to Butte County meadowfoam (BCM) associated with construction activities will require mitigation. All impacts within the boundaries of a project area, including a USFWS-required 250 foot buffer from the project perimeter, are considered direct. Direct impacts are currently required to be mitigated at a 19:1 ratio and indirect impacts at a 5:1 ratio. Mitigation is met by purchasing credits at a USFWS-approved mitigation bank.

Vernal Pool Invertebrates

Protocol-level surveys to determine absence or presence of vernal pool invertebrates can be conducted on-site where vernal features are proposed to be impacted. In the absence of protocol level surveys, the USFWS will assume the presence of these vernal pool species. Impacts to vernal pool invertebrates can include direct impacts caused by the filling or destruction of a vernal pool, or indirect impacts caused by altering on-site hydrology. If impacts, direct or indirect, are expected to occur within 250 feet of a vernal pool, consultation with the USFWS will be required. Appropriate mitigation includes avoidance, or the creation and preservation of "in-kind" vernal pool habitat onsite, or offsite within a certified mitigation bank approved by the USFWS.

Swainson's Hawk

Though none of the 6 Swainson's hawk nests located within 10 miles of the Campus have been recorded as active within the past 10 years, these old nests could be re-used by Swainson's hawks in the future or new nests could be constructed in close proximity to the Campus. Therefore, CDFG-recommended protocol-level surveys should be conducted by a qualified biologist no more than 30 days prior to any construction activities that occur during the breeding season (March-August), per the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee, May 31, 2000. The area to be surveyed should include a ¼ mile radius surrounding the project area 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:

1. 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 with in ¼ mile (buffer zone) of an active nest between March 1 and September 15.
2. 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).
3. Loss of foraging habitat must be calculated and mitigated per the abovementioned Staff Report

Western Burrowing Owl

Preconstruction surveys of suitable habitat should be conducted based on the CDFG survey protocol guidelines within 30 days prior to construction to ensure no burrowing owls have established territories since the initial surveys. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site

should be resurveyed. If burrowing owls are detected in the project area, mitigation measures to minimize and offset the potential impacts should be included as enforceable measures during the CEQA process. Mitigation actions should be carried out from September 1 to January 31 which is prior to the nesting season. Specific mitigation measures consistent with the CDFG memorandum *Staff Report on Burrowing Owl Mitigation* (CDFG 1995) are as follows:

1. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the Department verifies through noninvasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

2. To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approx. 300 ft.} foraging radius around the burrow) per pair or unpaired resident bird, should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the Department. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances. The California Burrowing Owl Consortium (CBOC) has also developed mitigation guidelines (CBOC 1993) that can be incorporated by CEQA lead agencies and that are consistent with the CDFG staff report.

3. When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

4. If owls must be moved away from the disturbance area, passive relocation techniques should be used rather than trapping. At least one or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

5. The project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the Department.

<u>Other Special-Status and Migratory Bird and Raptor Species</u>

Vegetation removal or ground disturbance in areas where nests of special-status bird or raptor species 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:

1. Conduct a survey for all birds protected by the MBTA and map all nests located within 500 feet of construction areas;

2. 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.

6. References

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Personal Communication

Tracy McReynolds, Fisheries Biologist. CDFG, Chico Office. June 22, 2011, 9:00am. Phone conversation with Elena Gregg regarding anadromous fish issues in Clear Creek and the potential for hardhead to be present. (530) 895-5111.

Mary Bailey, Botanist. July 1, 2011. 2:00pm. Meeting with Elena Gregg regarding past botanical surveys and habitat assessments conducted by Ms. Bailey.

Attachment A

Past Survey Summary Table

Attachment A - Past Biological surveys conducted on the Butte College Campus					
Date	**Type of survey**	**Surveyor**	**Size of Survey Area**	**Species determined to have potential to occur**	**Species/SNC Observed**
Mar-09	Reconnaissance level BRA	Quad Knopf	16 ac	Western pond turtle, great blue heron, yellow warbler, peregrine falcon, loggerheaded shrike, osprey, palid bat, western mastiff bat, silver-haired bat, round-leaved filaree, pink creamsacs, adobe lily, Ahart's dwarf rush, Red Bluff dwarf rush, Butte County meadowfoam, veiny monardella, Ahart's paronychia. Butte County checkerbloom, Butte County golden clover	Red-tailed Hawk
Jul-06	Rare plant survey letter report	Quad Knopf	21 ac	Ahart's dwarf rush, Butte County checkerbloom, Butte County golden clover, Butte County meadowfoam, hairy orcutt grass, Hoover's spurge, pink creamsacs, Red Bluff dwarf rush, round-leaved filaree	Blue Oak Woodland and Northern Hardpan Vernal Pools
Mar-91	Rare plant record search	Mary Bailey	entire campus		Species with past occurences include wooly rose mallow, shield-bracted monkeyflower, Butte County checkerbloom, adobe lily
Jun-11	Personal Communication	Mary Bailey	entire campus		Golden eagle, western burrowing owl, Butte county checkerbloom