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## **E-7: Line 406/407 Avian and Mammalian Habitat Assessment**

**SPECIAL-STATUS AVIAN AND MAMMALIAN SPECIES HABITAT ASSESSMENT**  
for the  
**PACIFIC GAS and ELECTRIC COMPANY**  
**NATURAL GAS TRANSMISSION LINE 406/407 PROJECT**  
**PLACER, SACRAMENTO, SUTTER, and YOLO COUNTIES**

Prepared by:  
Pacific Gas and Electric Company  
Environmental Field Services  
350 Salem Street  
Chico, CA 95928

Prepared for:  
Pacific Gas and Electric Company  
Technical and Land Services  
2730 Gateway Oaks Dr  
Sacramento CA, 95833

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Contacts:

Jesus Viscarra  
Wildlife Biologist  
(530) 896-4263

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# CONTENTS

Section	Page
<b>1 INTRODUCTION</b> .....	<b>1</b>
1.1 Background .....	1
1.2 Assessment Objectives .....	1
<b>2 PROJECT DESCRIPTION</b> .....	<b>1</b>
2.1 Project Area .....	1
2.2 Pipeline Segments and Regulator Stations .....	1
2.3 Construction and Right-of-Way .....	2
<b>3 STUDY METHODS</b> .....	<b>2</b>
3.1 Species Evaluated .....	2
3.2 Project Surveys .....	3
<b>4 RESULTS</b> .....	<b>4</b>
4.1 Avian Species .....	4
4.2 Mammalian Species .....	24
<b>5 PROJECT CONSERVATION MEASURES</b> .....	<b>27</b>
<b>6 CONCLUSION AND DETERMINATION</b> .....	<b>28</b>
6.1 Determination Statement .....	28
<b>7 LITERATURE CITED</b> .....	<b>29</b>

## Figures

- 1 L406 and L407 Pipeline Project Overview Map

## Tables

- 1 Special-Status Avian and Mammalian Species Reviewed
- 2 Wildlife Species Observed in the Project Area During Reconnaissance Surveys



## **1 INTRODUCTION**

### **1.1 Background**

The Pacific Gas and Electric Company (PG&E) is planning to construct the natural gas Line 406 and Line 407 Project (project) to address the need for additional natural gas supply to serve on-going residential and commercial load growth in the greater Sacramento River Valley region within Placer, Sacramento, and Sutter Counties. The project includes approximately 42 miles of 30-inch transmission pipeline, approximately 2.5 miles of 10-inch distribution feeder pipeline (DFM), and various pressure limiting and regulation stations to serve new development in the region. The new mainline alignment will stretch from the intersection of Fiddymont and Base Line Roads in Placer County west to existing transmission lines L400/401 in Yolo County; the Metro Air Park DFM will proceed south along Powerline Road to W. Elverta Road from the mainline alignment (Figure 1).

### **1.2 Assessment Objectives**

This special-status avian and mammalian species habitat assessment was prepared as a supplement to the project Biological Assessment Report and the Preliminary Environmental Analysis documents. The objectives of this habitat assessment are to summarize the results of field reconnaissance and review of existing resource information; assess the potential for special-status avian and mammalian species to occur in the project area; assess the potential for project activities to affect special-status avian and mammalian species; and to propose measures that minimize or avoid potential adverse effects of the project.

## **2 PROJECT DESCRIPTION**

### **2.1 Project Area**

The project area extends from west of the City of Roseville, Placer County to western Yolo County (Lines 400 and 401). The proposed alignment follows a series of county roads and crosses several expanses of open croplands, grasslands and riparian belts associated with various water crossings. The alignment is generally flat with the exception of rolling grasslands in the Dunnigan Hills area. Elevation along the alignment ranges from approximately 15 to 255 feet above mean sea level. Primary land use along the alignment is agricultural and current residential development is considered rural and sparse in nature.

Six natural vegetation communities were identified along the project alignment. These communities are non-native annual grasslands (most prevalent community type), valley freshwater marsh, seasonal wetland, vernal pool, riparian forest/scrub, and oak woodland habitat types. The majority of the proposed alignment passes through agricultural lands supporting various dry-land crop and rice production.

### **2.2 Pipeline Segments and Regulator Stations**

The new gas transmission pipeline will consist of three segments:



- 30-inch Line 407 East will extend west from existing Line 123 on the northwest corner of Fiddymont Road and Baseline Road in Placer County to the corner of Riego Road and Power Line Road in Sutter County (12-miles).
- 10-inch Metro Air Park Distribution Feeder Main (DFM) will extend south from Line 407 East to the corner of Power Line Road and West Elverta Road in northern Sacramento County (2.5-miles).
- 30-inch Line 407 West will extend from the corner of Riego Road and Power Line Road in Sutter County to L172A, just east of Interstate 5 in Yolo County (13.5-miles).
- 30-inch Line 406 will extend from L172A, just east of Interstate 5 in Yolo County to L400/401 in western Yolo County (14-miles).

PG&E will also construct various pressure regulation stations in fenced, above-ground yards. Pressure Limiting Stations are required to assure the proper pressures are maintained in the transmission system. Regulation Stations are required to reduce the pressure of the gas before delivering it to the distribution pipeline system. PG&E will construct the Pressure Limiting Station and Regulation Stations along the alignment at major street intersections.

### **2.3 Construction and Right-of-Way**

Construction of the pipeline will generally require a 100-foot wide construction right-of-way (ROW). The construction ROW may be narrowed in places to avoid environmental impacts; however, additional workspace may be needed at select locations for stream crossings, road crossings, and in other areas where special construction methods are required. A 50-foot permanent easement is required for operation and maintenance of the pipeline.

## **3 STUDY METHODS**

### **3.1 Species Evaluated**

Prior to conducting reconnaissance-level surveys, target lists of special-status avian and mammalian species that have been recorded in or that have potential to occur in the project area were prepared (Table 1). Special-status species lists from the U.S. Fish and Wildlife Service (USFWS), California Natural Diversity Data Base (CNDDDB), and California Department of Fish and Game (CDFG) Special Animals List, were referenced to compile a master list of species from these two taxa. Species lists were compiled for the following U.S. Geological Survey (USGS) 7.5-minute quadrangles:

- Esparto
- Madison
- Woodland



- Knights Landing
- Verona
- Grays Bend
- Taylor Monument
- Rio Linda
- Citrus Heights
- Pleasant Grove
- Roseville

Sources of information used to compile species lists included the on-line USFWS list of federally threatened and endangered species (USFWS 2007a), the CDFG Special Animals list (CDFG 2006a), and the CDFG California Natural Diversity Database (CDFG 2006b). USFWS lists of federally threatened and endangered species for all project counties were also reviewed for relevant avian species (USFWS 2007a).

Special-status species were defined as those species currently listed, proposed for listing, or candidates for listing as rare, threatened, or endangered under Federal or California State Endangered Species Acts. California State species of concern were also reviewed (CDFG).

### **3.2 Project Surveys**

In order to encompass all potential ROW adjustments, extra work spaces, and potential effects of the project on the environment, a survey area of 500 feet was established and assessed for both sides of the proposed pipeline alignment (1000-foot survey corridor). In the case of arboreal nesting raptors, a 0.25-mile survey area off of the alignment was assessed (0.50-mile survey corridor). Aerial photography and geographic information system maps, in conjunction with ground reconnaissance surveys, were used to assess the potential for sensitive species habitats to occur within the project survey corridor.

Reconnaissance-level field surveys of the project alignment were performed on June 12 & 13, 2006 for L407 East; November 30, December 5 and 7, 2006 for L406; and June 29, 2007 for L407 West. The purpose of these reconnaissance level surveys was to assess site conditions, habitat types present, and to note any special-status wildlife species and habitats that may be present. The survey corridor was assessed by driving available roads and walking representative portions of the habitat within the survey area along the pipeline alignment, thus allowing a close-up inspection of the habitat; observable habitat characteristics were noted. The survey area was assessed for its potential to provide suitable habitat (nesting, foraging, cover, roosting, maternity, or wintering) for avian and mammalian species from Table 1.



## 4 RESULTS

Twenty special-status avian and two special-status mammalian species were recorded and or determined to potentially occur in the project area (Table 1); these species were assessed for potential project-related effects. Table 2 is a list of wildlife species observed in the project area during all reconnaissance surveys.

### 4.1 Avian Species Accounts and Impacts

Special-status avian species potentially occurring in the project area may be directly impacted by construction activity; direct impacts are assessed as loss/degradation of habitat; breeding activity disruption; destruction of nest, eggs, and young; disruption of foraging and other life activities. Indirect impacts are assessed as degradation of habitat quality resulting from improper restoration; this could cause a loss of future foraging, nesting, or cover opportunities, decreased prey base, and impacted water quality for species occurring in the area.

Significance of these impacts will vary according to when work is performed. Work that occurs during the typical avian breeding and nesting season (February through August) would likely have the most detrimental effects on avian species in the area. Wintering species present in or near construction areas could experience direct temporary impacts (i.e. temporary displacement) which are not considered significant unless habitat quality is permanently lost as a result of construction activities. Construction of pressure regulating stations will result in a small permanent loss of habitat identified in the project area; the locations of these stations will be along the proposed pipeline alignment at major street intersections. Aside from the aforementioned pressure regulating stations, project construction impacts/disturbance will be temporary in nature and will not result in losses or adverse modification of habitat. The following are individual avian species accounts which include project area habitat suitability assessment and potential project-related effects statement:

#### **Cooper's hawk (*Accipiter cooperii*)**

##### *Status, distribution, and threats*

The Cooper's hawk is designated as a California State species of concern (CDFG 2006a). The hawk is widely distributed across North America inhabiting broken woodlands and streamside groves. It breeds across southern Canada southward to the southern United States and into central Mexico and winters throughout the United States and Mexico (National Geographic 2002). Riparian habitat loss is the major threat for the species.



#### *Habitat requirements and relevant biology*

Cooper's hawks nest and forage in forest, woodland, and riparian habitats and have become more adapted to urban areas. Cooper's hawks require an adequate prey base of small birds and mammals. They are associated with edge habitats.

#### *Habitat assessment and occurrence in the project area*

The riparian forest and oak woodland habitats within the Project area provide suitable nesting and foraging habitat for the hawk. The species has moderate potential to occur in the project area.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of cover and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring Cooper's hawks. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

#### **Tri-colored blackbird (*Agelaius tricolor*)**

##### *Status, distribution, and threats*

Tricolored blackbird is designated as a California State species of concern (CDFG 2006a). Tricolored blackbirds are nearly endemic to California and the vast majority of the breeding population occurs in the Central Valley (and encompasses all valley counties) with populations also occurring in northeastern California and along the central and southern California coast. Nesting colonies are vulnerable to agricultural practices, wetland alteration and destruction, introduced predators, pesticides, and poisons (Hamilton 2004).

#### *Habitat requirements and relevant biology*

The species is a colonial nester that requires a protected nesting substrate of tall emergent or shrubby vegetation over or near open water. Foraging habitat includes annual grasslands, seasonal wetlands, agricultural fields, riparian areas, and cattle dairies. This species may visit lowland areas within mixed species flocks from October through March (Hamilton 2004).



### *Habitat assessment and occurrence in the project area*

Emergent freshwater marsh and riparian scrub habitat along area waterways, canals, and wetlands provides marginal nesting habitat due to the cover's narrow and sparse nature; the narrow width of the emergent vegetation may not provide enough protection to nesting birds from predators. However, CNDDDB records in the vicinity of the project have documented tri-colored black birds using linear habitats that are likely no wider than the emergent vegetation observed along the project alignment. Brush thickets scattered throughout the project area also provide suitable nesting substrates. Therefore, the species is considered to have moderate potential for occurrence in the project area.

### *Current management direction*

The following are summarized management recommendations for the species as described in Hamilton 2004:

Beedy and Hamilton (1997) summarized management recommendations: (1) avoid reproductive failures by large colonies throughout the geographic distribution of this species, (2) to enhance breeding habitat and success on public lands and to encourage commitment of private lands to tricolor habitat, (3) to enhance public awareness of this species and (4) to minimize habitat losses.

Hamilton (in press) emphasized (1) monitoring to include measurements of reproductive success, (2) designate adequate and sufficient habitat for tricolors in HCPs, (3) protect ephemeral habitats, (4) develop habitat to take advantage of rice as a tricolor nesting habitat when associated with native marsh vegetation, (5) avoid dairies as a focus for management and restoration, (6) develop water point sources where their absence limits tricolor settlement, (7) encourage development of colonies in conspicuous urban environments where their educational value will be useful, (8) develop tricolor habitat when reservoirs are designed and constructed, (9) create restoration colonies, (10) emphasize native plants in restoration efforts and (11) manage problem species such as ravens, night herons and coyotes whenever possible.

### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of cover and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring tri-colored blackbirds. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.



## **Golden eagle (*Aquila chrysaetos*)**

### *Status, distribution, and threats*

The golden eagle is a California species of concern and is fully protected (CDFG 2006a). Golden eagles in California are predominantly resident species, with typically small seasonal migrations.

### *Habitat requirements and relevant biology*

This species is often found foraging for lagomorphs and rodents over open terrain, including rolling hills, grasslands, savannas, desert, and shrub habitats. Golden eagles are known to hunt in pairs and to take mammals, reptiles, birds, and sometimes carrion. Nesting habitat includes cliffs of all heights and in trees in open areas. The breeding season for the golden eagle ranges from late January to August (Johnsgard 1990).

### *Habitat assessment and occurrence in the project area*

The open grassland areas within segments L406 and L407 East provide suitable foraging habitat; the L406 segment has an adequate prey base of ground squirrels and lagomorphs, but a readily available prey base was not apparent within the L407 East segment. Isolated trees and tree groves within and near open grasslands provide potential nesting opportunities.

### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring golden eagle. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

## **Short-eared owl (*Asio flammeus*)**

### *Status, distribution, and habitat requirements*

The short-eared owl is designated a California State species of concern (CDFG 2006a). The owl is considered a widespread winter migrant, found primarily in the Central Valley, in the western Sierra Nevada foothills, and along the coastline. An uncommon winter migrant in southern California, including the Channel Islands. Occasionally still breeds in northern California, but bulk of breeding range includes coastal areas in Del Norte and Humboldt counties, the San Francisco Bay Delta, northeastern Modoc



plateau, the east side of the Sierra from Lake Tahoe south to Inyo county, and the San Joaquin valley (CDFG 2007).

Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Requires dense vegetation; tall grasses, brush, ditches, and wetlands are used for resting and roosting cover. The species is partially diurnal, most commonly observed during twilight hours (Johnsgard 1988, CDFG 2007)

*Habitat assessment and species occurrence in the project area*

Open agricultural areas and grassland habitat along the alignment provide suitable foraging and nesting habitat.

*Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring short-eared owls. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

**Burrowing owl (*Athene cunicularia*)**

*Status, distribution, and threats*

The burrowing owl is designated as California State species of concern (CDFG 2006a). Burrowing owls range throughout most of the interior western US, southern Canada, the Central Valley of California, southern California, throughout Mexico into Central America, and along the western half of Florida. The species is declining with many populations extirpated from habitat loss/fragmentation and burrowing rodent control (Johnsgard 1988, Klute et. al. 2003).

*Habitat requirements and relevant biology*

Burrowing owls inhabit open, dry, gently rolling to flat grasslands, scrublands, road and railway right-of-ways, open urban habitats (i.e. airfields, campuses, and golf courses), and agricultural lands. Essential habitat characteristics for the burrowing owl are low-growing, sparse vegetation, and the occurrence of larger burrowing rodents such as ground squirrels and prairie dogs (Klute et.al. 2003).

*Habitat assessment and occurrence in the project area*



Non-native grassland habitat assessed in the L407 East segment had limited burrowing owl nesting potential, as suitable burrows were scarce or lacking altogether. This is likely due to the shallow nature of the eastern project area soils and underlying hardpans (Rodgers 1980). Vegetation on these grasslands, besides those actively grazed parcels, was generally tall-growing and denser than grasslands typically occupied by burrowing owls. Burrows and/or other cover microhabitat are an essential habitat component for burrowing owls and a lack of these features in an area makes the otherwise suitable landscape unsuitable for the owl.

Open grasslands in the Dunnigan Hills section of the L406 segment had an abundance of owls. Agricultural lands within all three segments contained potential owl habitat (ground squirrel burrows along area canal banks, levees, and road berms). Numerous CNDDDB records exist for the owl in the project region.

#### *Current management direction*

The following are summarized management recommendations for the species as described in Klute et.al. 2003: (1) Preserve and maintain large areas of treeless grasslands (2) maintenance of suitable habitat should be performed through grazing, mowing, and fire (3) enhance suitable habitat area by providing elevated perches near suitable burrows (4) preservation of burrowing mammal populations in suitable habitat (5) relocate and provide artificial burrow for evicted owls (6) standardize mitigation protocols to minimize impacts from developments; establish buffer area standards (7) minimize pesticide use or at minimum use lowest toxicity formulas (8) standardize monitoring/surveying practices range-wide (9) increase public awareness.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of cover and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

Owls were abundantly observed within the L406 segment and also have potential to occur within agricultural areas along all three segments where suitable habitat exists. With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring burrowing owls. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.



## **Aleutian Canada goose (*Branta canadensis leucopareia*)**

### *Status, distribution, and threats*

The Aleutian Canada goose is a federally de-listed species. The goose breeds on the Aleutian Islands of Alaska and migrates to the Pacific Coast states of Oregon and California. In California, geese winter in the Sacramento and San Joaquin Valleys. Threats to the species are loss of wintering habitats and nest predation by introduced predators on the nesting grounds in Alaska (Pacific Flyway Council 1999).

### *Habitat requirements and relevant biology*

The geese spend the winter on large open areas such as grasslands, wetlands, and agricultural areas.

### *Habitat assessment and occurrence in the project area*

The grassland habitat (with inclusive seasonal and vernal pool wetlands) and agricultural lands in the project area offer suitable wintering areas for Aleutian Canada geese. These areas have potential to attract migrating geese on their way to ultimate wintering destinations in the San Joaquin Valley. The species is considered to have moderate potential to winter in the project area.

### *Current management direction*

In California, the US Fish and Wildlife Service has worked extensively with local landowners in cooperative partnerships to protect and manage wintering habitat on private land through fee title acquisition, easements and voluntary programs. Important wintering and migration habitat in California and Oregon also has been acquired as national wildlife refuges. Conservation and management of winter and migration habitat in California and Oregon remains a high priority for the Service and for the California and Oregon state governments. In addition to acquiring certain lands used by the geese, the Service and the State of California are working to reduce competition between geese and humans on other privately owned cropland and pastures. In California's Sacramento and San Joaquin valleys, and along the northern California coast, private landowners manage their lands to provide wintering habitat for Aleutian Canada geese. Some landowners plant crops to provide forage for the geese. These efforts, in addition to the Service's land acquisitions and conservation easements, provide thousands of acres of wintering habitat crucial to the recovery of the Aleutian Canada goose (USFWS 2001a).

### *Potential project-related effects*

The project construction schedule may coincide with the arrival and wintering of migrating geese from Alaska. Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss migration stop-over and/or foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future stop-over and foraging opportunities and impacted water quality through future sedimentation and/or altered hydrology.



Construction activities may temporarily disrupt foraging and resting activities of potentially occurring geese along a stop-over in the project area as the birds head south. This is not considered a significant impact to the species. Significant impacts to potentially wintering Aleutian Canada geese are not expected.

### **Ferruginous hawk (*Buteo regalis*)**

#### *Status, distribution, and threats*

The ferruginous hawk is a California State species of concern (CDFG 2006a). The hawk's breeding range encompasses most of the interior western U.S. and central southern Canada. The species winters throughout southwestern North America and into Mexico. The species is wholly a winter migrant in California. Reasons for declines include loss of suitable breeding and wintering habitat (Johnsgard 1990).

#### *Habitat requirements and relevant biology*

The hawk inhabits sagebrush flats, desert scrub, low foothills surrounding valleys, fringes of pinyon-juniper habitats, and semi-arid grassland habitats with scattered trees, rock outcroppings, and riparian corridors with tall trees. Suitable habitats must support the hawk's main diet components which consist of large rodents and lagomorphs (Johnsgard 1990).

#### *Habitat assessment and occurrence in the project area*

The open grassland in the project area provides suitable wintering habitat for the ferruginous hawk. An abundant prey base for wintering hawks was observed within the L406 segment of the project alignment, therefore the species is considered to have moderate potential to winter in the project area.

#### *Potential project-related effects*

Project construction may coincide with the arrival of migrating hawks (generally arrive in California in September). Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of wintering and foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of wintering and foraging opportunities and impacted water quality through future sedimentation and/or altered hydrology. Construction activities may temporarily disrupt foraging activity of potentially occurring hawks. This is not considered a significant impact to the species. Significant impacts to potentially wintering ferruginous hawks are not expected.

### **Swainson's hawk (*Buteo swainsoni*)**

#### *Status, distribution, and threats*

The Swainson's hawk is listed as threatened by California State (CDFG 2006a). Its breeding range includes the interior western U.S., northern-central Mexico, northeastern Alaska and northwestern and



south-central Canada, and the Central Valley of California; it winters primarily in South America (Johnsgard 1990). Breeding occurs from March–August (Dunne et al. 1988). Threats include loss of preferred mature riparian forest nesting habitat, loss or adverse modification of high-quality foraging habitat (open grasslands and high-prey yielding crops such as alfalfa) from development or conversion to incompatible (low-prey yielding) crop types, and pesticide use on migration route and wintering areas (Woodbridge 1998).

#### *Habitat requirements and relevant biology*

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

#### *Habitat assessment and occurrence in the project area*

Suitable nesting habitat was observed along the entire proposed alignment as riparian forest habitat and scattered single trees and clumps of trees. The project area's open grasslands and agricultural areas provide suitable foraging habitat. Numerous CNDDDB records of the hawk exist in the project area, many within two miles of the alignment. Swainson's hawks are considered to have high potential for occurrence in the project area.

#### *Current management direction*

Current management strategies for Swainson's hawks in the Central Valley are focused on mitigation of habitat losses within known hawk territories, riparian habitat conservation and restoration, and maintaining compatible crop types and open areas for foraging habitat (CDFG 1993, Woodbridge 1998).

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.



With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring Swainson's hawks. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

### **Mountain plover (*Charadrius montanus*)**

#### *Status, distribution, and threats*

The mountain plover is designated as a California State species of concern (CDFG 2006a). The plover breeds in the interior states of Montana, Wyoming, Colorado, New Mexico, and from the Texas Panhandle east to Nebraska. It winters from central California and southern Arizona southward into Mexico. Threats to the species are primarily attributed to the conversion of native prairies to croplands, significantly reducing the availability of suitable nesting habitat, and nest destruction from agricultural practices (National Geographic Society 2002, USFWS 2003).

#### *Habitat requirements and relevant biology*

The mountain plover is one of the few shorebirds that live in dry regions away from water preferring short-grass prairies and dry lowland areas; often found on grassy or bare dirt fields. Currently mountain plovers are also found on human-made landscapes such as sod farms, and cultivated fields that may mimic their natural habitat associations, and other sites with little vegetation such as alkali flats (National Geographic Society 2002, USFWS 2003).

#### *Habitat assessment and occurrence in the project area*

The grassland and agricultural fields in the project area offer suitable wintering habitat for potentially occurring mountain plovers. The species is considered to have moderate potential to winter in project area.

#### *Potential project-related effects*

The project construction schedule may coincide with the arrival and wintering of mountain plovers. Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of wintering and/or foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future wintering and foraging opportunities, and impacted water quality through future sedimentation and/or altered hydrology. Construction activities may temporarily disrupt foraging and wintering activities of potentially occurring plovers. This is not considered a significant impact to the species. Significant impacts to potentially wintering mountain plovers are not expected.

### **Northern harrier (*Circus cyaneus*)**

#### *Status, distribution, and habitat requirements*

The northern harrier is designated as a California State species of concern (CDFG 2006a). It occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 3000 m (10,000 ft). Harriers breeds from sea level to 1700 m (0-5700 ft) in the Central Valley and Sierra Nevada, and up to 800 m (3600 ft) in northeastern California. They are permanent resident of the northeastern plateau and coastal areas; less common resident of the Central Valley. The species is a widespread winter resident and migrant in suitable habitat. Harriers frequent meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Uses tall grasses and forbs in wetland, or at wetland/field border, for cover; roosts on ground (CDFG 2007).

#### *Habitat assessment and species occurrence in the project area*

Open grassland habitat and agricultural areas along the alignment provide suitable foraging habitat. The species was observed during reconnaissance surveys and therefore is considered to have a high potential for occurrence.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring northern harrier. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

### **Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)**

#### *Status, distribution, and habitat requirements*

The western yellow-billed cuckoo is listed as a federal candidate species and is listed as endangered by California State (USFWS 2001b, CDFG 2006a). The breeding range of the yellow-billed cuckoo formerly included most of North America from southern Canada to the Greater Antilles and northern Mexico. In recent years, the species' distribution in the west has contracted. The northern limit of breeding in the coastal States is now in Sacramento Valley, California, and the northern limit of breeding in the western interior States is southern Idaho. In California, Laymon and Halterman 1987 describe breeding populations of greater than five pairs which persist every year in California are currently limited to the Sacramento River from Red Bluff to Colusa and the South Fork Kern River from Isabella Reservoir to



Canebrake Ecological Reserve. Other sites where small populations of cuckoos (<5 pairs) breed or possibly breed (but not necessarily every year) are: The Feather River from Oroville to Verona, Butte, Yuba and Sutter counties; the Prado Flood Control Basin, San Bernardino and Riverside counties; the Amargosa River near Tecopa, Inyo Co.; the Owens Valley near Lone Pine and Big Pine, Inyo Co.; the Santa Clara River near Santa Clarita, Los Angeles Co.; the Mojave River near Victorville, San Bernardino Co.; and the Colorado River from Needles, San Bernardino Co. to Yuma, Imperial Co. Cuckoos winter in South America from Columbia and Venezuela, south to northern Argentina. The species is threatened by riparian habitat loss and modification, water management and flood control projects, and by the introduction of invasive riparian plant species (Laymon 1998, USFWS 2001b).

Cuckoos nest in riparian forests along broad, lower floodplains of larger river systems. The cuckoo requires broad, well-developed, low-elevation riparian woodlands of primarily mature cottonwoods and willows in large, contiguous tracts of habitat. Dense under story foliage seems to be an important habitat characteristic in nest site selection and cottonwood trees are an important foraging habitat component in California. The species exhibits some degree of nest site fidelity and can act as a facultative brood parasite (USFWS 2001b).

#### *Habitat assessment and species occurrence in the project area*

The broad, well developed riparian forest habitat along the Sacramento River and other large waterways within L407 West segment is considered suitable habitat for the cuckoo. The species is considered to have a moderate potential for occurrence.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring cuckoos. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

#### **White-tailed kite (*Elanus leucurus*)**

##### *Status, distribution, and threats*

The white-tailed kite is designated as a California fully protected species (CDFG 2006a). The kite is a permanent resident of river valleys, riparian woodlands, and adjacent open fields and marshes in



California's Central Valley and along the west coast (Johnsgard 1990, National Geographic Society 2002). Possible declines may be due to conversion of agricultural lands to urban areas and clean farming techniques that reduce prey populations, increased interspecific nest-site competition, and human disturbance at nests (Dunk 1995).

#### *Habitat requirements and relevant biology*

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

#### *Habitat assessment and occurrence in the project area*

Suitable nesting habitat was observed along the entire proposed alignment as riparian forest habitat and scattered single trees and clumps of trees. The project area's open grasslands and agricultural areas provide suitable foraging habitat. Numerous CNDDDB records of the kite exist in the project area, many within two miles of the alignment. White-tailed kites are considered to have high potential for occurrence in the project area.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring white-tailed kites. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

#### **Little willow flycatcher (*Empidonax traillii brewsteri*)**

##### *Status, distribution, and threats*

The little willow flycatcher is listed as endangered in California (CDFG 2006a). It is a rare to locally uncommon summer resident in wet meadow and montane riparian habitats at 2,000 to 8,000 feet in the Sierra Nevada and Cascade ranges. Loss and degradation of riparian habitat is the principal reason for



the decline of the willow flycatcher population and the decrease in geographic range of the species. Impacts of livestock grazing to both the habitat and nests of breeding birds have also been implicated in the decline of the species. Nest parasitism by brown-headed cowbirds (*Molothrus ater*) has contributed to population reductions.

#### *Habitat requirements and relevant biology*

The species most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. The little willow flycatcher primarily nests in dense willow thickets in montane meadows and along streams. This species forages in riparian and meadow habitats during the nesting season. This flycatcher is occasionally found as a migrant in Central Valley riparian systems (CDFG 2007).

#### *Habitat assessment and occurrence in the project area*

The broad, well developed riparian forest habitat along the Sacramento River and other large waterways within L407 West segment is considered suitable habitat for the cuckoo. The species is considered to have a moderate potential for occurrence.

#### *Potential project-related effects*

The project construction schedule may coincide with the migration of little willow flycatchers. Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of migration and/or foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future migration and foraging opportunities, and impacted water quality through future sedimentation and/or altered hydrology. Construction activities may temporarily disrupt foraging and migration activities of potentially occurring flycatchers. This is not considered a significant impact to the species. Significant impacts to potentially occurring migrant flycatchers are not expected.

### **Greater sandhill crane (*Grus canadensis tabida*)**

#### *Status, distribution, and threats*

The greater sandhill crane is listed as a California State threatened species and is a fully protected species (CDFG 2006a). The crane is one of six subspecies of sandhill cranes. Nesting pairs occur in Lassen, Modoc, Plumas, Shasta, Sierra, and Siskiyou counties. Historically, the crane wintered on the expansive wetlands of California's Central Valley. Currently, it winters in lowland areas of the Sacramento, San Joaquin, and Imperial Valleys. This species continues to experience threats on both wintering and breeding grounds by agricultural and residential conversion of habitat, predation, human disturbance, collisions with power lines, and by destruction of nests and young from current agricultural practices (CDFG 1994, CDFG 2007).



### *Habitat requirements and relevant biology*

In California, the crane breeds in wetlands and forages in meadows, irrigated pastures, fields, and marshes. Sandhill cranes roost together at night in shallow water (an important habitat characteristic) and commonly feed on grains, seeds, aquatic invertebrates, insects, small reptiles, amphibians, and rodents (CDFG 1994).

### *Habitat assessment and occurrence in the project area*

The grassland and agricultural areas in the project area offer suitable wintering habitat for potentially occurring sandhill cranes. The open grassland habitat and agricultural fields have potential to attract wintering cranes. The species is considered to have moderate potential to winter in the project area.

### *Current management direction*

CDFG (1994) discusses in depth recommended management directives for the crane. These directives are summarized as follows: (1) nesting and wintering habitat acquisition and management; placing conservation easements on private lands that provide these types of habitats (2) power line marking in high movement areas (adjacent species habitats) to reduce instances of collisions (3) habitat protection and restoration (4) modification of grazing practices to lessen conflicts with species nesting activity (5) maintaining compatible agricultural practices and crop types to provide for crane foraging, loafing sites (6) predator control where appropriate.

### *Potential project-related effects*

The project construction schedule may coincide with the arrival and wintering of sand hill cranes. Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of wintering and/or foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future wintering and foraging opportunities and impacted water quality through future sedimentation and/or altered hydrology.

Construction activities may temporarily disrupt foraging and wintering activities of potentially occurring cranes. This is not considered a significant impact to the species. Significant impacts to potentially wintering sandhill cranes are not expected.

### **Bald eagle (*Haliaeetus leucocephalus*)**

#### *Status, distribution, and threats*

The bald eagle is listed as endangered by the state; the species has been proposed for federal de-listing, with the de-listing date of August 8, 2007 (USFWS 2007). Currently, its main California breeding range is restricted to the northern Sierra Nevada and southern Cascade ranges and interior northern Coastal range (Johnsgard 1990, National Geographic Society 2002). The bald eagle winters generally throughout



its breeding range but more frequently along coastal areas. Threats include egg-shell thinning from DDT use, habitat loss, and human disturbance.

*Habitat requirements and relevant biology*

The bald eagle nests in large, mature trees and on cliffs near large bodies of water or free-flowing rivers that provide an adequate fish prey base. The bald eagle requires large bodies of water for hunting and fishing, as well as adjacent snags or structures for perching. The species is highly susceptible to human disturbance during nesting activities.

*Habitat assessment and occurrence in the project area*

No suitable nesting habitat is located along the project alignment and the project area is located outside current nesting distribution for the bald eagle. The project area may see an occasional migrant during the winter. The species is considered to have a moderate potential to occur as a migrant.

*Potential project-related effects*

No significant impacts to potentially occurring bald eagles from project-related work activity are anticipated because the project boundary does not transect current nesting regions for this species. The proposed project has the potential to encounter the federally and state listed bald eagle as the project timeframe may overlap with potential migrating eagles in the area. Potential effects are anticipated to include temporary displacement from the project action area and are considered insignificant or discountable.

**Loggerhead shrike (*Lanius ludovicianus*)**

*Status, distribution, and threats*

The loggerhead shrike is designated a California State species of concern (CDFG 2006a). The shrike is a common resident and winter visitor in lowlands and foothills throughout California. Threats include habitat loss and pesticide use (CDFG 2007).

*Habitat requirements and relevant biology*

Loggerhead shrikes prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats, but it also is found in cropland areas (CDFG 2007).

*Habitat assessment and occurrence in the project area*

The open ruderal, agricultural, and grassland areas of the project area provide foraging habitat for the shrike. Area fence posts, barbed wire, road signs, and shrubs provide the necessary hunting perches for this species. Suitable nesting habitat was observed in the project area as scattered single trees, clumps



of trees, and shrubs/hedges associated with rural residences. The species is fairly common to the region and therefore is considered to have moderate potential for occurrence.

#### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring loggerhead shrikes. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

#### **Long-billed curlew (*Numenius americanus*)**

##### *Status, distribution, and threats*

The long-billed curlew is designated as a California State species of concern (CDFG 2006a). It is an uncommon to fairly common breeder from April to September in wet meadow habitat in northeastern California in Siskiyou, Modoc, and Lassen Counties. The long-billed curlew is an uncommon to locally very common as a winter visitant from early July to early April along most of the California coast and in the Central and Imperial valleys, where the largest flocks occur. The species is threatened by incompatible agricultural practices (CDFG 2007).

##### *Habitat requirements and relevant biology*

In California, the curlew nests on elevated interior grasslands and wet meadows, usually adjacent to lakes or marshes. Preferred winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. On estuaries, feeding occurs mostly on inter-tidal mudflats. Small numbers of non-breeders remain on the coast in summer, and larger numbers remain in some years in the Central Valley.

##### *Habitat assessment and occurrence in the project area*

The grassland and agricultural fields in the project area offer suitable wintering habitat for potentially occurring long-billed curlews. The open grassland habitat and agricultural fields have potential to attract wintering curlews, therefore the species is considered to have moderate potential to winter in the project area.



### *Potential project-related effects*

The project construction schedule may coincide with the arrival and wintering of long-billed curlews. Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of wintering and/or foraging opportunities, species harassment, displacement, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future wintering and foraging opportunities and impacted water quality through future sedimentation and/or altered hydrology.

Construction activities may temporarily disrupt foraging and wintering activities of potentially occurring curlews. This is not considered a significant impact to the species. Significant impacts to potentially wintering long-billed curlews are not expected.

### **White-faced ibis (*Plegadis chihi*)**

#### *Status, distribution, and threats*

The white-faced ibis is designated as both a California State species of concern (CDFG 2006a). It breeds across western United States northward to Montana, eastward to western Louisiana, and southward to South America. It winters from southern California and Louisiana southward. It is an uncommon summer resident in sections of southern California, a rare visitor in the Central Valley, and is more widespread in migration. Formerly more common, especially in the San Joaquin Valley, this species no longer breeds regularly anywhere in California. The species is susceptible to wetland habitat loss and alteration, pesticide use, and incompatible agricultural practices (Remsen 1978, CDFG 2007).

#### *Habitat requirements and relevant biology*

White-faced ibis prefer to feed in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. The ibis eats earthworms, insects, crustaceans, amphibians, small fishes, and miscellaneous invertebrates. It probes deep in mud with its long bill, and also feeds in shallow water or on the water surface. They nest and roost amidst dense, freshwater emergent vegetation such as bulrushes, cattails, reeds, or low shrubs over water (CDFG 2007).

#### *Habitat assessment and occurrence in the project area*

Open agricultural fields and grasslands in the area provide suitable foraging habitat. There are no extensive emergent wetlands in the area to provide suitable nesting habitat; breeding activity may however occur along weedy field margins and within the wetland habitat associated with the slower moving canals and sloughs. Ibis were observed during reconnaissance surveys and are commonly seen in the project region, therefore the species is considered to have high potential for occurrence.



### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring ibis. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

### **Purple martin** (*Progne subis*)

#### *Status, distribution, and threats*

The purple martin is designated as a California State species of concern (CDFG 2006a). It is an uncommon to rare, local summer resident in a variety of wooded, low-elevation habitats throughout the state; a rare migrant in spring and fall; absent in winter. Threats include loss of habitat, removal of suitable nest substrate (snags), and competition from invasive species (starlings and house sparrows) (CDFG 2007).

#### *Habitat requirements and relevant biology*

During the breeding season, the purple martin uses valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, and riparian habitats. It also occurs in coniferous habitats, including closed-cone pine-cypress, ponderosa pine, Douglas-fir, and redwood. Purple martins often nest in tall, old trees near a body of water. They also nest occasionally in residential areas. The purple martin is a cavity nester that utilizes natural and man-made cavities. During migration, they can be found in a variety of open habitats including grassland, wet meadow, and fresh emergent wetland, usually near water (CDFG 2007).

#### *Habitat assessment and occurrence in the project area*

Scattered isolated trees, small tree groves, and anthropogenic structures in the area provide suitable nesting habitat. Only one CNDDDB record of the species exists in the project area; this recorded is from a similar habitat situation. The species is considered to have moderate potential to occur.

#### *Current management direction*

Management recommendations include: (1) Experiment with methods for starling control at purple martin nest sites. (2) Retain snags wherever possible; these are important nest sites for this species as well as bluebirds, chickadees, nuthatches, etc. (3) Erect nest boxes in areas where purple martins still nest.



### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring purple martins. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

### **Bank swallow (*Riparia riparia*)**

#### *Status, distribution, and threats*

The bank swallow is a California State threatened species (CDFG 2006a). It is a locally common to uncommon breeding season resident in northern and central California (Garrison 1998). Because nesting only occurs in suitable habitat, breeding areas are widely dispersed throughout northern and central California in major lowland valleys and coastal areas where alluvial soils exist. The major breeding population is confined to the Sacramento and Feather Rivers and their major tributaries north of their confluence (Laymon et al. 1988). The Sacramento River population represented approximately 50% of the state's population in 1987, and the population occurs between Redding, Shasta County, and the Yolo Bypass, Yolo County. The Feather River supported 25% of the state's population in 1987; this population occurs between Oroville, Butte County, and the confluence of the Sacramento and Feather rivers, Sutter County.

Other relatively large breeding populations of several colonies have been recently found in the following locations including: (1) Scott River, Siskiyou County; (2) Cache Creek, Yolo County; (3) Pit River, Shasta and Lassen counties; (4) American River, Sacramento County; (5) Cosumnes River, Sacramento County; (6) Salinas River, Monterey County; (7) Fall River, Shasta County; (8) Hat Creek and Lake Briton area, Shasta County; (9) Susan River and Baxter Creek, Lassen County; (10) Tule and Lower Klamath Lake area, Siskiyou and Modoc counties; (11) Clear Lake Reservoir, Modoc County; (12) Indian Creek, Plumas County; (13) Long Valley Creek, Lassen County; and (14) Bishop area, Inyo County. Single colonies are widely scattered at other locations including: (1) Smith River, Del Norte County; (2) Fort Funston/Lake Merced, San Francisco County; (3) Ano Nuevo, San Mateo County; (4) Pajaro River, Monterey and Santa Cruz counties; (5) Lake Crowley, Mono County; (6) Bridgeport, Mono County (T. and J. Heindel pers. comm.); (7) Topaz Lake, Mono County (T. and J. Heindel pers. comm.); (8) Lake Shastina, Siskiyou County; and (9) Santa Clara River, Ventura County. Threats to the species are primarily attributed to habitat loss and alteration from bank protection projects (CDFG 1992).



### *Habitat requirements and relevant biology*

Nesting colonies only occur in vertical banks or bluffs of friable soils suitable for burrowing by these small birds. Banks or bluffs must be at least 1 m tall to have some predator deterrence values, and some source of continual erosion is almost always present. Breeding habitat vegetation is extremely varied because breeding sites are mostly selected for the suitability of the nesting bank. Throughout California, colonies are mostly located amidst lowland vegetation types including riparian forests dominated by willows (*Salix* spp.) and Fremont cottonwood (*Populus fremontii*). Many colonies along the Sacramento and Feather rivers occur under cultivated crops including deciduous orchards, irrigated row crops, and dryland grain crops. Colonies at coastal locations are located under coastal grassland and coastal scrub communities, while colonies in montane environments in Shasta, Lassen, and Plumas counties occur in coniferous forests where pines (*Pinus* spp.) and firs (*Abies* spp.) dominate. Colonies in northeastern California occur under irrigated pasture, riparian forests, and desert shrub habitats (Garrison 1998).

### *Habitat assessment and occurrence in the project area*

Vertical or near vertical canals and stream banks in the project area with friable soils provide potential nesting substrates. The species is considered to have moderate potential to occur.

### *Current management direction*

The goal of the recovery plan (CDFG 1992) for the species is the maintenance of a self-sustaining wild population. Management strategies to achieve this goal include (1) evaluation of artificial habitat, and (2) protection, enhancement, and maintenance of natural habitats via a variety of management alternatives.

### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction resulting in loss of nesting and/or foraging opportunities, nesting activity disruption resulting in a loss of young or eggs, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or nesting opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring bank swallows. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

## **4.2 Mammalian Species Accounts and Impacts**

Special-status mammalian species potentially occurring in the project area may be directly impacted by construction activity; direct impacts are assessed as direct mortality, loss/degradation of habitat; breeding



activity disruption; destruction of cover, roosting, and maternity sites; loss of young; disruption of foraging and other life activities. Indirect impacts are assessed as degradation of habitat quality resulting from improper restoration; this could cause a loss of future foraging, cover, roosting, and maternity opportunities, decreased prey base, and impacted water quality for species occurring in the area. Construction of pressure regulating stations will result in a small permanent loss of habitat identified in the project area; the locations of these stations will be along the proposed pipeline alignment at major street intersections. Aside from the aforementioned pressure regulating stations, project construction impacts/disturbance will be temporary in nature and will not result in losses or adverse modification of habitat. The following are individual mammalian species accounts which include project area habitat suitability assessment and potential project-related effects statement:

**Pallid bat (*Antrozous pallidus*)**

*Status, distribution, and threats*

The pallid bat is a California species of concern (CDFG 2006a). It commonly occurs as a yearlong resident throughout California at low elevations. Threats include loss of roosting/maternity sites and disturbance from human activity/presence.

*Habitat requirements and relevant biology*

A wide variety of habitats are occupied by this bat, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The pallid bat feeds on a variety of insects and arachnids, including beetles, moths, spiders, scorpions, and Jerusalem crickets, foraging over open ground usually 2 to 8 feet aboveground. Most prey is taken on the ground as well. Like other bats, the pallid bat uses echolocation for obstacle avoidance and prey location.

The pallid bat roosts in caves, crevices, mines, and occasionally in hollow trees and buildings. Roosts are selected to protect bats from high temperatures, and the species may move deeper into cover if temperatures rise. Night roosts may be in more open sites, such as porches and open buildings. The pallid bat, like other bat species, is very sensitive to disturbance of roosting sites. Such sites are essential for metabolic economy, juvenile growth, and as night roosts to consume prey (BCI 2002).

*Habitat assessment and occurrence in the project area*

Anthropogenic structures, riparian areas, and scattered trees/tree groves provide potential roosting opportunities; buildings and tree hollows provide potential maternity sites. The species is considered to have moderate potential to occur in all three project segment.



### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction or adverse modification resulting in loss of roosting, maternity, and/or foraging opportunities, breeding activity disruption resulting in a loss of young, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or cover opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring pallid bat. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

### **American badger (*Taxidea taxus*)**

#### *Status, distribution, and threats*

The American badger is classified as a California State species of concern (CDFG 2006a). It is an uncommon, permanent resident found throughout most of the State, except along the northern North Coast area. Species is somewhat tolerant of human activities; however predator control using indiscriminate trapping and persistent poisons causes extensive losses.

#### *Habitat requirements and relevant biology*

The badger is most abundant in drier open stages of most shrub, forest, and herbaceous habitats where friable soils are present. Badgers are carnivorous, highly specialized fossorial mustelids that help control small mammal populations.. They eat fossorial rodents: rats, mice, chipmunks, and especially ground squirrels and pocket gophers. They also eat some reptiles, insects, earthworms, eggs, birds, and carrion. Diet shifts seasonally and yearly in response to availability of prey. Badgers dig burrows in friable soil for cover and frequently reuse old burrows, although some may dig a new den each night, especially in summer (CDFG 2007).

#### *Habitat assessment and occurrence in the project area*

The open grassland habitat in the Dunnigan Hills area of segment L406 is considered suitable habitat due to the friable nature of the soil and readily available rodent prey base; a dead badger was also observed along Interstate 505 in the project area. The species is not expected to occur within the other two project segments mainly due to scarcity of suitable prey base, land use practices (agriculture), and/or duriphan soils.

### *Potential project-related effects*

Potential direct effects resulting from pipeline construction include habitat destruction or adverse modification resulting in loss or reduction of cover and/or foraging opportunities, breeding activity



disruption, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss of future foraging and/or cover opportunities and impacted water quality through future sedimentation and/or altered hydrology.

With these potential project effects in mind, the project is considered to have potential to significantly impact potentially occurring badgers. However, this level of significance can be reduced to less than significant through implementation of project conservation measures.

## **5 PROJECT CONSERVATION MEASURES**

To minimize or avoid potential project related impacts, the following measures are recommended:

- Confine all heavy equipment, vehicles, and construction work to existing access roads, road shoulders, and disturbed or designated areas. Work area extents should be delineated in the field in order to prevent construction activities from straying into sensitive areas.
- A 15mph speed limit will be observed on non-paved portions of the construction ROW.
- Minimize vegetation removal to extent possible; remove only that necessary to accommodate construction. Do not remove trees with a DBH of six-inches or greater unless necessary.
- Employ erosion, sediment, material stockpile, and dust control Best Management Practices (BMPs) on site. Do not permit any fill or runoff to enter wetland areas or waterways.
- As construction conditions and feasibility allow, HDD pipeline installation methods will be used to install the pipeline beneath sensitive wetland habitats and waterways identified along the pipeline alignment. This construction practice will avoid direct surface impacts to wetland resources.
- Properly fence and/or cover unattended, open trenches or excavations to prevent wildlife entrapment. Provide a soil escape ramp to facilitate the escape of any trapped wildlife.
- Personnel will visually check for wildlife beneath equipment and vehicles situated within the construction area prior to moving.
- Return work areas to preexisting contours and conditions upon completion of work. When work is completed, evaluate and perform if necessary, restoration work (including revegetation and soil stabilization).
- In accordance with federal and state endangered species acts, report all observations of sensitive species to appropriate state and federal resource agency personnel and take care not to take or harass the species.
- In accordance with the Migratory Bird Treaty Act, if an active nest is observed within the project area, stop work and contact a PG&E biologist immediately.
- Use extreme caution when handling and/or storing chemicals (e.g., fuel and hydraulic fluid) near waterways, and abide by any and all applicable laws and regulations. Follow all applicable hazardous waste BMPs. Appropriate materials will be on site to prevent and manage spills.
- Properly contain and remove from the project site all trash and waste items generated by construction or crew activities.
- Permit no pets, campfires, or firearms on the project site.



- A qualified biologist will provide environmental awareness training to all construction personnel before construction begins. The training will include species descriptions and protection measure discussion.
- Schedule construction to avoid the breeding and nesting season of avian species in the area (typically February 1<sup>st</sup> through August 31<sup>st</sup>). If construction will take place during this time, conduct pre-construction nesting bird surveys for avian species with potential to occur on site. Additional mitigation may be required to minimize disturbance of detected nesting activity such as allowing nesting activity to conclude before initiating construction in an area, restricting certain types of construction practices/activities, creating screening devices to shield nest sites from construction activity, and establishing buffer areas around active nest sites.
- All construction activity will ideally take place during daylight hours only. Activities such as HDD operations must occur during daylight hours in order to maximize detection capability for potential frac-outs.
- PG&E will prepare an HDD Fluid Release Contingency Plan that will specify procedures to contain and clean up any drilling fluids released into the terrestrial environments or area waterways in the event of a frac-out during HDD procedures.

## **6 CONCLUSION AND DETERMINATION**

Potential direct effects resulting from pipeline construction include habitat destruction, species harassment, displacement, or mortality, and impacted water quality through sedimentation and/or altered hydrology. Potential indirect effects include adverse habitat modification that results in loss or degradation of future habitat functionality and impacted water quality through future sedimentation and/or altered hydrology.

Potential adverse impacts to these species and their habitats can be minimized or avoided if project conservation measures are implemented. Restricting work to non-sensitive or designated areas, implementation of appropriate construction BMPs, careful handling of chemicals near waterways, providing environmental awareness to the crew, use of non invasive pipeline installation methods (such as HDD) , and restoring the site appropriately are general measures that will reduce or eliminate the negative effects that may be associated with the project. Additional conservation measures that will prevent or minimize adverse affects to potentially occurring sensitive species include avoiding sensitive temporal windows for wildlife, conducting appropriate pre-construction surveys for wildlife species in the project action area, restricting construction activities to daylight hours, checking for wildlife beneath vehicles and equipment at the project area, and having a qualified biologist on-site for construction monitoring. Implementation of all of these measures and careful planning will help ensure that the project has the least amount of adverse affects on ecosystems or sensitive species in the project area.

### **6.1 Determination Statement**

The proposed project has the potential to encounter one federally listed bird species, however this species is slated for federally delisting on August 8, 2007. The federally threatened bald eagle has the



potential to occur as a migrant in the project area during project construction. Impacts to bald eagle would likely be no more than temporary displacement; this effect is considered insignificant or discountable. As such, the proposed project may affect but is not likely to adversely affect the federally listed bald eagle.

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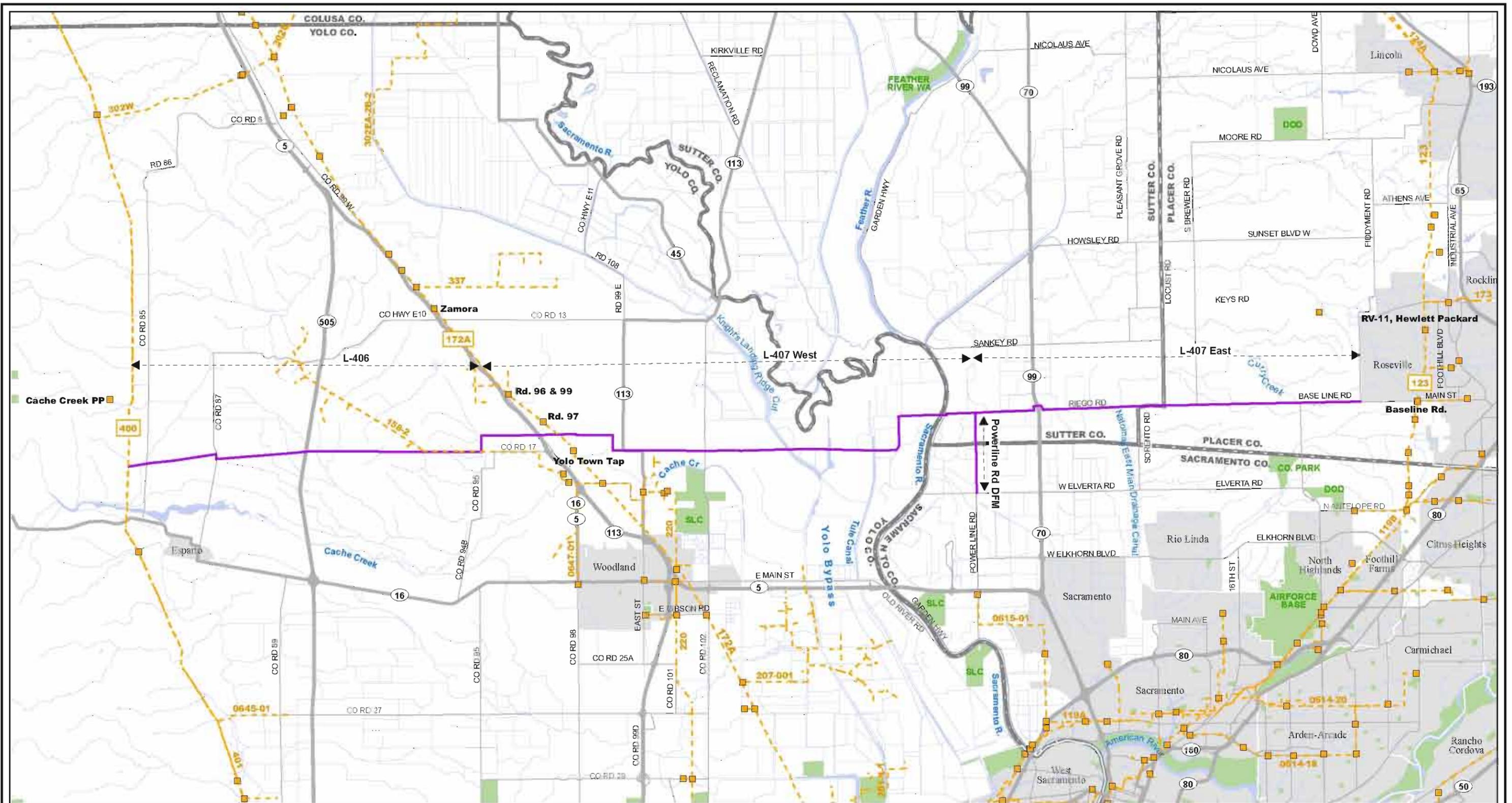


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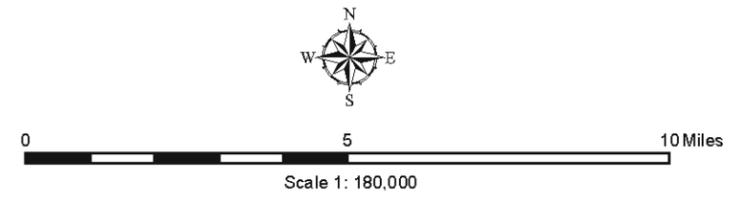
## Figures





**Line 406 and Line 407  
Pipeline Project  
Figure 1  
Overview Map**

- Proposed Pipeline
- Gas Transmission Station
- Gas Transmission Line
- Highway
- Major Road
- Incorporated Area
- County Boundary
- Public Land
- Hydrology





## Tables



Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<b>Avian Species</b>			
<i>Accipiter cooperii</i> Cooper's hawk	CSC	Patch woodlands, especially riparian. Nests in dense deciduous, mixed, and coniferous forests. May also use riparian forests/woodlands. Becoming more common in suburban and urban areas. Forages medium-sized birds and mammals in similar habitats. Year-round range throughout California (except desert southeast).	Riparian and woodland habitats in the project area provide suitable nesting substrates and foraging habitat. The species is considered to have a moderate potential for occurrence in all segments of the project.
<i>Agelaius tricolor</i> Tricolored blackbird	CSC	Colonial nester that requires a protected nesting substrate of tall emergent or shrubby vegetation over or near open water. Tricolored blackbirds are nearly endemic to California and over 75% of the breeding population occurs in the Central Valley (and encompasses all valley counties). Foraging habitat includes annual grasslands, seasonal wetlands, agricultural fields, riparian areas, and cattle dairies. This species may visit lowland areas within mixed species flocks from October through March.	Freshwater marsh habitat associated with waterways and wetlands and scattered brushy thickets provide marginal nesting habitat due to the generally narrow width and sparse nature of the vegetation; open grassland and agricultural habitats provide suitable foraging habitat. The species is considered to have a moderate potential for occurrence in all segments of the project.
<i>Aquila chrysaetos</i> Golden Eagle	CSC and CFP	Forages over open terrain, including rolling hills, grasslands, savannas, desert, and shrub habitats. Breeds in cliffs and in tall solitary trees. Species is widespread in California.	Rolling grassland within the Dunnigan Hills section of L406 provides suitable foraging habitat; this area supports a large rodent prey base and an eagle was observed during 2006 reconnaissance surveys. The species is considered to have a high potential for occurrence within the L406 segment. Species is not expected to occur within the other two project segments.
<i>Asio flammeus</i> Short-eared owl	CSC	Forages in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Nests on dry ground in a depression concealed in vegetation and lined with grasses, forbs, sticks, and feathers, and occasionally in burrows.	Grasslands in the L406 (Dunnigan Hills) and Line 407 East areas and open agricultural areas within all three segments provide suitable habitat. The species is considered to have a moderate potential for occurrence within all three project segments.

Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<i>Athene cunicularia hypugaea</i> Western burrowing owl	CSC	Open, dry, low-growing vegetation, grasslands (annual or perennial), deserts, scrublands, agricultural and rangelands. Suitable habitat may contain trees and shrubs if overall canopy closure is low (< 30%). Subterranean nester associated with burrowing mammals, but may use man-made structures and debris piles. Breeding season is from March through August. Local seasonal migrations. In California, the largest population densities occur in the Central and Imperial Valleys.	Open short grass grasslands, canal levees, and area road cuts with burrowing rodent activity provide suitable nesting habitat; open grasslands and agricultural areas provide suitable foraging habitat. The species was observed along the L406 segment and suitable habitat was observed along the L407 West segment. The species is considered to have a high potential for occurrence within the L406 and L407 West segments of the project; but is not expected to occur within the L407 East segment due to lack of burrowing rodent activity.
<i>Branta canadensis leucopareia</i> Aleutian Canada goose	FD	Smallest subspecies of Canada goose. Nests on the Aleutian islands in Alaska and migrates south to the Sacramento and San Joaquin Valleys in winter. Populations are recovering from historically low numbers attributed to the introduction of the arctic fox to their island breeding grounds. Uses agricultural areas, grasslands, and wetlands. Primarily observed on private ranches near the Stanislaus and San Joaquin Rivers.	Open grassland and agricultural habitats provide suitable wintering habitat. The species is considered to have moderate potential to winter within all segments of the project area.
<i>Buteo regalis</i> Ferruginous hawk	CSC	Breeds in interior western and Great Plains states. Habitats include agricultural flatlands, open prairies, deserts, and semi-arid grasslands featuring scattered trees, rocky mounds or outcrops. May roost or nest on utility structures, trees, shrubs, cliffs, or ground outcroppings. May roost communally and forage in groups on the ground during winter migration (Aug/Sep to Feb/Apr). Winter resident in the Central Valley, Modoc Plateau, and Coastal Ranges of California.	Open grassland and agricultural habitats provide suitable wintering habitat. Due to lack of substantial prey base in Line 407 East segment, this species is considered to have low potential to occur in this segment. Potential to occur in Line 406 and 407 West segments is considered high due to presence of suitable rodent prey base.
<i>Buteo swainsoni</i> Swainson's hawk	CT	Nesting habitat consists of open areas with stands of few, dense-topped trees in juniper-sage flats, riparian areas, and oak savannas. Foraging habitat consist of open grasslands, grain, and alfalfa fields (supporting rodent populations) adjacent to nesting opportunities. In California, the current breeding range includes the Central Valley and the northeastern corner of the state. Winters in South America.	Open grassland and agricultural habitats provide suitable foraging habitat and riparian habitat, scattered isolated trees, and small tree groves provide suitable nesting substrate. Multiple CNDDDB records exist for the species in the project area and it was observed on several occasions during reconnaissance surveys. The species is considered to have high potential for occurrence within all segments.

Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<i>Charadrius montanus</i> Mountain Plover	CSC	Interior valleys and low altitude plains. Ground forages for large insects. Flocks may form in winter on short grass prairies, freshly plowed fields, and in grazed areas. This species is often associated with bare ground, flat topography and burrowing rodents. Breeds out of state and most of the North American population winters in California in the San Joaquin and Sacramento Valleys. Arrives in September, October, and November.	Open grassland and agricultural habitats provides suitable wintering habitat; the species was identified within the L406 segment during late year surveys. The species is considered to have a moderate potential to winter in all project segments.
<i>Circus cyaneus</i> Northern harrier	CSC	Breeding habitat includes fresh water wetlands, coastal brackish wetlands, open wet meadows and grasslands, shrub-steppe, desert sinks, areas along rivers and lakes, and crop fields; nest on the ground. Distributed throughout California's coastal areas, Central Valley, northeastern and Sierra Nevada regions.	Open grassland and agricultural areas within all three segments provide suitable foraging and nesting habitat. The species was observed within all three segments during reconnaissance surveys and is considered to have a high potential for occurrence within the entire project area.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FC/CE	Rare. Nests in riparian forests along broad, lower floodplains of larger river systems. Requires broad, well-developed, low-elevation riparian woodlands of primarily mature cottonwoods and willows. Extirpated from a large portion of the historical range in California with current breeding populations restricted to four major areas (the Sacramento Valley, Kern River, Lower Colorado River and the Prado Basin). Local breeding records occur along the Feather River in Sutter and Yuba counties. Winters in South America and migrates north during May or June. Flies south beginning in August.	Well developed riparian forest habitat within the Line 407 West segment (Sacramento River, Tule Canal, Ride Cut Slough, etc.) provides suitable nesting and foraging habitat; the species is considered to have a moderate potential to occur within this segment. Lack of this type of habitat within the other two project segments precludes the species from occurring.
<i>Elanus leucurus</i> White-tailed kite	CFP	This species was decimated in the 1800s and 1900s by sport shooting. Adaptable. Found in open grasslands and woodlands, meadows, marshes, and other riparian areas. Breeds from January through August and may incubate a second brood. Nests in large shrubs or trees often in riparian corridors where it competes with other raptors for suitable nest sites. May roost communally in winter.	Open grassland and agricultural areas within all three segments provide suitable foraging and nesting habitat. The species was observed within all three segments during reconnaissance surveys and is considered to have a high potential for occurrence within the entire project area.
<i>Empidonax traillii brewsteri</i> Little willow flycatcher	CE	Very rare. Breeds in moist brushy thickets, open second-growth, and riparian woodlands (often with willows or alders) in montane regions (~2000–8000 ft). Less than 200 documented nesting pairs. A lower elevation migrant to riparian areas in the spring and fall. Winters in Central and South America.	Well developed riparian forest and scrub habitat within the Line 407 West segment (Sacramento River, Tule Canal, Ridge Cut Slough, etc.) provides suitable migration habitat; the species is considered to have a moderate potential to occur within this segment. Lack of this type of habitat within the other two project segments precludes the species from occurring.

Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<i>Grus canadensis tabida</i> Greater sandhill crane	CT/CFP	Breeds in wetlands and forages in meadows, irrigated pastures, fields, and marshes. Sandhill cranes roost together at night in shallow water and commonly feed on grains, seeds, aquatic invertebrates, insects, small reptiles, amphibians, and rodents. Nesting pairs occur in Lassen, Modoc, Plumas, Shasta, Sierra, and Siskiyou counties. Historically wintered on California's Central Valley wetlands. Currently winters in lowland areas of Sacramento, San Joaquin, and Imperial Valleys.	Open grassland and agricultural habitats provides suitable wintering habitat. The species is considered to have a moderate potential to winter in all project segments.
<i>Haliaeetus leucocephalus</i> Bald eagle	FD/CE & CFP	Nests in the upper canopy of towering mature trees with open branches or in large stick nests on cliffs near large rivers, lakes, bays, and coastlines. Primarily feeds on fish. California contains resident pairs and winter migrants. Migrants arrive late in fall and winter among dense conifer stands. Wintering areas include large rivers, lakes, reservoirs, and additional habitats along migration routes.	Suitable nesting habitat absent and project area does not intersect species current known breeding distribution. Bald eagles are not expected to breed in project area, but may occur as migrants; large rivers and water bodies in the project area supporting an adequate fish prey base may be used for foraging habitat. The species is considered to have a moderate potential to occur as a migrant in all project segments.
<i>Lanius ludovicianus</i> Loggerhead shrike	CSC	Grasslands interspersed with scattered trees and shrubs. Breeding territories may encompass cultivated cropland, transportation right-of-ways, and shelterbelts. Typically located in scrub deserts, shrub-steppe habitats, western oak savanna, and agricultural landscapes. Shrikes typically hunt from dead trees, tall shrubs, utility wires, and fence posts. They impale their prey on sharp twigs, thorns, or barbed wire. This species has declined across North America. Shrikes in the Central Valley include resident nesting pairs as well as migrants.	Open grassland and agricultural habitats provide suitable foraging habitat and scattered isolated trees and shrubs provide suitable nesting substrate. The species is considered to have moderate potential for occurrence within all project segments.
<i>Numenius americanus</i> Long-billed curlew	CSC	Large shorebird present in small populations in varied habitats. Flocks form during winter and during migration. In winter this species feeds on marine invertebrates along coastal marshes and mudflats. In spring curlews occur on farm fields, prairies, and grassy meadows where they feed on insects (beetles, grasshoppers), worms, and amphibians. Nesting territories are located within interior west open, dry grasslands. Nests may occur in a grassy depression on the ground. Threatened by native grassland reduction and ground nest predation or disturbance.	Open grassland and agricultural habitats provides suitable wintering habitat. The species is considered to have a moderate potential to winter in all project segments.

Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<i>Plegadis chihi</i> White-faced ibis	CSC	Migrant or localized breeder in California's Central Valley. Feeds in emergent wetlands (often freshwater), wet meadows, flooded pastures or croplands. Nest sites are located in dense emergent wetlands. Usually forms small nesting colonies. Nests are constructed as a deep cup of wetland plants slightly raised on a mound or platform within tall vegetation. Declining in California from 1) reduction of extensive marshlands required for nesting and 2) pesticide poisoning. Recently documented population recovery (>6,000) within the Kern NWR (San Joaquin Valley) after marsh restoration efforts. Ranges across southwestern North America.	Open grassland, agricultural areas, and freshwater marsh habitat provide suitable foraging habitat. Nesting habitat in the area is marginal due to narrow and sparse nature of emergent wetland vegetation; breeding is not likely to occur. The species was observed along the L407East segment during reconnaissance surveys. The species is considered to have high potential for occurrence in all project segments.
<i>Progne subis</i> Purple martin	CSC	Nests in open and semi-open areas, including savannas, cultivated lands, fields, parks, pastures. Winters in South America. Found near lakes, marshes, towns and suburbs. Utilizes natural cavities in trees and cliff niches. Additionally will nest in artificial housing, structures, or landscape features. Often forms colonies.	Open grassland and agricultural habitats provide suitable foraging habitat and scattered isolated trees and shrubs provide suitable nesting substrate; anthropogenic structures and nest boxes may also provide nesting opportunities. The species is considered to have moderate potential for occurrence within all project segments.
<i>Riparia riparia</i> Bank swallow	CT	Historically found along large, lowland rivers, and along the coast in Southern California. Breeding ranges are restricted to the Sacramento Valley (Sacramento and Feather Rivers), northeastern California, and small areas of the central and north coast. Inhabits riparian lowlands and nests in colonies. Requires vertical cliffs or soft banks with fine textured soils near streams, rivers, lakes, and ocean for nesting. Suitable nesting habitat declining from flood control measures (river channelization and artificial bank stabilization). Winters in South America.	Vertical cliffs and banks (consisting of friable soils) of area waterways (rivers, sloughs, canals, and creeks) provide suitable nesting substrate. There are several CNDDB records of the species in the project area (records are along the large river systems in the region). The species is considered to have moderate potential for occurrence within all project segments.
<b>Mammalian Species</b>			
<i>Antrozous pallidus</i> Pallid bat	CSC	Commonly occurs as a yearlong resident throughout California at low elevations. A wide variety of habitats are occupied, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Roosts in caves, crevices, mines, and occasionally in hollow trees and buildings.	Anthropogenic structures, riparian habitat, and scattered trees/tree groves provide potential roosting opportunities; buildings and tree hollows provide potential maternity sites. The species is considered to have moderate potential to occur in all three segments of the project.

Table 1. Special-Status Avian and Mammalian Species Assessed for the L406/407 Pipeline Project

Scientific Name Common Name	Listing Status* Federal/State	Species Habitat Requirements and California Distribution	Species Habitat Suitability and Occurrence Potential in Project Area (Pipeline Segments 406, 407 West, and 407 East)
<i>Taxidea taxus</i> American badger	CSC	Uncommon, permanent resident found throughout the State except the extreme North Coast. The species inhabits the drier, open stages of most shrub, forest, and herbaceous habitats where friable soils are present. Prey items include small fossorial rodents, reptiles, insects, birds, eggs, and carrion; ground squirrels are an especially important prey species.	Suitable open grassland habitat present in the L406 segment (Dunnigan Hills); a dead badger was observed along I-505 in this area. Open grassland in the L407 East segment is deemed unsuitable because of the duripan soils and scarcity of ground squirrel prey populations, the species is not expected to occur in this or the L407 West segment.

**Status\***

**US Fish and Wildlife Service**

- FT Federally listed as threatened
- FE Federally listed as endangered
- FC Federal candidate species
- D Federal de-listed species

**California Dept. Fish and Game**

- CT State listed as threatened
- CE State listed as endangered
- CSC State species of concern
- CFP State fully protected species



**Table 2. Wildlife Species Observed in the Project Area During Reconnaissance Surveys.**

- Red-winged blackbird (*Agelaius phoeniceus*)
- Black-crowned night heron (*Nycticorax nycticorax*)
- Great-horned owl (*Bubo virginianus*)
- Mourning dove (*Zenaida macroura*)
- Western meadowlark (*Sturnella neglecta*)
- Red-tailed hawk (*Buteo jamaicensis*)
- Red-shouldered hawk (*B. lineatus*)
- Swainson's hawk (*B. swainsoni*)
- European starling (*Sturnus vulgaris*)
- Cliff swallow (*Petrochelidon pyrrhonota*)
- Northern rough-winged swallow (*Stelgidopteryx serripennis*)
- White-faced ibis (*Plegadis chihi*)
- Common moorhen (*Gallinula chloropus*)
- Western kingbird (*Tyrannus verticalis*)
- Killdeer (*Charadrius vociferus*)
- Mountain plover (*C. montanus*)
- Muskrat (*Ondatra zibethica*)
- Turkey vulture (*Cathartes aura*)
- California ground squirrel (*Spermophilus beecheyi*)
- Great egret (*Ardea alba*)
- American crow (*Corvus brachyrhynchos*)
- Northern harrier (*Circus cyaneus*)
- Yellow-billed magpie (*Pica nuttallii*)
- American kestrel (*Falco sparverius*)
- White-tailed kite (*Elanus leucurus*)
- Western burrowing owl (*Athene cunicularia*)
- Western bluebird (*Sialia mexicana*)
- Black phoebe (*Sayornis nigricans*)
- Golden eagle (*Aquila chrysaetos*)