

## 4.1 Biological Resources

### 4.1.1 Overview

This section describes the regulatory setting applicable to biological resources and the potential direct, indirect, and cumulative effects of the alternatives on biological resources in the study area, including vegetation communities and the plant and wildlife species proposed for incidental take coverage under the TU MSHCP. The study area for assessing the direct and indirect effects of the alternatives is considered concurrent with the Covered Lands. As described in Section 4.1.7, Cumulative Effects, the cumulative effects analysis area for most biological resources generally encompasses the regional area in which vegetation, elevational, geographical, and climate conditions similar to the study area occur, including the wider Tehachapi Uplands ecoregion, and surrounding valley and foothill areas, where adjacent projects have the potential to affect local breeding and/or migratory populations of the other Covered Species (Figure 4.0-1). The cumulative effects analysis area has been expanded for the California condor to include the range of the California population.

#### 4.1.1.1 Regulatory Setting

Activities proposed in the study area would be required to conform to Federal, state, and local laws and regulations that protect biological resources, as described below.

#### Federal Authorities and Administering Agencies

##### Clean Water Act of 1976

The Federal Clean Water Act (CWA) was enacted to protect the nation's waters. Section 404 of the CWA authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), to issue permits regulating the discharge of dredged or fill materials into "navigable waters at specified disposal sites." Waters of the United States are broadly defined in the Code of Federal Regulations (CFR), Title 33, Section 328.3, subdivision (a) to include navigable waters, perennial and intermittent streams, lakes, rivers, and ponds, as well as wetlands, marshes, and wet meadows. The CWA extends additional protection to certain rare and/or sensitive aquatic habitats, including wetlands which occur in the study area. Authorization to discharge dredge or fill materials into these areas, or other waters of the United States, would require the applicant to demonstrate the project has been designed to avoid, minimize and mitigate for all unavoidable effects on water of the United States. In addition, the project would be required to demonstrate it would not result in a net loss of wetland functions or values. Section 4.2, Water Resources, describes the potential effects of the proposed action on wetlands. In this analysis, the term *wetlands* refers to wetland habitat generally, which is a broader category than jurisdictional wetlands regulated under the CWA and described in Section 4.2 of this EIS. This section describes potential effects on wetlands as they relate to habitat for plant or wildlife species.

### Endangered Species Act of 1973

The Federal Endangered Species Act (ESA) (16 U.S. Code [U.S.C] 1531 *et seq.*) was enacted to provide a means by which endangered and threatened species and the ecosystems on which they depend may be conserved. The ESA and the implementing regulations (50 CFR 17.1 *et seq.*) include provisions for the protection and management of federally listed threatened or endangered plants and animals and their critical habitats. Generally, the U.S. Fish and Wildlife Service (Service) regulates upland and freshwater species, and the National Marine Fisheries Service (NMFS) oversees provisions for protection of anadromous, marine, and estuarine species. Section 4 of the ESA requires the Service and/or NMFS to make determinations on whether any species should be listed as an endangered or threatened species and to designate critical habitat for endangered and threatened species (16 U.S.C. 1533). Section 7 of the ESA requires Federal agencies to consult with the Service and/or NMFS and obtain a biological opinion prior to carrying out any Federal program or agency action that may adversely affect threatened or endangered species. The ESA Section 7 consultation and biological opinion process includes an evaluation of whether a project, including issuance of an incidental take permit (ITP) under ESA Section 10, is likely to jeopardize the continued existence of any endangered or threatened species or result in the “destruction or adverse modification” of critical habitat. If a proposed action would result in take of a listed animal species, ESA Section 7 requires the Service to provide an incidental take statement that includes reasonable and prudent measures and terms and conditions implementing those measures, to minimize the effects of such take. Compliance by the Federal agency and any applicant with the incidental take statement exempts take resulting from the proposed action from the prohibition against take in Section 9 of the ESA (16 U.S.C. 1536, 50 CFR 402 *et seq.*). Section 10 of the ESA provides mechanisms for authorizing otherwise prohibited take through the ITP process under Section 10(a)(1)(B). Incidental take is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of otherwise lawful activities.”

Under Section 10(a) of the ESA, an ITP can be obtained provided the permit applicant submits to the Service a conservation plan (often termed a habitat conservation plan [HCP], or a multiple species habitat conservation plan [MSHCP] when addressing more than one species) that satisfies Section 10(a)(2)(A) of the ESA, and provided the Service determines that the habitat conservation plan meets the issuance criteria of Section 10(a)(2)(B) of the ESA. Section 10(a)(2)(B) of the ESA requires the following criteria to be met before the Service may issue an ITP. If these criteria are met, the habitat conservation plan and supporting information are statutorily complete, the applicant is qualified to hold a permit under 50 CFR Part 13, and all other applicable legal requirements are fulfilled, the permit must be issued.

- The taking will be incidental.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure that adequate funding for the habitat conservation plan and procedures to deal with unforeseen circumstances will be provided.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will ensure that other measures that the Service may require as being necessary or appropriate will be provided.

- The Service has received other assurances as may be required that the habitat conservation plan will be implemented.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712) includes provisions for the protection of migratory birds and prohibits the non-permitted take of most migratory birds. Take under the MBTA is defined as to “pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured” (16 U.S.C. 703).

### **Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C 668 – 668d provides specific protection for bald eagles and golden eagles, including a prohibition against take of eagles. Take as defined under the BGEPA, includes: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" 16 U.S.C668c. To *disturb* a bald and golden eagle means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding or sheltering behavior” (50 CFR 22.3). The BGEPA "is not a habitat management law" (72 *Federal Register* [FR] 31132, June 5, 2007), and does not protect habitat per se, other than eagle nests. Therefore, permit coverage for eagles is not required for activities that modify habitat, unless the activities result in take of an eagle under one of the terms in the definition. The take analysis under the BGEPA is much narrower than that provided under the ESA, as take under the BGEPA is defined to mean harm caused by actions directed at eagles themselves and not harm resulting from modifications to eagle habitat. The Service determined through recent rulemaking that ITPs pursuant to the ESA and its implementing regulations may be lawfully issued to cover *take* under the BGEPA (16 U.S.C. 1531 *et seq.*, 50 CFR 17.1 *et seq.*). Therefore, take authorized under an ESA Section 10 ITP does not require an additional permit under the BGEPA.

## **State Authorities and Administering Agencies**

### **California Endangered Species Act**

The California Endangered Species Act (CESA) (California Fish and Game Code, 2050 *et seq.*) is intended to conserve, protect, restore, and enhance any state-protected endangered or threatened species and its habitat and is implemented by the California Department of Fish and Game (CDFG). California Fish and Game Code authorizes the take of endangered, threatened, or candidate species either through a state permit under Section 2081, or through a Federal consistency determination under Section 2080.1, when an applicant has obtained an ITP pursuant to the ESA and that permit is found to be consistent with the CESA.

The California Fish and Game Code lists fully protected species (California Fish and Game Code 3511, 4700, 5056, and 5515). Presently, the take, as defined by state law, of fully protected species

incidental to otherwise lawful development is not permitted under state law. *Take* under state law is defined as actions to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (California Fish and Game Code 86). This definition does not include *harm* or *harass* as included in the Federal ESA definition. Because take (as defined by state law) of fully protected species is prohibited and may not be authorized, all potential take of fully protected species must be avoided.

### **California Fish and Game Code, Section 1600–1616**

Section 1602 of the California Fish and Game Code (Chapter 6, Fish and Wildlife Protection and Conservation) states that it is unlawful for any person to “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake” without first notifying CDFG of that activity. Thereafter, if CDFG determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, before the entity may perform any activity, a Lake or Streambed Alteration Agreement, which includes reasonable measures necessary to protect the resource, may be required from the CDFG to permit the entity to conduct the activities (California Fish and Game Code 1602).

### **Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act (Porter-Cologne) provides regional water quality control boards (RWQCBs) the jurisdiction to regulate discharges to wetlands or waters of the state that may or may not be subject to Federal regulation under the CWA. Similar to the CWA, to obtain a waste discharge requirement from the RWQCB, an applicant must demonstrate a project has been designed to avoid, minimize, and mitigate for unavoidable effects on waters of the state, including wetlands, and that it would not result in a net loss of wetlands.

### **Native Plant Protection Act of 1977**

The Native Plant Protection Act of 1977 (California Fish and Game Code 1900 *et seq.*) authorizes CDFG to designate rare and endangered native plants and provides specific protection measures for state listed species.

### **Local Authorities and Administering Agencies**

Kern County administers the land use requirements for the study area, and prepared the Tejon Mountain Village Environmental Impact Report (TMV EIR) (Kern County 2009a) for the TMV Project (which is one component of the Covered Activities considered in several of the alternatives), in compliance with the California Environmental Quality Act (CEQA). Kern County also administers biological resource protection requirements in the study area, as described below.

### **Kern County General Plan**

The Kern County General Plan includes policies related to threatened and endangered species in the Land Use, Open Space, and Conservation Element, Chapter 1 (Kern County 2009b). The policies outlined in Section 1.10.5 of the Kern County General Plan specify that threatened or endangered plant and wildlife species should be protected in accordance with state and Federal laws, that

discretionary projects should consider the project's effects on biological resources as required by CEQA, and that responsible and trustee wildlife agencies should be consulted and their comments considered when reviewing discretionary projects subject to CEQA.

### **Kern County Oak Tree Policies**

The Kern County General Plan includes policies related to oak resources in the Land Use, Open Space, and Conservation Element, Chapter 1 (Kern County 2009b). The policies specify that large oak trees and oak woodlands shall be protected where possible (and that oak resources be incorporated into project developments) and that oak tree woodlands be conserved for scenic beauty and environmental value. Based on the standards outlined in Section 1.10.10 of the Kern County General Plan, the County regulates oak woodland (defined as having oak tree canopy cover of at least 10%) and/or trees with trunks that are at least 12 inches in diameter as measured at 4.5 feet above natural ground. On properties with at least 10% oak tree canopy cover, Section 1.10.10 states that projects must retain 30% of the canopy cover.

#### **4.1.1.2 Methods**

The analysis of direct, indirect, and cumulative effects on biological resources is considered in terms of whether each alternative would substantially affect a species and/or their habitat, including critical habitat. For the California condor and its critical habitat, this evaluation considers the loss of foraging habitat, effects of habituation to human structures and activities, risk of collisions with powerlines and/or artificial structures, and ingestion of microtrash. Unless otherwise specified, the analysis in this EIS is specific to the southern California subpopulation of the California condor. For the other Covered Species, this evaluation considers the loss of modeled habitat, potential effects on known species occurrences in the Covered Lands (where applicable), as well as the overall range and rarity of the species in relation to the potential loss of modeled habitat. Generally, the magnitude of effects identified in this section is also considered in terms of whether an alternative would substantially reduce the number of acres or substantially degrade habitat for special-status species, or unique or sensitive habitats, or if it would exceed a standard or criteria provided by another Federal, state or local statute specific to biological resources, such as the California Fish and Game Code or Federal CWA.

The analytical framework used to evaluate potential biological effects is described below.

#### **Analytical Framework for Biological Effects**

For purposes of the analysis of the potential effects of the alternatives on biological resources, the land use types in the study area are divided into the following analytical categories: Open Space (permanently protected areas where Existing Ranch Uses or Plan-Wide Activities would occur), Development Areas (where Commercial and Residential Development Activities would occur), and Other Lands (which consists of Not-A-Part Inholdings [i.e., lands owned by other entities, including the California Department of Water Resources (DWR) and private entities] and areas where existing uses not covered under the TU MSHCP [i.e., mineral extraction and cemetery uses] would occur), as described below. Refer to Appendix B for a more detailed description of land use assumptions considered in this Supplemental Draft EIS.

## Open Space

Open space lands consist of permanently protected areas within which no development would occur. Existing Ranch Uses or Plan-Wide Activities would continue to occur in these areas, including ranching, grazing, and other uses, such as repair and maintenance of roads and utilities, film production, ancillary structures, back-country cabins, and private and passive public recreation. As described in Chapter 2, Proposed TU MSHCP and Alternatives, different restrictions would apply to the open space areas under the different alternatives. Permanent ground disturbance associated with Plan-Wide Activities in open space areas would be limited to 200 acres under the Proposed TU MSHCP Alternative, the Condor Only HCP Alternative, and the CCH Avoidance MSHCP Alternative. There would be no specific limitation on ground disturbance in open space in the study area under the No Action Alternative and Kern County General Plan Buildout Alternative. Because the location of permanent disturbance is unknown for all alternatives, potential effects on biological resources from ground disturbance in these areas are analyzed qualitatively.

## Development Areas

Commercial and Residential Development Activities would consist of permanent ground disturbance that would occur as a result of future commercial, residential, and related community development in the study area under each alternative. As described in Chapter 2, Proposed TU MSHCP and Alternatives, no commercial or residential development would occur under the No Action Alternative. For the other alternatives, development levels and locations would vary, although the exact location of the development footprint is not known. To assess the potential effects on biological resources from Commercial and Residential Development Activities, each of the alternatives identifies a maximum Disturbance Area that would be associated with development activities. For the Proposed TU MSHCP Alternative, Condor Only HCP Alternative, and Kern County General Plan Buildout Alternative, a larger Development Envelope within which those disturbance activities may occur was also identified. For the CCH Avoidance MSHCP Alternative, the Development Envelope was assumed to be the same as the Disturbance Area, given the nature and location of that alternative, which would not include the TMV Project, and would not allow for flexibility in siting proposed development. The larger Development Envelope is considered a conservative approximation of potential ground-disturbance effects on biological resources given that it is larger than the footprint anticipated to occur as a result of development. Of note, a conservative Development Envelope is used for analysis of effects on biological resources only. The Disturbance Area is used to assess potential effects on other resource areas because these effects are primarily related to density-dependent or population-based effects where use of the larger footprint would unrealistically distort the analysis.

For the Proposed TU MSHCP and Condor Only HCP Alternatives, a Development Envelope of 8,817 acres was used to assess potential effects on biological resources. This Development Envelope is slightly larger than the Development Envelope used by Kern County to assess the effects of the TMV Project, which used a Development Envelope of 7,860 acres in the TMV EIR (Kern County 2009a), because the development areas under consideration in this Supplemental Draft EIS are broader. Specifically, the Development Envelope considered in this Supplemental Draft EIS includes Development Envelopes associated with the TMV Planning Area (i.e., TMV Specific Plan Area [7,860 acres], Oso Canyon [506 acres], and West of Freeway [170 acres]), the Lebec/Existing Headquarters area (265 acres), and the Tejon Castac Water District (TCWD) parcel, including existing facilities, future expansion and maintenance areas (16 acres).

Per the terms of the proposed TU MSHCP, if Oso Canyon development were to proceed in the future, the Disturbance Area in Oso Canyon would need to be "borrowed" from the TMV Specific Plan Area. As such, the actual Disturbance Area under the Proposed TU MSHCP and Condor Only HCP Alternatives would be limited to 5,533 acres, 5,252 acres of which would be located in the TMV Planning Area, 265 acres in the Lebec/Existing Headquarters Area, and 16 acres in the TCWD parcel.

For the CCH Avoidance MSHCP Alternative, the anticipated Disturbance Area was based on the Kern County General Plan land use designations within the boundaries of development allowed under the Ranchwide Agreement (i.e., Tejon Ranch and outside the boundaries of California condor critical habitat, as described below).

For the Kern County General Plan Buildout Alternative, the land disturbance calculation was based on the Kern County General Plan land use designations without the restrictions of the Ranchwide Agreement or California condor critical habitat. Land disturbance based on Kern County General Plan land use designations was calculated as follows:

- **Density-Based Designations.** Planned communities in locations identified for development under each alternative that have designated development densities in the general plan are assumed for purposes of this Supplemental Draft EIS to result in permanent ground disturbance for the entire acreage in the planned communities (includes Kern County land use designations 3.1, 4.1, 4.3, 5.3, 5.4, 5.7, 5.8, 6.2, and 6.3). (Refer to Figure 2-3 for locations of these designations under the alternative analyzed in this Supplemental Draft EIS.)
- **Rural Use Designations.** Rural large lot development in portions of the study area not identified as open space or as Other Lands are assumed for purposes of this Supplemental Draft EIS to be developed as either 80-acre or 20-acre lots, depending on the Williamson Act status of the lands (areas depicted with Kern County land use designations 8.2, 8.3 and 8.5; see Figure 2-3). No parcelization or lot development plans are available for these areas, so an average permanent land Disturbance Area of 2 acres is assumed for these rural large lots to include construction of residential and ancillary structures, landscaped areas, and driveways. It is also assumed that the Disturbance Areas in each of these large lots would be sited to avoid the take of any federally listed species.

For all alternatives, there are 145 acres of land in rural land use designations in the Lebec/Existing Headquarters Area. These 145 acres are outside the 2-acre Disturbance Area assumed for each lot within these rural land use designations. It is assumed that development would not occur on these 145 acres, but that these areas would not be permanently protected as open space either. For the Kern County General Plan Buildout Alternative, there are an additional 85,262 acres of land in rural land use designations that would not be disturbed. Under the Kern County General Plan Buildout Alternative, these 85,262 acres are considered to be Restricted Open Space. This means that no new development is presumed to occur in these areas. Ongoing uses, such as grazing, would continue in these areas consistent with existing Kern County practices and existing physical constraints, such as available water supply. These areas would be available for use as mitigation lands on a project-by-project basis. Lands set aside for such project-by-project mitigation may be managed for the benefit of Covered Species with appropriate funding and management. For purposes of analysis of effects related to wildlife movement and connectivity, these lands are analyzed in the context of overall reserve design considerations.

## Other Lands

Other Lands consist of lands not owned by Tejon Ranchcorp (TRC), existing mineral extraction areas (including the National Cement and La Liebre mineral extraction areas), and the Veterans Cemetery. Other Lands consist of 6,890 acres for the Proposed TU MSHCP, Condor Only HCP, CCH Avoidance MSHCP, and Kern County General Plan Buildout Alternatives. For the Not-A-Part Inholdings, each of the alternatives (excluding the No Action Alternative) include development on 16 acres of a 35-acre parcel owned by DWR on which TCWD would be provided coverage for the operations and maintenance and any future expansion of its water supply infrastructure. No other activities on these lands are included for consideration in any of the alternatives or analyzed in this Supplemental Draft EIS.

Table 4.1-1 summarizes the total acreages in the study area that would be in open space or used for Commercial and Residential Development Activities under each alternative.

**Table 4.1-1. Acreage of Land in Open Space or Developed Areas under all Alternatives**

Alternative	Study Area (acres) <sup>1</sup>	Open Space (acres)	Assumed Development Envelope (acres)	Assumed Disturbance Area (acres)
No Action Alternative	134,996	106,317 <sup>2</sup>	0	0
Proposed TU MSHCP Alternative/Condor Only HCP Alternative	134,996	126,034 <sup>3</sup>	8,817	5,553
CCH Avoidance MSHCP Alternative	134,996	130,339 <sup>4</sup>	4,496	4,496
Kern County General Plan Buildout Alternative	134,996	117,774 <sup>5</sup>	14,934	12,142

<sup>1</sup> Acreages in this column are based on the total study area (141,886 acres) less the acreage in Other Lands (including Not-A-Part Inholdings, mineral extraction areas, and the Veterans Cemetery [6,890 acres]).

<sup>2</sup> Permanently conserved open space includes 93,522 acres of Established Open Space and 12,795 acres of Existing Conservation Easement Areas. The TMV Planning Area Open Space would not be permanently protected, because without development, the Ranchwide Agreement requirements to deed restrict the TMV Planning Area Open Space would not be triggered.

<sup>3</sup> Permanently conserved open space includes 93,522 acres of Established Open Space, 12,795 acres of Existing Conservation Easement Areas, and 19,717 acres of TMV Planning Area Open Space. The TMV Planning Area Open Space acreage is less than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-7 (i.e., 23,001 acres) because of the greater Development Envelope area considered to assess biological effects.

<sup>4</sup> Permanently conserved open space includes 93,522 acres of Established Open Space preservation, 12,795 acres of Existing Conservation Easement Areas, and 24,022 acres of TMV Planning Area Open Space.

<sup>5</sup> Permanently conserved open space includes 12,795 acres of Existing Conservation Easement Areas and 19,717 acres of TMV Planning Area Open Space (for a total of 32,512 acres of permanently conserved open space). In addition, 85,262 acres of Restricted Open Space would be available for mitigation and conservation on a project-by-project basis. The TMV Planning Area Open Space acreage is less than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-6 (i.e., 23,001 acres) because of the greater Development Envelope area considered to assess biological effects.

## 4.1.2 No Action Alternative

### 4.1.2.1 Vegetation Communities

#### Commercial and Residential Development Activities

No Commercial and Residential Development Activities would occur under the No Action Alternative and there would be no direct or indirect effects on vegetation communities.

#### Existing Ranch Uses

Under the No Action Alternative, Existing Ranch Uses would continue to occur in similar areas and at similar levels. Grazing, the most extensive existing use in the study area, could damage vegetation in areas where livestock congregate and trample vegetation, or where overgrazing occurs. For some vegetation communities (e.g., wetlands and riparian areas), congregating and trampling may degrade habitat value and water quality, and overgrazing could result in the suppression of native herbaceous species (including special-status herbaceous plants) and natural recruitment (e.g., oaks). For other vegetation communities, depending on seasonality and level of intensity, in the absence of native ungulate browsers and grazers, cattle grazing can be a benefit in maintaining relative distribution of shrublands and grasslands by checking the expansion of nonnative annual plants. Moreover, animal hooves could increase litter turnover and nutrient recycling by grinding dead plant material into the soil and increasing seed-soil contact (Menke 1992, Edwards 1992, U.S. Forest Service 2004). Thatch removal is important early in the growing season, so that native seeds stand a better chance of germinating.

The best management practices (BMP) and use restrictions required pursuant to the Ranchwide Agreement, as currently set forth in the Interim Ranchwide Management Plan (RWMP) (Tejon Ranch Company 2009) and described in Chapter 2, Proposed TU MSHCP and Alternatives, would continue to be implemented under the No Action Alternative and would include provisions to minimize the effects of grazing on the landscape in general and sensitive communities in particular, such as the required rotation of livestock across Tejon Ranch using fences, distribution of salt and mineral supplements away from water sources, additional distribution of a variety of water sources across the land, and seasonal rotation of livestock to lower elevations during winter and higher elevations during summer. However, under the No Action Alternative, because development would not occur, the Ranchwide Agreement requirements to deed restrict the TMV Planning Area Open Space would not be triggered. As such, the portions of open space in the TMV Planning Area would not be subject to the Ranchwide Agreement use restrictions and BMPs, and neither the provisions provided in the RWMPs specific to grazing management nor the in perpetuity deed restrictions would be required in this area. The remaining areas would continue to be limited to existing uses (no commercial or residential development) and it is anticipated that historic BMPs would occur on the entire ranch, although implementation of those measures cannot be guaranteed.

Existing Ranch Uses that could result in ground disturbance, such as repair or maintenance of ancillary ranch structures or back-country cabins, could also affect vegetation communities. Construction or maintenance activities with the potential to result in temporary or permanent effects on special-status vegetation communities (e.g., wetlands, oak woodlands) would be subject to approval by Federal, state or local jurisdictions, which would reduce the potential for substantial, unmitigated effects on those vegetation communities. In addition, construction-related BMPs

prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize the potential for erosion during construction, which could benefit vegetation communities (for example, see Appendix J, TMV Specific and Community Plan Mitigation Monitoring and Reporting Program). Similarly, BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP), such as the requirement that a site evaluation be performed prior to any ground-disturbing activities to avoid sensitive resources to the extent practical, would continue to be implemented and would reduce potential effects associated with Existing Ranch Use on sensitive vegetation communities, including riparian and stream areas. Other Existing Ranch Uses, such as film production and private recreation, are expected to continue to occur mostly in existing disturbed areas, roads, or trails, and would generally not affect vegetation communities.

The continuation of Existing Ranch Uses under the No Action Alternative would result in minor effects on vegetation communities, all of which would be reduced through the implementation of the BMPs and use restrictions required pursuant to the Ranchwide Agreement and through compliance with other Federal, state or local regulations. Existing Ranch Uses under the No Action Alternative would not degrade unique or sensitive habitats, or exceed a standard or criteria provided under another Federal, state, or local statute.

#### **4.1.2.2 Wildlife and Plant Species**

##### **California Condor**

###### **Commercial and Residential Development Activities**

No Commercial and Residential Development Activities would occur under the No Action Alternative and there would be no direct or indirect effects on the California condor from Commercial and Residential Development Activities.

###### **Existing Ranch Uses**

As noted above, under the No Action Alternative, Existing Ranch Uses would continue to occur in similar areas and at similar levels as they do currently. Grazing activities would continue under this alternative, which would benefit the condor by supplying an ongoing source of food. Hunting, although not a Covered Activity, would also continue. Other ongoing activities, such as road and utility construction, repair, and maintenance, ancillary ranch activities, film production, back-country cabin use, and private recreation, would be conducted to avoid effects on condors. Specifically, BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented to ensure that uses that could result in the generation of microtrash or the disturbance of roosting or feeding condors would not occur. For example, Section 3.2.13.4, Hunting Cabins, in the Interim RWMP provides that TRC require back-country cabins be maintained in a neat and orderly condition, ensuring that trash and materials do not accumulate in a manner that becomes an attractant or threat to native wildlife, such as condors. Similarly, per the Ranchwide Agreement use restrictions and BMPs, private recreation would be confined to existing ranch roads and trails and would not be expected to affect California condors or condor foraging and roosting habitat. The BMPs and use restrictions in the Ranchwide Agreement further require that new utility infrastructure or other structures be sited so as to identify and avoid or minimize impacts to sensitive resources, subject to approval by various

agencies. Finally, as described in Chapter 2, Proposed TU MSHCP and Alternatives, no new overhead utilities and related structures would be constructed in the Condor Study Area under the No Action Alternative.

While the level of condor activity on the ranch is expected to increase as more condors are released into the wild, it is anticipated that the potential benefits of Existing Ranch Use (e.g., cattle grazing) on California condors would continue, and that potential adverse effects would continue to be avoided through implementation of the BMPs and use restrictions required pursuant to the Ranchwide Agreement. The overall functions and values of existing foraging habitat for condors in the Covered Lands would be expected to continue, and the No Action Alternative would not would substantially affect condors or adversely affect their critical habitat.

## **Other Covered Species**

### **Commercial and Residential Development Activities**

No Commercial and Residential Development Activities would occur under the No Action Alternative and there would be no direct or indirect effects on other Covered Species from Commercial and Residential Development Activities.

### **Existing Ranch Uses**

As described in Section 4.1.2.1, Vegetation Communities, Existing Ranch Uses under the No Action Alternative have the potential to damage vegetation and degrade habitat or water quality in areas where livestock congregate, or suppress native herbaceous species (including covered plant species) in areas where the landscape is overgrazed. Ground-disturbing activities have the potential to affect vegetation and habitat quality through erosion, compaction, and sedimentation of surface waters, or degradation of riparian or wetland habitats, which, in turn could affect species using those areas for breeding or foraging. Potential effects on wildlife movement and connectivity from Existing Ranch Uses are described in the Section 4.1.2.3, Wildlife Movement and Connectivity, below.

Other Covered Species typical of grassland communities (i.e., areas where the majority of concentrated grazing would continue to occur) are the most likely to be affected by Existing Ranch Uses under the No Action Alternative. Raptors, such as the American peregrine falcon, burrowing owl, and golden eagle, may benefit from grazing to the extent that grazing could maintain low vegetation cover and make prey more visible. Western spadefoot may hibernate in grasslands that are close to aquatic breeding sites, and could be subject to injury or mortality if trampled or crushed by livestock, or if habitat is substantially degraded. However, grazing may alternatively benefit western spadefoot breeding sites by reducing vegetation and allowing for long-duration inundation to support the development of tadpoles. Birds, amphibians, and reptiles that fulfill one or more of their life history requirements in riparian areas, such as least Bell's vireo, purple martin, southwestern willow flycatcher, western yellow-billed cuckoo, yellow warbler, two-striped garter snake, Tehachapi slender salamander, and western spadefoot, could also be directly affected by livestock use of water sources, or indirectly affected by sedimentation, erosion, or other adverse water quality affects associated with grazing and/or limited ground disturbance. Finally, plant species could be trampled or otherwise damaged by ground-disturbing activities.

The BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the No Action Alternative and

would include provisions to minimize the effects of grazing on the landscape in general and sensitive communities in particular, such as the required rotation of livestock across Tejon Ranch using fences, distribution of salt and mineral supplements away from water sources, additional distribution of a variety of water sources across the land, and seasonal rotation of livestock to lower elevations during winter and higher elevations during summer (Tejon Ranch Company 2009a). These BMPs would minimize effects on other Covered Species typical of grassland communities from grazing. Potential effects on riparian and wetland habitats associated with Existing Ranch Uses that could result in ground disturbance are expected to be minor, and would be required to comply with relevant state and local grading requirements. Ranchwide Agreement use restrictions and BMPs, such as the requirement that a site evaluation be performed prior to any ground-disturbing activities to avoid sensitive resources to the extent practical, would also reduce potential effects on special-status or unique or sensitive vegetation communities and the wildlife typical of those communities. Other Existing Ranch Uses, such as road and utility repair and maintenance, ancillary ranch activities, film production, and private recreation, are expected to continue to occur mostly in existing disturbed areas, roads, or trails, and would generally not affect other Covered Species.

The continuation of Existing Ranch Uses under the No Action Alternative would result in minor effects on other Covered Species, all of which would be reduced through the implementation of the use restrictions and BMPs required pursuant to the Ranchwide Agreement, and through compliance with other Federal, state or local regulations. Existing Ranch Uses under the No Action Alternative would not result in more than a minor loss of modeled habitat for the other Covered Species, and would not be anticipated to affect known occurrences of any of these species.

## **Other Special-Status Species**

### **Commercial and Residential Development Activities**

Under the No Action Alternative, no Commercial and Residential Development Activities would occur and there would be no direct or indirect effects on any other special-status species from Commercial and Residential Development Activities.

### **Existing Ranch Uses**

Under this alternative, Existing Ranch Uses would continue to occur in similar areas at similar levels, as restricted by the Ranchwide Agreement. Potential effects on special-status species and their habitat would be the same as those described in Section 4.1.2.1, Vegetation Communities, above, as those communities relate to the habitat types of individual species.

## **4.1.2.3 Wildlife Movement and Connectivity**

### **Commercial and Residential Development Activities**

Under the No Action Alternative, no Commercial and Residential Development Activities would occur and there would be no direct or indirect effects on wildlife movement and connectivity from Commercial and Residential Development Activities.

## Existing Ranch Uses

As described in Chapter 2, Proposed TU MSHCP and Alternatives, a network of mostly unpaved roads used for the grazing operation and for access to hunting and other recreational activities cross the study area. Two paved roads, providing access to the California Aqueduct and to the National Cement plant occur in the study area. In addition, ranch dirt roads are occasionally constructed and/or existing roads are relocated to serve Existing Ranch Uses. Use, repair, and maintenance of these roads would continue as an Existing Ranch Use under the No Action Alternative.

In principle, roads can have a wide variety of effects on wildlife movement, habitat connectivity, and the value of adjacent areas depending on their size, frequency of travel and context. The *road effect zone* (Foreman and Sperling et al. 2003) is a concept describing direct and indirect effects on species and their habitats within an area extending various distances (depending on the species) from the actual footprint of a road. Factors such as wind, water movement, noise, geology, and topography also influence the extent of the road effect zone depending on the species present and the localized conditions. Species movement across both paved and dirt roads can be adversely affected as a result of direct mortality from vehicle strikes and loss of habitat connectivity. A direct loss of habitat may occur when new roads replace existing habitat that is of value to a species. The loss of genetic exchange, loss of access to habitat, spread of invasive, nonnative species (which can reduce habitat value for some species as a result of a reduction in food availability, increased competition for food resources and other habitat components [i.e., shelter sites]), and loss of food resources, are examples of other general effects that result from existing and new roads. The size and amount of unfragmented large habitat blocks (which generally hold more habitat value than small habitat blocks) decrease with the addition of new roads, and the edges of unfragmented habitat blocks may provide less habitat value (depending on species) than the center of habitat blocks. Habitat value tends to be greater the farther a given species and/or population occurs from roads (Foreman and Sperling et al. 2003).

The current extent and use of roads in open space areas in the study area is minimal. Nevertheless, the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP), which would continue to be implemented under the No Action Alternative, including provisions which would reduce the potential for these roads to adversely affect wildlife movement and habitat connectivity. Specifically, Sections 3.2.2, Farming, and 3.2.7, Fuel Management, in the Interim RWMP, provide a compiled list of BMPs that are currently implemented to protect and preserve conservation values on the ranch in areas subject to road use, maintenance, or repair. These include, for example, evaluating proposals for road relocation to ensure they avoid effects on sensitive resources; implementing a dust control plan to reduce particulate matter emissions on well-traveled roads; and maintenance of berms on dirt roads to handle minor stormwater flows (Tejon Ranch Company 2009). Given the limited existing road network on the Covered Lands, and the implementation of these use restrictions and BMPs, it is anticipated that potential effects on wildlife movement and connectivity from Existing Ranch Uses would be minor.

Other Existing Ranch Uses, such as utility lines and fences, may affect bird (i.e., collisions) or wildlife movement across the study area. As described above, no new overhead utilities would be constructed in the Condor Study Area under the No Action Alternative, and the BMPs and use restrictions required pursuant to the Ranchwide Agreement would require that any new utility infrastructure or other structure be sited so as to identify, and avoid or minimize effects on sensitive

resources, subject to approval by various agencies. These measures would ensure potential effects on bird movement from utility infrastructure would generally be minor and the same as existing conditions. Similarly, the Interim RWMP includes several BMPs to minimize the effect of fences on wildlife movement, including allowing the construction of new fencing only if it is determined to be reasonably necessary for operations purposes, and implementing “wildlife-friendly” fencing of the type and design necessary to allow for passage of wildlife, where possible (Tejon Ranch Company 2009). The Ranchwide Agreement requires that all subsequent RWMPs similarly reflect BMPs that protect the conservation values of the land and that such management standards and use restrictions be carried through in the conservation easements required by the Ranchwide Agreement.

For these reasons, the continuation of Existing Ranch Uses under the No Action Alternative would result in minor effects on wildlife movement and connectivity, all of which would be reduced through the implementation of BMPS and use restrictions required pursuant to the Ranchwide Agreement.

### **4.1.3 Proposed TU MSHCP Alternative**

#### **4.1.3.1 Vegetation Communities**

Table 4.1-2 summarizes the potential effects on vegetation communities from the Proposed TU MSHCP Alternative. Permanent and temporary direct and indirect effects resulting from Commercial and Residential Development Activities and Plan-Wide Activities are discussed below.

#### **Commercial and Residential Development Activities**

Construction associated with Commercial and Residential Development Activities under the Proposed TU MSHCP Alternative would result in moderate effects on vegetation communities. As shown in Table 4.1-2, 8,387 acres (about 6%) of existing upland communities and 31 acres (2%) of riparian/wetland/wash communities would be permanently affected by construction-related ground disturbance. Of these, many of the upland communities (including alluvial scrub, native grasslands, and oak savannahs and oak woodlands) and all of the riparian/wetland/wash communities are considered to be special-status by Federal, state, or local resource agencies. However, approximately 96% of total scrub vegetation, 94% of chaparrals, 98% of grasslands (excluding disturbed/nonnative grasslands), 94% of savannahs, 95% of woodlands, 98% of conifer forest, 84% of riparian/wetland, 92% of riparian woodland, and 99% of wash communities would be conserved in open space areas under this alternative (Table 4.1-2). Approximately 232 acres (98%) of agricultural land, a nonnative land cover, would be permanently disturbed by Commercial and Residential Development Activities.

Approximately 145 acres of special-status uplands would be located in rural large lot developments assumed to be developed as either 80-acre or 20-acre lots under the Proposed TU MSHCP Alternative (Section 4.1.1.2, Methods - Analytical Framework for Assessing Effects on Biological Resources). For the purposes of this analysis, this area is not included in the open space, development area, or other lands categories described in Section 4.1.1.2, Methods. These areas would be in private lots and uses would be required to be consistent with those allowed in the Kern County General Plan (Kern County 2009b). It is assumed however, that permanent ground

disturbance associated with development would not be allowed, and that adverse effects on vegetation would not occur.

Under this alternative, 1,773 acres of development-related fuel modification activities (e.g., vegetation clearing around existing structures) could occur. Because specific development plans are not available for this alternative, the specific locations of fuel modification zones cannot be determined. While it is likely that most of these activities would occur in the Development Envelope, and not in permanently protected open space, this analysis considers potential effects on vegetation communities should fuel modification measures extend into open space areas. Also, because the specific location of this fuel modification zone is unknown, an acreage breakdown of effects on specific vegetation communities associated with fuel modification cannot be calculated. In general, it is anticipated that fuel modification effects would be roughly proportional to the distribution of vegetation communities in the study area, with about 98% occurring in upland communities, about 1% occurring in riparian/wetland/wash communities, and about 1% occurring in agricultural lands. To minimize the potential effect of fuel modification on vegetation communities under the Proposed TU MSHCP Alternative, preactivity surveys for special-status plants would be conducted in conjunction with fuel modification activities. Fuel modification associated with development activities would extend up to 200 feet into open space areas and only mowing and thinning would be permitted in these portions of the fuel modification areas. Thinned areas would not be markedly different in appearance from the adjacent natural areas not subject to thinning. Fuel modification on 1,773 acres would not be expected to substantially affect vegetation communities or to degrade existing habitat.

**Table 4.1-2. Potential Effects on Vegetation Communities—Proposed TU MSHCP Alternative**

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained as Open Space <sup>4</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Upland Communities</b>			
<b>Scrubs</b>			
Alluvial scrub	36	26	10
Mojavean scrub	6,951	6,951	0
Saltbush/buckwheat scrub	290	257	33
Scrub	564	281	283
<i>Total Scrubs</i>	<i>7,841</i>	<i>7,515</i>	<i>326</i>
<b>Chaparrals</b>			
Brewer's oak scrub	2,720	2,719	1
Chaparral	11,050	10,370	678
Scrub oak	641	506	135
Undetermined chaparral	4	4	0
<i>Total Chaparrals</i>	<i>14,415</i>	<i>13,599</i>	<i>814</i>
<b>Grasslands</b>			
Disturbed/nonnative grassland	6,411	4,197	2,214
Grassland	17,387	17,164	170
Native grassland	1,146	1,045	101
<i>Total Grasslands</i>	<i>24,944</i>	<i>22,406</i>	<i>2,485</i>

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained as Open Space <sup>4</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Savannahs</b>			
Black oak savannah	29	29	0
Blue oak savannah	5,114	5,050	65
Canyon oak savannah	432	432	0
Gray pine savannah	64	64	0
Interior oak savannah	276	276	0
Mixed oak savannah	11,997	11,965	1
Oak savannah	5,603	3,640	1,963
Undetermined savannah	678	678	0
White oak savannah	8,927	8,902	17
<i>Total Savannahs</i>	<i>33,120</i>	<i>31,036</i>	<i>2,046</i>
<b>Woodland</b>			
Black oak woodland	2,701	2,543	158
Blue oak woodland	9,089	7,192	1,897
California buckeye woodland	338	338	0
Canyon oak woodland	6,193	6,051	142
Gray pine woodland	109	109	0
Interior oak woodland	761	740	21
Mixed oak woodland	28,086	27,668	374
Oak woodland	147	141	6
Pinyon pine woodland	285	255	30
Undetermined woodland	153	153	0
White oak woodland	874	853	15
<i>Total Woodland</i>	<i>48,736</i>	<i>46,043</i>	<i>2,643</i>
<b>Conifer Forest</b>			
Conifer/mixed oak	912	839	73
Incense-cedar stand	4	4	0
Intermixed conifer	1,059	1,059	0
White fir stand	320	320	0
White fir/mixed oak	1,661	1,661	0
<i>Total Conifer Forest</i>	<i>3,956</i>	<i>3,883</i>	<i>73</i>
<b>Total Upland Communities</b>	<b>133,012</b>	<b>124,482 (94%)</b>	<b>8,387 (6%)</b>
<b>Riparian/Wetland/Wash Communities</b>			
<b>Riparian/Wetland</b>			
Riparian scrub	76	55	5
Riparian/wetland	10	4	2
Wetland	281	195	22
Lake	336	335	0
<i>Total Riparian/Wetland</i>	<i>703</i>	<i>589</i>	<i>29</i>

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained as Open Space <sup>4</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Riparian Woodland</b>			
Riparian woodland	43	38	1
Oak riparian	16	16	0
<i>Total Riparian Woodland</i>	<i>59</i>	<i>54</i>	<i>1</i>
<b>Wash</b>			
Desert wash/riparian/seeps	841	841	0
Wash	22	20	1
<i>Total Wash</i>	<i>863</i>	<i>861</i>	<i>1</i>
<b>Total Riparian/Wetland/Wash Communities</b>	<b>1625</b>	<b>1504 (93%)</b>	<b>31 (2%)</b>
<b>Nonnative Land Covers</b>			
Agriculture	232	5	227
Developed	127	38	88
<b>Total Nonnative Land Covers</b>	<b>359</b>	<b>43 (12%)</b>	<b>315 (88%)</b>
<b>Total</b>	<b>134,996<sup>3</sup></b>	<b>126,029 (93%)<sup>4</sup></b>	<b>8,733 (7%)<sup>5,6</sup></b>

<sup>1</sup> Slight differences between total acreages presented in Tables 4.1-1 and 4.1-2 may occur due to rounding and small slivers in shapefiles in the geographic information system (GIS) analysis of vegetation communities (e.g., sliver polygons occur when different GIS coverages overlap but do not match exactly). These discrepancies are minor and do not alter the overall conclusions of the analysis or comparison of the relative merits of various alternatives and scenarios.

<sup>2</sup> The quantitative analysis of effects on vegetation communities does not include 200 acres of ground disturbance associated with Plan-Wide Activities under the Proposed TU MSHCP Alternative, which are analyzed qualitatively, or the 145 acres of non-disturbed areas associated with rural lots (Section 4.1.1.2, Methods - Analytical Framework for Assessing Effects on Biological Resources). The 145 acres in rural lots are regarded as effect- and conservation-neutral since it is undetermined what uses would be proposed on rural lots by individual landowners and quantitative analysis of effects or conservation in these areas is not possible.

<sup>3</sup> Acreages in this column are based on the study area encompassing 134,996 acres, or the total study area (141,886 acres) less the acreage in Other Lands (6,890 acres).

<sup>4</sup> Acreages in this column are based on an assumed acreage of permanently conserved open space of approximately 126,034 total acres, which includes 12,795 acres of Existing Conservation Easement Areas, as well as the TU MSHCP Mitigation Lands, including 93,522 acres of Established Open Space and 19,717 acres of TMV Planning Area Open Space. The TMV Planning Area Open Space acreage is less than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-6 (i.e., 23,001 acres) because of the greater Development Envelope area analyzed to assess biological effects. TMV Planning Area Open Space also includes 1,773 acres of vegetation clearing/thinning for fuel modification in accordance with the fire protection plan (Dudek 2008a) developed for the TMV Project.

<sup>5</sup> Development includes Commercial and Residential Development Activities in the TMV Planning Area and Lebec/Existing Headquarters Area. Acreages in this column are based on a total Development Envelope of 8,817 acres for this alternative. See Section 4.1.1.2, Methods - Analytical Framework for Assessing Effects on Biological Resources, for a discussion of how the Development Envelope was developed for each alternative and how it applies to the effects analysis in this section.

<sup>6</sup> The analysis assumes 75% avoidance of effects on riparian/wetland vegetation communities. The total development acres for each alternative reflect this assumption, as well as the development acres for riparian vegetation communities and species models that are based on these riparian communities. The total development acreage presented in this table for the Proposed TU MSHCP Alternative is 84 acres less than the total development acreage presented in Section 4.1.1.2, Methods, for this reason. This is a conservative assumption, as the CWA 404(b)(1) alternatives analysis submitted to USACE for the TMV Project shows avoidance of 100% of the federally jurisdictional wetland areas and avoidance of 97% of the state and Federal jurisdictional waters over all (Kern County 2009a, April 15, 2011 Alternatives Analysis; Kern County 2009, November 13, 2009 Permit Application to CDFG).

Finally, increased human presence and introduction of urban-type uses associated with development could degrade vegetation communities supporting Covered Species and other special-status species. These indirect effects are discussed in the analysis of effects on species presented below.

All development under the Proposed TU MSHCP Alternative would be subject to project-specific approvals, and permanent or temporary effects on special-status vegetation communities, such as wetlands (regulated by USACE and the RWQCB) or oak woodlands (protected under Kern County oak tree ordinances), would require approval by Federal, state, or local jurisdictions. For example, the proposed TMV Project, as approved by Kern County (Kern County 2009a), was designed to avoid all but 1% of wetlands in the TMV Planning Area (Central Valley Regional Water Quality Control Board 2011) (Appendix J). In addition, disturbance of some vegetation communities (as they relate to Covered species habitat) would be limited by relevant conservation measures provided in the TU MSHCP (e.g., measures to limit work in and around riparian/wetland areas to protect Tehachapi slender salamander; see Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives). In consideration of the proposed open space areas under the Proposed TU MSHCP Alternative, and with implementation of the conservation measures required under the TU MSHCP and mitigation measure discussed in Section 4.1.3.4, Mitigation Measures, it is anticipated that potential effects on sensitive vegetation communities from Commercial and Residential Development Activities would be minor, would not substantially degrade unique or sensitive habitats, and would not exceed a standard or criteria provided under another Federal, state, or local statute. These effects would be greater than the No Action Alternative where no development would occur.

### **Plan-Wide Activities**

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the Proposed TU MSHCP Alternative would have a limited potential to affect vegetation communities. Grazing would be expected to continue on about 126,034 acres<sup>1</sup> of the study area (i.e., open space), and grazing levels would be similar to historic levels (approximately 14,500 cattle). Grazing could damage vegetation in areas where livestock congregate and trample vegetation, or in areas where overgrazing occurs. For some vegetation communities (e.g., wetland and riparian areas), congregating and trampling by livestock may degrade habitat function and water quality, and overgrazing could result in suppression of native herbaceous species and natural recruitment. For other vegetation communities, livestock grazing could limit the expansion of nonnative annual plants, and increase litter turnover and nutrient recycling, improving the potential for native seed germination.

Plan-Wide Activities that could result in ground disturbance, such as repair and maintenance of back county cabins and ancillary ranch structures, could also affect vegetation communities through erosion or compaction. Other Plan-Wide Activities, such as film production and recreation, would continue to occur mostly in existing disturbed areas, roads, or trails, and would generally have only minor, temporary effects on vegetation communities.

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<sup>1</sup> As described in Table 4.1-1, this acreage of open space (126,034 acres) is less than the open space acreage associated with Proposed TU MSHCP Alternative and described in Chapter 2, Proposed TU MSHCP and Alternatives, (129,318 acres) because of the larger Development Envelope area considered to assess direct biological effects.

The BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the Proposed TU MSHCP Alternative and would include, for example, provisions to minimize the effects of grazing on the landscape (e.g., distribution of water sources and seasonal rotation of livestock), as well as site evaluation requirements prior to construction of new or relocated infrastructure. Construction or maintenance activities with the potential to result in temporary or permanent effects on special-status vegetation communities (e.g., wetlands, oak woodlands) would be subject to approval by Federal, state, or local jurisdictions, as described in Section 4.1.3.4, Mitigation Measures, which would reduce the potential for substantial, unmitigated effects on those vegetation communities. In addition, disturbance of some vegetation communities (as they relate to Covered species habitat) would be limited by relevant conservation measures provided in the TU MSHCP (e.g., measures to limit work in and around riparian/wetland areas to protect Tehachapi slender salamander; see Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives).

Fuel modification may also occur in conjunction with Plan-Wide Activities. Grazing would be the primary method of fuel management in areas where Plan-Wide Activities would occur, and grazing would be managed and limited as discussed above. Limited fuel management would continue to occur around existing structures and roads in open space and would be governed by a fuel management plan subject to review and approval by the Service. Fuel management activities associated with Plan-Wide Activities would not have a substantial effect on vegetation communities.

Finally, this alternative would limit permanent ground disturbance associated with construction of new roads and structures in open space necessary to support Plan-Wide Activities or Commercial and Residential Development Activities to 200 acres. As described above, the location of this acreage is not known at this time, but would be consistent with the Ranchwide Agreement and requirement to protect the conservation values of the ranch.

Although Plan-Wide Activities under the Proposed TU MSHCP Alternative could result in moderate effects on vegetation communities, these effects would be reduced through conservation measures required under the TU MSHCP that limit ground disturbance, and implementation of BMPs prescribed as part of the Federal, state, or local permitting processes (Section 4.1.3.4, Mitigation Measures) or as prescribed under the Ranchwide Agreement, and would not degrade unique or sensitive habitats, or exceed a standard or criteria provided under another Federal, state, or local statute. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, although they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the Proposed TU MSHCP Alternative.

### **4.1.3.2 Wildlife and Plant Species**

#### **California Condor**

##### **Commercial and Residential Development Activities**

Commercial and Residential Development Activities under the Proposed TU MSHCP Alternative have the potential to adversely affect the California condor and its habitat. These effects would be associated with the loss of foraging habitat; habituation to human structures and activities; increased risk of collisions with power lines, communication towers, and other artificial structures; and ingestion of microtrash.

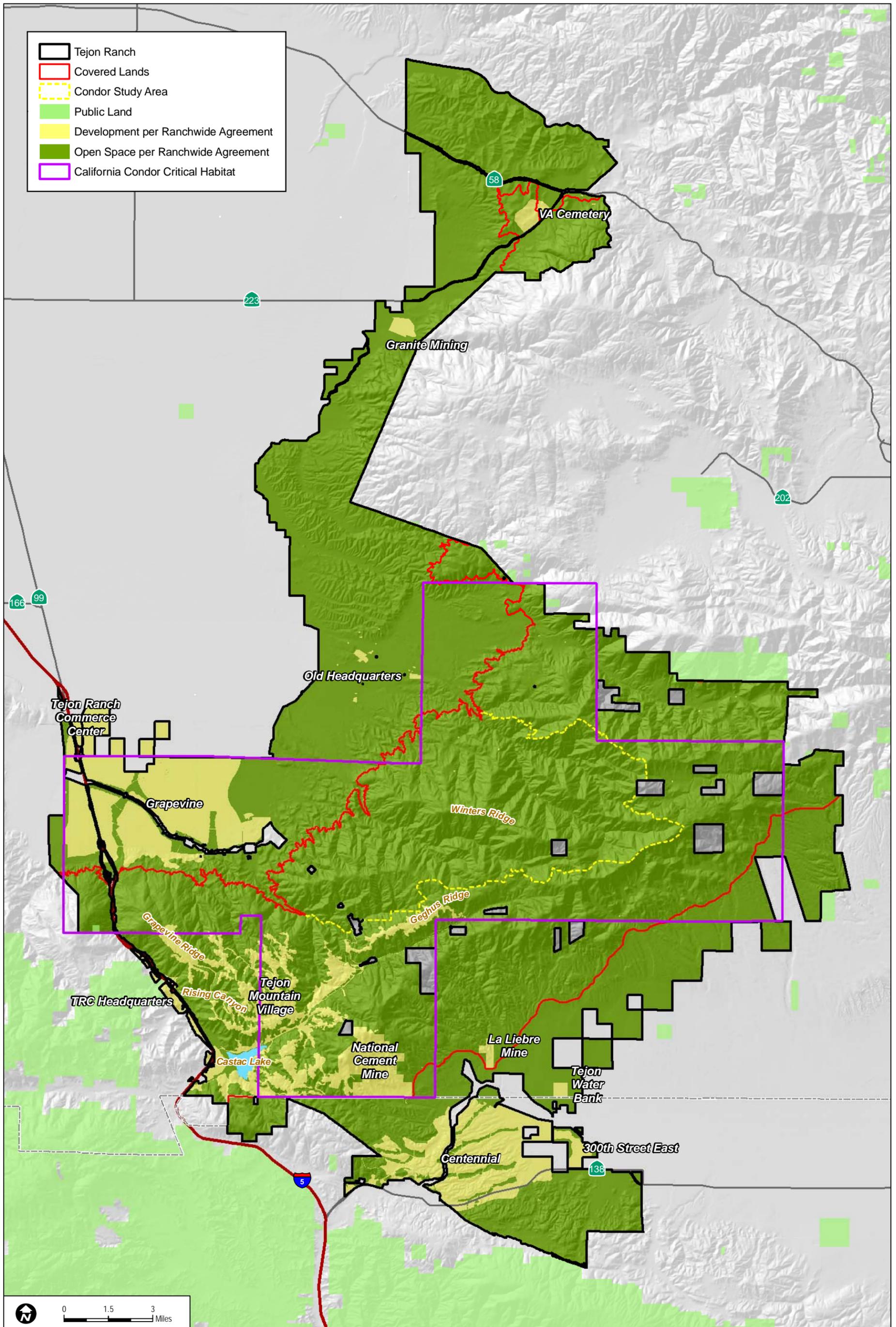
### ***Loss of Foraging Habitat***

As described in Section 3.1, Biological Resources, and Master Response 1E, California Condor Loss of Foraging Habitat, in Volume II of this Supplemental Draft EIS, the Service has determined that substantially more California condors are using Tejon Ranch and the Tehachapi Mountain region than analyzed in the Draft EIS. This conclusion is based on the results contained in the 2010 U.S. Geological Survey (USGS) condor study (Johnson et al. 2010) (Appendix I, Analysis of California Condor) and additional evaluations of condor global positioning system (GPS) data collected by the Service through May of 2011. The Service determined that grasslands and oak savannahs are the vegetation communities on Tejon Ranch where condors are the most able to consistently access food, and constitute the vast majority of suitable foraging habitat in the study area. Consequently, the Service has revised the model of foraging habitat for the California condor on Tejon Ranch to inform the analysis presented in this Supplemental Draft EIS. The revised model indicates a total of 182,614 acres of suitable condor foraging habitat occurs on Tejon Ranch, including 84,112 acres in the study area.

For the purposes of this analysis, it is assumed that all suitable foraging habitat within the TMV Planning Area Development Envelope would be directly affected by Commercial and Residential Development Activities, and that suitable foraging habitat within 0.5 mile of the TMV Planning Area Development Envelope would be indirectly affected. Specifically, given the configuration of the TMV Planning Area Open Space area relative to the proposed Development Envelope, the Service determined that much of the suitable foraging habitat in the TMV Planning Area Open Space would occur within a 0.5 mile of proposed developed areas, and therefore would not consistently provide feeding opportunities for condors. It is assumed, however, that the larger blocks of suitable foraging habitat in the TMV Planning Area Open Space would continue to function as foraging habitat (e.g., the eastern end of Geghus Ridge and the area north of Grapevine Peak) when more than 0.5 mile away from development. Based on these assumptions, Commercial and Residential Development Activities proposed within the TMV Planning Area Development Envelope would result in the direct loss of and indirect effects on 17,995 acres of suitable foraging habitat, including 12,015 acres of critical habitat. This would include 6,656 acres of foraging habitat directly lost to development and 11,339 acres indirectly affected by changes in adjacent land uses. Suitable foraging habitat is not located in other proposed developed areas (i.e., Lebec/Existing Headquarters or the TCWD facility) outside of the TMV Planning Area Development Envelope.

Of the 84,112 acres of foraging habitat in the study area, a minimum of 66,117 acres, including 46,045 acres of critical habitat, would be conserved in perpetuity as part of the TU MSHCP Mitigation Lands and Existing Conservation Easement Areas, and managed for the benefit of the species pursuant to a resource management plan implemented by Tejon Ranch Conservancy, as well as conservation easements approved by the Service. This would include 23,040 acres of suitable foraging habitat in the approximately 37,000-acre Condor Study Area. An additional 83,818 acres of foraging habitat would be conserved outside of the study area under the Ranchwide Agreement (Figure 4.1-1).

To further analyze potential effects on the condor population and its critical habitat, the Service also estimated potential food availability in the condor's range, focusing on the portion of the range currently used by the southern California subpopulation. Additional foraging habitat, and associated food resources, outside the current range of the southern California subpopulation are also considered in terms of the overall amount of carrion that would be necessary to support one free-



SOURCE: California Resource Agency 2011  
 TRC 2007  
 USFWS 2011

**FIGURE 4.1-1**  
**California Condor Critical Habitat with Respect to the Ranchwide Agreement**



flying population of 150 condors, as identified in the California Condor Recovery Plan (which would constitute one of the two wild and disjunct populations needed to meet the down-listing criterion of the Recovery Plan) (U.S. Fish and Wildlife Service 1996). Therefore, the analysis of potential effects on condor foraging habitat in this Supplemental Draft EIS includes the Service's analysis of food availability throughout the range of the species in California (i.e., southern and northern California subpopulations). For the purposes of this analysis, the Service considers condors in southern California and condors in Big Sur/Pinnacles National Monument (northern California subpopulation) as two subpopulations that will both contribute to one free-flying population in California per the recovery plan down-listing criteria. Although condors in southern California are not currently mixing regularly with condors in the north (generally between the Big Sur Coast in Monterey County and Pinnacles National Monument in San Benito County), the Service expects that individuals, probably juveniles and unpaired adults, will eventually intermix more frequently than they currently are, throughout the permit term and beyond, if these subpopulations continue to grow and expand their ranges. As such, the following provides a summary of estimated potential food availability within the condor's range in California.

Free-flying California condors need approximately 2.2 pounds of food per day based on caloric requirements (Houston 1971 in Wilbur 1978). Assuming condors obtain a minimum of 50 pounds of food from the average ungulate carcass (some carcasses likely provide more than 50 pounds), Wilbur (1978) calculated that a population of 50 condors would require 39,600 pounds of food or 720 carcasses per year. Based on these calculations, the Service estimates 2,160 carcasses per year would be necessary to provide enough food for one wild population of 150 condors.

The total number of beef cattle reported in Kern, Los Angeles, San Luis Obispo, Santa Barbara, Tulare, Kings, and Ventura Counties in 2009 equaled 112,000 head (U.S. Department of Agriculture 2011). There was an average mortality rate of 4.7% for cattle and calves in California from 1988 through 2010 (U.S. Department of Agriculture 2011). The U.S. Department of Agriculture includes death loss of all cattle in their reporting (J. Hardegree pers. comm. 2011), and the average mortality of range cattle could be lower or higher than the overall average. However, for lack of another available mortality rate, using an average mortality rate of 4.7%, it is estimated that approximately 112,000 head of cattle would provide 5,260 carcasses within the range of the southern California subpopulation of condors.

The average sheep and lamb mortality rate in California from 1988 through 2010 was 4.6% (U.S. Department of Agriculture 2011). Sheep also historically provided an important food resource for condors (Wilbur 1978, Koford 1953). A total of 106,600 sheep and lamb were reported in Kern and San Luis Obispo Counties in 2009 (Kern County 2009, San Luis Obispo County 2009), with an additional 28,469 sheep reported in Ventura County in 2009 (Ventura County 2009). Using the average mortality rate for sheep and lambs, 135,069 sheep and lambs would provide an estimated 6,212 sheep and lamb carcasses.

Based on the above livestock data, it is estimated that 11,472 cattle and sheep carcasses would be produced within the current range of the southern California subpopulation of condors, from San Luis Obispo County through Kings County (although because not all are range animals, not all of them would be available for condors), and an unknown number of native ungulate, other native mammal, and wild pig carcasses would provide additional food for condors. Livestock, wild pig, and native ungulate carcasses in Monterey and San Benito Counties would add to the 11,472 carcasses estimated in the southern California subpopulation's current range. This is more than what would

be needed (2,160 carcasses) to support one (California population) of the two populations of 150 free-flying condors identified in the recovery plan's down-listing criteria.

Not all carcasses would be found and eaten by condors. Some carcasses may be disposed of by landowners, consumed by predators, or simply not discovered by condors. The variability in food availability is consistent with the opportunistic scavenging and far-ranging foraging behavior characteristic of condors (U.S. Fish and Wildlife Service 1976, 1996; Wilbur 1978; Snyder and Snyder 2000). For these reasons, the Service cannot accurately predict what proportion of the estimated annual food base would actually be used by condors, nor the number of condors these available carcasses would support. Regardless, reasonable estimates suggest that the overall available food supply is well in excess of that needed to support a population of 150 free-flying condors in California.

The Service anticipates that at least some of this food supply would continue to be available to condors into the future. While livestock production in the condor's historic range in California may be declining, it continues to play a role in the economies of the counties within the condors range, and is not expected to disappear from those counties in the foreseeable future; in fact, livestock production in Kern County appears to be increasing (Kern County 2010). Therefore, it is not expected that all condors in the recovering population would feed exclusively on Tejon Ranch at all times. Large areas of additional suitable foraging habitat occur elsewhere in the historic range of the condor, including lands in public and private ownership (i.e., Los Padres National Forest and Wind Wolves Preserve, ranch lands in foothills of the southern Sierra Nevada, respectively), and it is assumed that at least some of this habitat would be available to condors into the future, particularly on Federal lands and lands held in conservation. Overall, the Service estimates there are currently more than enough potential carcasses from livestock, hunting, and other mortality of native ungulates and feral pigs in the condors' historic range in California to support not only the current condor population, but also one of the two free-flying population of 150 birds envisioned in the recovery plan and necessary to down list the condor to threatened status (assuming mortality factors, particularly lead poisoning, are minimized or eliminated).

The continued availability of a reliable and consistent food source for condors on Tejon Ranch is likely to increase in importance if the overall production of livestock within the range of the condor declines. Under the Proposed TU MSHCP Alternative, hunting and grazing would continue in open space areas (including the TU MSHCP Mitigation Lands and the Existing Conservation Easement Areas), as well as the other areas of foraging habitat conserved under the Ranchwide Agreement. Ranching would continue on the Covered Lands at current grazing levels up to total of 14,500 head of cattle, consistent with past practices. As outlined in the grazing management plan in the Interim RWMP, grazing would follow seasonal rotations currently in place, where cattle use grazing lands on the lower elevations of the ranch in the winter, moving gradually onto the higher elevation grazing lands through the spring and summer. The continuation of calving on Tejon Ranch, both on the TU MSHCP Mitigation Lands outside of the TMV Planning Area, the Existing Conservation Easement Areas, and on the other conserved rangelands on the ranch, is particularly important with regard to food availability for condors. Calves in particular have served as an important food source for condors in the past (Koford 1953, Wilbur 1978, Miller et al. 1965) and the Service (1976) has concluded that cow/calf operations on Tejon Ranch provide a crucial food source for condors.

Hunting, particularly hunter-killed native ungulate and feral pig carcasses and gut piles, also provides an important food source for condors on Tejon Ranch (see Master Response 1E, California Condor Loss of Foraging Habitat, for more discussion of hunting and potential effects associated with the Proposed TU MSHCP Alternative). Approximately 800 to 1,200 pigs are killed on Tejon Ranch each year (Tejon Ranch Conservancy pers. comm.) and wild pigs are expanding their range in California (California Department of Fish and Game 2011a). Although not a Covered Activity under the Proposed TU MSHCP Alternative, TRC would continue its established commercial hunting program and wild pig depredation on the TU MSHCP Mitigation Lands and other conserved areas of the ranch.

Based on this analysis, the Service has determined that the recent historic range of the California condor supports sufficient food resources from grazing, hunting, and native ungulate populations to support in excess of 150 birds. Given the estimated amount of foraging habitat that would be conserved and managed on Tejon Ranch, and the estimated food for condors that would be produced from cattle, pig, and native ungulate carcasses on that foraging habitat within the TU MSHCP Mitigation Lands and other conserved areas of Tejon Ranch, it is likely that the ranch would continue to function as an essential and viable foraging area for the expanding condor population. Although the loss of foraging habitat resulting from Commercial and Residential Development (direct/indirect loss of up to 17,995 acres of suitable foraging habitat, including 12,015 acres of critical habitat) would be greater under this alternative than the No Action Alternative, this loss would not result in a substantial adverse effect on the condor population or its critical habitat.

#### **Habituation**

Commercial and Residential Development Activities under the Proposed TU MSHCP Alternative have the potential to result in habituation of California condors to human structures and activities. Habituation poses several risks to condors, including intentional and accidental injury, well-meaning efforts to feed the birds, collisions with artificial structures, or ingestion of microtrash found in association with such activities and human structures. The Service has determined that California condors that become attracted to human activity and/or structures, and that are not responsive to deterrence efforts, have become habituated and must be captured and relocated, captured to undergo additional aversion training and be re-released, or be permanently removed from the wild. Habituation that results in any of the above scenarios would constitute a non-lethal take of the California condor, as described further below.

TRC has requested authorization through the ITP for non-lethal take of up to four condors (see Master Response 1C, California Condor Take and Habituation, in Volume II of this Supplemental Draft EIS). Take of condors, as contemplated under the TU MSHCP, would be in the form of habituation; that is, the circumstance where a condor becomes attracted to development or other human activity and becomes unresponsive to measures incorporated into the plan to deter such condor/human interaction such that its “normal behavioral patterns are disrupted”, thereby creating a “likelihood of injury” to an individual bird. No lethal take of condors has been applied for or would be authorized under an ITP for the TU MSHCP.

For the purposes of this analysis, it is assumed that up to four condors may be removed from the wild over the 50 year term of the proposed permit as a result of the Covered Activities. As described in more detail below, the Service has determined that take in this manner of up to four condors over a 50-year time span is reasonable given the expanding condor population, the Service’s experience

with previous undesirable interactions between humans and condors, the Service's success with hazing efforts to date, and the conservation measures under the Proposed TUMSHCP Alternative to reduce the potential for habituation. It is not anticipated that removing four condors from the wild over 50 years would have a substantial effect on the population, particularly if the removal is temporary. The potential for the permanent removal of condors from the wild as a result of habituation is low.

Most permanent removals of condors from the wild occurred early in the recovery program, when younger condors were released without the benefit of adults that would normally serve as models to juvenile birds in avoiding human/condor interactions. Relatively few condors have needed to be permanently removed from the wild in recent years. The most recent incidence of permanent removal from the wild as result of habituation occurred in 2010, where two juvenile birds were removed from the Arizona population. These birds exhibited extreme tolerance to humans to such an extent that they roosted overnight on the tailgate of a truck parked at the campsite, and approached humans on the south rim of the Grand Canyon. They were eventually captured in Arizona, held temporarily, then transferred to southern California where they were rereleased to see if a change in their environment would alter their negative behavior. Subsequent aberrant behavior, including a lack of fear of humans, resulted in the Service's decision that the birds were a danger to themselves, and their behavior would compromise other condors. In this instance, the Service attributes the habituation to the extended amount of time these birds were allowed to associate with humans while receiving positive reinforcement (i.e. food). In most situations where condors have been attracted to human structures or activity, the Condor Recovery Program has been able to respond to human/condor interactions soon enough that hazing efforts have been effective and habituation has not occurred, especially in more recent years as some of the released condors have reached breeding age. In 2011, one juvenile was removed from the wild for behavioral reasons when it repeatedly landed near visitors to Pinnacles National Park. Whether or not this bird will be rereleased in the future is unknown at this time.

Younger birds with less experience in the wild may be more prone to approaching human activity and/or structures than older, more experienced birds, although it is not anticipated that breeding-aged birds would entirely ignore new stimulus in their environment (i.e., new human structures or activity). Both breeding-age condors and juveniles have recently approached human structures and human activity, particularly when food sources were available to them; however, habituation has not occurred because these birds have responded to hazing. To date, no breeding condors have been permanently removed from the wild as a result of habituation.

It is a standard tenet of population biology that the value of a breeding adult in a population of a long-lived species has more ecological value than a non-breeding juvenile. Thus, the loss of wild breeding condors as a result of habituation would be more significant than the loss of juveniles. However, the Service cannot predict what the age structure of the population will be during the 50-year permit term because natural population growth (i.e., without the introduction of captive reared juveniles) in the wild is suppressed, primarily due to mortality from lead poisoning and because the mortality of condors in the wild is random with respect to age class. The Service considers that the habituation and permanent removal of breeding adult condors from the wild would have a greater effect on the growth of the wild population and on condor recovery in general than the habituation/removal of a juvenile bird. However, based on past experience, the habituation (trapping and removal) of adult breeding condors is considered to be not likely. Regardless, given that the condor population has increased since the initiation of the recovery program, and is likely to

continue to increase at a similar rate over the 50-year term of the proposed permit, removal of up to four condors from the wild should not significantly affect the overall wild condor population.

The Service considers these assumptions to be reasonable over the 50-year term of the proposed permit for the purposes of the effects analysis presented in this Supplemental Draft EIS. They are based on the general historic patterns of habituation, the success of past hazing efforts in the field that have been implemented quickly to preclude positive reinforcement, in association with humans and human structures, and the growing presence of mature adult birds in the wild which are less likely to engage in undesirable behaviors and can serve as models for juvenile birds.

As summarized in Table 2-3 in Chapter 2, Proposed TU MSHCP and Alternatives, the Proposed TU MSHCP Alternative would include ESA conservation measures intended to prevent habituation. In addition to the measures summarized below for power lines, towers, and microtrash, the Proposed TU MSHCP Alternative would limit design and construction of development on the ridges within the TMV Planning Area (the east-west ridge above Rising Canyon, the western portion of Geghus Ridge, and on Grapevine, Middle, Squirrel, Silver, and Lolas ridges, and upper slopes immediately adjacent to these ridges) to low-density Mountain Residential; require TMV Planning Area setbacks and use restrictions; and dedicate an onsite, Service-approved biologist with the responsibility to monitor condors on Tejon Ranch and respond to negative interactions between humans and condors quickly, using Service-approved measures to haze condors. The Service-approved Tejon Ranch Biologist would supervise and train additional qualified biologists in Service-approved hazing techniques to assist in efforts to haze condors from undesirable situations associated with the proposed action, and would be empowered to enforce rules governing use of the study area. The Proposed TUMSHCP Alternative would also include protection of the Condor Study Area and other large blocks of condor habitat within the TU MSHCP Mitigation Lands and Existing Conservation Easement Areas, and would include adaptive management provisions to address habituation or the potential for habituation of condors in the study area, based on ongoing monitoring by the Service-approved Tejon Ranch Biologist(s).

For the reasons described above, habituation of up to four condors under the Proposed TU MSHCP Alternative is not anticipated to result in a substantial effect on the population. The potential for habituation under the Proposed TU MSHCP Alternative would be greater than that associated with the No Action Alternative where habitation would be unlikely because development and associated infrastructure would not occur, and human presence/activity would not increase.

#### ***Collisions with Power Lines and Towers***

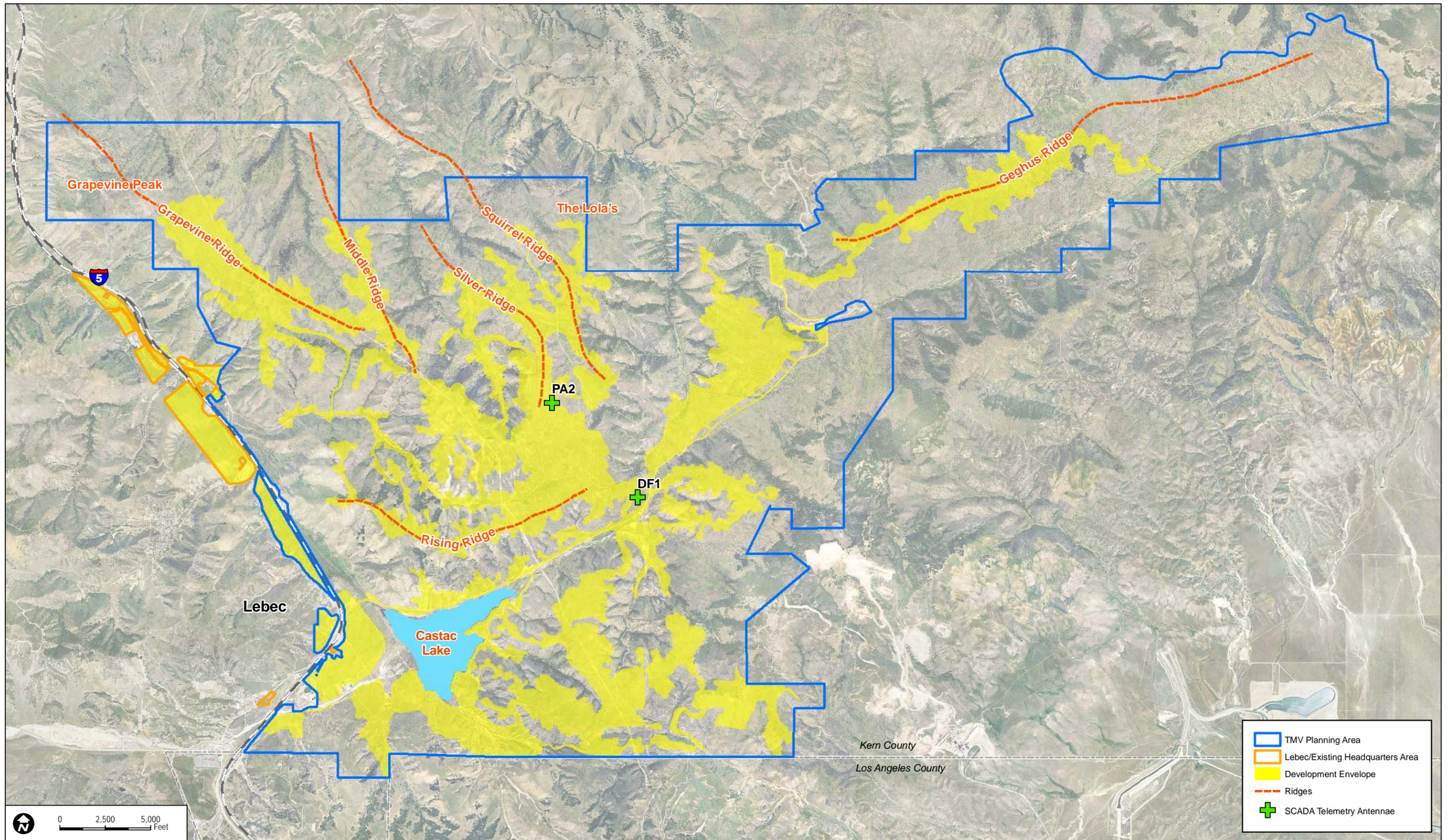
Since their reintroduction into the wild, the California condor population has been affected by collisions with power lines and high voltage transmission lines. A total of 10 condors were killed as a result of collisions with power lines between 1993 and 2007 (U.S. Fish and Wildlife Service unpublished data). While direct collisions with stationary transmission or communication towers have not been documented in historic condor populations, or with condors released into the wild since, any new aboveground transmission lines or transmission and communication towers or similar vertical structures installed as a result of development increase the potential for collisions. This is particularly a threat if such towers and lines are located on or near prominent ridgelines or slopes used by condors.

Table 2-3 in Chapter 2, Proposed TU MSHCP and Alternatives, summarizes the conservation measures that would be implemented under the Proposed TU MSHCP Alternative to reduce the potential for condor collisions with transmission lines, distribution lines, and towers. Specifically, no new aboveground high-voltage towers and transmission lines, or similar aboveground electrical transmission structures and lines would be built in the TMV Planning Area or elsewhere in the study area under the Proposed TU MSHCP Alternative. Third-party utilities, which TRC does not control, would be required to obtain their own ESA coverage should a transmission project be proposed in the future. Under this alternative, two existing lines may be relocated within 1,000 feet of existing locations, and associated transmission towers would include installation of antiperching devices. Additional permanent relocation of transmission or distribution lines would be prohibited unless reviewed and approved by the Service. All new transmission and distribution lines would be placed underground. In addition, an existing above-ground transmission line that runs from I-5 north of Castac Lake would be undergrounded within the TMV Planning Area after construction is complete. These measures would reduce the existing exposure of condors to transmission lines and towers.

Within the study area, TRC may not construct and maintain, or allow any third person to construct and maintain, new vertical communication or other utility structures outside of existing antenna farms, excluding flexible or small antennas (e.g., whip antennas) under 20 feet in height, unless the Service specifically approves such structures, including their design and location. Such factors as tower height and construction design, and proximity to existing towers and structures would be considered as part of the Service's review. The towers must be self-supporting to minimize the potential for collisions (i.e., no guide wires included as part of the design). Towers that would provide perches would be designed with antiperching devices. The design and location of the antiperching devices must also be approved by the Service.

Within the TMV Planning Area and Lebec/Existing Headquarters Area, the installation of two towers (PA-2/DF-1) would be authorized under the Proposed TU MSHCP Alternative. These towers would be located at two separate locations in the TMV Planning Area Development Envelope to provide suitable emergency radio communication coverage (Figure 4.1-2). One of these towers would be approximately 68 feet in height (including antennae) and the other would be approximately 65 feet in height (including antennae). Both towers would be required to be designed to be self-supporting (i.e., no guide wires) and would incorporate anti-perching devices. For the PA-2 tower, TRC would consult with the Service regarding the feasibility of locating the tower downslope (closer to a group of large oak trees), and agrees to do so if Kern County determines the Service's proposed location would provide suitable emergency radio communications. Although there has been no documented take from collision with a tower or antennae by a condor, the risk of collision with the PA-2 tower would be further minimized if at final design and installation it can be located closer to a group of large oak trees. The placement of any future communication towers to meet public safety requirements in the study area would be subject to review and approval by the Service.

The Proposed TU MSHCP Alternative also provides for smaller vertical communication structures (e.g., cell phone or radio antennas) to be placed within the TMV Planning Area Development Envelope or Lebec/Existing Headquarters areas, provided they meet design and height restrictions (i.e., the structures shall be no higher than 10 feet above houses or buildings [taller structures shall require the review and approval of the Service]; structures that contain surfaces suitable for perching by condors shall contain anti-perching devices; and the structures shall be located closer to trees where practicable and consistent with effective operations of communication systems). TRC would be required to confer with the Service regarding the placement of cell towers, antennas or



- TMV Planning Area
- Lebec/Existing Headquarters Area
- Development Envelope
- Ridges
- + SCADA Telemetry Antennae

SOURCE: TRC 2007

FIGURE 4.1-2

**Proposed Kern County Emergency Communication Tower Locations**



other similar structures during the preparation of tentative tract maps and corresponding grading plans.

The above design guidelines and conservation measures would reduce the potential for condor collisions with transmission lines, distribution lines, and towers. A substantial effect on the condor population from collisions is not anticipated. The potential for collision under this alternative would be greater than associated with the No Action Alternative, where no new power lines or towers would be constructed in the Development Envelope.

### ***Ingestion of Microtrash***

Small bits of plastic and metal, such as bottle caps and pop-tops, which are inadvertently fed to hatchlings by their parents, have resulted in the mortality of several wild-hatched condor chicks. Microtrash that has affected condor breeding in the wild may come from several possible sources, including roadsides, camp sites, recreational events, and scattered refuse piles. The increase in human presence associated with development under the Proposed TU MSHCP Alternative would be expected to increase the risk that microtrash may occur in areas currently not exposed to high levels of human activity.

Table 2-3 in Chapter 2, Proposed TU MSHCP and Alternatives, summarizes conservation measures under the Proposed TU MSHCP Alternative that would be implemented to minimize the risk of increased exposure of condors to microtrash. For example, all communication tower sites must be kept clean of debris, such as cable, trash, construction materials, and other microtrash likely to adversely affect condors. Additionally, education and educational materials regarding threats to condors and the measures to minimize these threats must be provided to contractors, residents, and guests. This information would identify the types of microtrash that could be ingested by condors, and would identify measures to eliminate microtrash at construction sites, recreational areas, outdoor filming projects, roads, and back-country areas where human presence occurs. Land managers would be empowered to take action to prevent any such activity that would pose a threat to condors under the terms of project conservation easements, covenants, conditions and restrictions (CC&Rs), and similarly enforceable measures. Tejon Ranch, or an included entity, would ensure that routine community maintenance activities include regular efforts to eliminate microtrash at and near all work sites, recreational events, filming projects, roads, and back-country cabin areas where human presence occurs. All trash receptacles would be fitted with animal and weather-proof lids, would be regularly emptied, and would be regularly inspected by the Service-approved Tejon Staff Biologist. The Tejon Staff Biologist or designated Tejon Ranch employees, would be assigned to be with all film crews to enforce rules regarding discarding of microtrash items and would require a thorough clean-up by the filming entity during and immediately upon completion of all film shoots to eliminate any microtrash that may have accumulated.

It is anticipated that implementation of these conservation measures under the Proposed TU MSHCP Alternative would limit the potential for microtrash to accumulate in the study area, and would minimize the risk of increased exposure of condors to microtrash. As such, the Proposed TU MSHCP Alternative would not result in a substantial adverse effect on the condor population from increased availability of microtrash. The potential for the occurrence of microtrash under this alternative would be greater than associated with the No Action Alternative, where no new development would occur, and human-related debris would not increase.

## Plan-Wide Activities

Current and future livestock grazing and related range management activities under the Proposed TU MSHCP Alternative would not be expected to have adverse effects on California condors. These activities have been a part of the landscape for many decades and have been one of the primary sources of food for condors over time. Grazing also reduces cover of nonnative grasses, opens habitat for foraging, and reduces fuel loads and the risk of catastrophic wildfire. Grazing would continue to provide an ongoing food source for condors, comparable to what would occur under the No Action Alternative.

Other ongoing Plan-Wide Activities, such as road and utility construction, repair, and maintenance, ancillary ranch activities, film production, back-country cabin use, and private and passive public recreation, may result in indirect effects on condors, such as generation of microtrash or human disturbance of condors that are roosting or feeding. Construction of utilities such as transmission towers and transmission lines could increase the potential for condors to collide with these structures, particularly if constructed along ridgelines or slopes likely to be used by condors.

As discussed above, the Proposed TU MSHCP Alternative would include conservation measures to restrict the design and construction of utilities in open space, as well as measures to protect against microtrash and habituation. Ground disturbance associated with Plan-Wide Activities under the Proposed TU MSHCP Alternative would be small enough (200 acres or less) to not substantially affect overall condor use of foraging and roosting habitat on the ranch. In addition, the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the Proposed TU MSHCP Alternative, and would include provisions to minimize the effects of ground-disturbing activities.

With respect to public access, the Proposed TU MSHCP Alternative would include development of a plan for review and approval by the Service; the Service would maintain this review and approval right in perpetuity. Public access of the study area would also be required to adhere to the conditions of the Ranchwide Agreement and the BMPs provided in the RWMP. Currently, the Interim RWMP provides for docent-led tours, citizen science activities, such as the Audubon Christmas bird count, school groups and special events (Tejon Ranch Company 2009). Additionally, the Interim RWMP provides that recreational access would only be allowed with qualified guides/docents, and in accordance with visitor guidelines that include a list of prohibited activities including, but not limited to, fireworks, smoking, littering, or driving off road. Public access would be subject to all the conservation measures in the TU MSHCP, including prohibitions on human behaviors that would adversely affect California condors, a provision for educational materials regarding condors, and limitations on pets (i.e., pets must be leashed).

While the level of condor activity on the ranch is expected to increase as their population continues to increase, it is anticipated the effects of Plan-Wide Activities on the California condor and its habitat would be minor given the additional restrictions of the TU MSHCP conservation measures. The effects would be somewhat greater than the No-Action Alternative, given the anticipated increased population of condors and increased human presence in the study area under the Proposed TU MSHCP Alternative.

## Other Covered Species

Table 4.1-3 provides a summary of the potential effects of the Proposed TU MSHCP Alternative on modeled habitat for each of the 26 other Covered Species included in the TU MSHCP. Habitat modeling for the other Covered Species is briefly described in Section 3.1.7, Other Wildlife Species Considered for Conservation under the TU MSHCP, both in general terms and for each Covered Species, and fully described in Appendix D, Habitat Suitability Criteria Methods. Permanent and temporary direct and indirect effects associated with Commercial and Residential Development and Plan-Wide Activities are discussed below.

**Table 4.1-3. Potential Effects on Modeled Habitat for Other Covered Species—Proposed TU MSHCP Alternative**

Species	Species Model	Acreage of Modeled Habitat in Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2,4</sup>	Acreage of Modeled Habitat Conserved <sup>3,4</sup>
Tehachapi slender salamander	Suitable habitat	4,071	143 (4%)	3,921 (96%)
Western spadefoot	Suitable habitat	1,175	30 (3%)	1,055 (90%)
Yellow-blotched salamander	Suitable habitat	35,213	1,179 (3%)	33,988 (97%)
American peregrine falcon	Foraging	26,742	2,741 (10%)	23,862 (89%)
	Breeding	80	1 (1%)	79 (99%)
Bald eagle	Foraging	518	5 (1%)	499 (96%)
	Wintering	1,438	834 (58%)	604 (42%)
Burrowing owl	Breeding/foraging	24,944	2,485 (10%)	22,406 (90%)
	Secondary breeding/foraging	8,073	552 (7%)	7,521 (93%)
Golden eagle	Foraging	33,891	3,040 (9%)	30,791 (91%)
	Breeding/foraging	33,056	2,045 (6%)	30,972 (94%)
	Primary breeding	48,019	2,613 (5%)	45,357 (94%)
Least Bell's vireo	Breeding/foraging	614	8 (1%)	582 (95%)
Little willow flycatcher	Foraging/stopover	986	8 (1%)	954 (97%)
Purple martin	Breeding/foraging	85,870	4,762 (5%)	81,015 (94%)
Southwestern willow flycatcher	Breeding/foraging	986	8 (1%)	954 (97%)
Tricolored blackbird	Foraging	18,553	1,107 (6%)	17,373 (94%)
	Primary breeding	289	23 (8%)	198 (69%)
Western yellow-billed cuckoo	Breeding/foraging	986	8 (1%)	954 (97%)
White-tailed kite	Foraging	9,009	1,874 (21%)	7,021 (78%)
Yellow warbler	Breeding/foraging	986	8 (1%)	954 (97%)
	Secondary foraging	51,743	2,687 (3%)	49,008 (95%)

Species	Species Model	Acreage of Modeled Habitat in Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2,4</sup>	Acreage of Modeled Habitat Conserved <sup>3,4</sup>
Valley elderberry longhorn beetle	Suitable habitat	2,597	0 (0%)	2,578 (99%)
Ringtail	Suitable habitat	99,253	8,287(8%)	90,735 (91%)
Tehachapi pocket mouse	Suitable habitat	1,931	57(3%)	1,071 (95%)
Coast horned lizard ( <i>frontale</i> and <i>blainvillii</i> populations)	Primary habitat	41,083	3,959 (10%)	37,074 (90%)
	Secondary habitat	62	3 (5%)	51 (82%)
Two-striped garter snake	Suitable habitat	364	34 (9%)	254 (70%)
Fort Tejon woolly sunflower	Suitable habitat	57,430	5,368 (9%)	52,046 (91%)
Kusche's sandwort	Suitable habitat	30,505	2,097 (7%)	28,407 (93%)
Round-leaved filaree	Suitable habitat	58,073	4,997 (9%)	53,076 (91%)
Striped adobe lily	Suitable habitat	32,213	2,737 (8%)	29,476 (91%)
Tehachapi buckwheat	Suitable habitat	2,579	16 (1%)	2,562 (99%)
Tejon poppy	Suitable habitat	12,672	108 (1%)	12,533 (99%)

<sup>1</sup> Acreages in this column are based on the study area encompassing 134,996 total acres, or the total acreage in the study area (141,886 acres) less the acreage in Other Lands (6,890 acres).

<sup>2</sup> Acreages in this column represent the acreage of modeled habitat lost in the 8,817 acre Development Envelope. Percentages represent the percent of modeled habitat lost relative to the acreage of modeled habitat in the study area.

<sup>3</sup> Acreage in this column represents the acreage of modeled habitat conserved in Established Open Space and TMV Planning Area Open Space (TU MSHCP Mitigation Lands), and Existing Conservation Easement Areas. Percentages represent the percent of modeled habitat conserved relative to the acreage of modeled habitat in the study area.

<sup>4</sup> The percentages of modeled habitat conserved and lost may not sum to 100% for three possible reasons: (1) rounding error; (2) 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages; and (3) 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space. As a result, it is likely that modeled habitat conserved in the Lebec/Existing Headquarters Area is underestimated because the County land use designations for this area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects). A more specific explanation for these differences is provided in the species-specific discussion below for the species where the sum is less than 90% (i.e., tricolored blackbird, coast horned lizard, and two-striped garter snake).

## Commercial and Residential Development Activities

As described in Section 3.1, Biological Resources, modeled habitat is composed of vegetation communities supporting the life history requirements of the Covered Species, along with other habitat suitability criteria appropriate for a particular species, such as soils or elevations. Therefore, for the purposes of this EIS, permanent loss of modeled habitat is used to assess direct effects on species. In addition to permanent ground disturbance, construction-related effects, including noise, toxins, and lighting, and operations effects, including increased human presence and introduction of

urban-type uses associated with development, could indirectly affect the other Covered Species, and are described below.

### ***Loss of Habitat***

Table 4.1-3 indicates the extent of the permanent loss of modeled habitat for each of the other Covered Species, as well as the extent of modeled habitat that would be conserved in the study area. While only some portion of each of these modeled habitats would represent the most suitable habitat for the Covered Species, in the absence of more detailed species habitat information, they are used here to conservatively represent the extent of suitable habitat that would be lost for each species under the Proposed TU MSHCP Alternative. For each of the other Covered Species, the following evaluation considers the loss of modeled habitat, potential effects on known species occurrences within the study area (where applicable), as well as the overall range and rarity of the species in relation to the potential loss of modeled habitat.

In general, the primary conservation measure under the Proposed MSHCP Alternative would be conservation and management of 129,318 acres of open space. In addition, species-specific conservation measures would be provided under the Proposed TU MSHCP Alternative, as summarized in Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives. These measures generally address construction- or operation-related effects, and are described in more detail below. Where conservation measures are provided specifically to offset the loss of modeled habitat, they are summarized for each species.

#### ***Tehachapi Slender Salamander***

Modeled habitat for the Tehachapi slender salamander would be reduced by 143 acres (4%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, Tehachapi slender salamanders have been detected at five locations in the study area (Monroe Canyon [1 record], Bear Trap Canyon [2 records], adjacent to the California aqueduct [1 record], and Tejon Canyon[1 record]), all of which would be preserved in open space areas under this alternative. The Tehachapi slender salamander is endemic to California and only occurs in the Piute and Tehachapi Mountains of Kern County.

Potential effects on Tehachapi slender salamander are considered in the context of the species' limited range and the difficulty of detecting species presence during surveys. An estimated 3,921 acres (96%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative. As summarized in Table 2-4, this alternative would include species-specific conservation measures to reduce potential effects on Tehachapi slender salamander, including preconstruction surveys in suitable habitat by the Service-approved Tejon Ranch Biologist and reasonable efforts to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed. Construction activities would also be monitored, and exclusion fencing erected, if appropriate, to prevent Tehachapi slender salamanders from entering construction zones. In modeled habitat within the TMV Planning Area, and for all hard surface roads within open space, culverts would be placed under road connections to reduce the potential for the species to enter on-site roads. These conservation measures, including preservation of 96% of modeled habitat in open space, would reduce potential effects on this species from the loss of habitat. In consideration of the species limited range, it is anticipated that the loss of 4% of modeled habitat under the Proposed TU MSHCP Alternative would result in a moderate effect on the Tehachapi slender salamander in the

study area, and a minor effect on the population rangewide.<sup>2</sup> This alternative would not substantially affect this species.

#### *Western Spadefoot*

Modeled habitat for the western spadefoot would be reduced by 30 acres (3%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, western spadefoot has not been detected in the TMV Planning Area and has low potential to occur in other parts of the study area. The western spadefoot is endemic to California and northern Baja California. It has been extirpated throughout most of the lowlands of southern California and from many locations in the Central Valley (U.S. Fish and Wildlife Service 2005).

An estimated 1,055 acres (90%) of modeled habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on western spadefoot, including preconstruction surveys in suitable habitat by the Service-approved Tejon ranch Biologist and reasonable efforts to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed. If western spadefoots are detected (including egg masses and larvae), construction activities would stop within 300-feet of the occupied area until larvae have metamorphosed. Preconstruction activities would also be monitored, and exclusion fencing erected, if appropriate, to prevent western spadefoot from entering construction zones. These conservation measures, including preservation of 90% of modeled habitat in open space, would reduce potential effects on this species from the loss of habitat. In consideration of the low potential for occurrence in the study area, it is anticipated that the loss of 3% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on the population of western spadefoot in the study area (if present), and a minor effect on the species rangewide. This alternative would not substantially affect this species.

#### *Yellow-Blotched Salamander*

Modeled habitat for the yellow-blotched salamander would be reduced by 1,179 acres (3%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the yellow-blotched salamander was detected in several drainages in the TMV Planning Area, and all currently known populations in the study area would be conserved generally north of Rising Canyon and south of Pastoria Canyon, east of Grapevine Peak in the vicinity of Silver, Monroe, and Squirrel canyons, and along tributaries to Bear Trap Canyon. Yellow-blotched salamanders are endemic to California, specifically in Kern and Ventura Counties, and occur at elevations between 1,400 and 7,496 feet amsl.

Potential effects on yellow-blotched salamander are considered in the context of the species' limited geographic range. An estimated 33,988 acres (97%) of modeled habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects

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<sup>2</sup> In the 12-Month Finding for the Tehachapi slender salamander, the Service concluded that the TMV Project would not significantly affect the survival and recovery of the Tehachapi Mountains Distinct Population Segment (DPS) of Tehachapi slender salamander because the five occupied canyons that comprise the Tehachapi Mountains DPS are widely distributed (76 FR 62926).

on yellow-blotched salamander, including preconstruction surveys in suitable habitat by the Service-approved Tejon ranch Biologist and reasonable efforts to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed. Construction activities would also be monitored, and exclusion fencing erected, if appropriate, to prevent yellow-blotched salamanders from entering construction zones. These conservation measures, including preservation of 97% of modeled habitat in open space and preservation of all known populations in the study area, would reduce potential effects on this species from the loss of habitat. In consideration of these conservation measures, it is anticipated that the loss of 3% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on yellow-blotched salamander in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *American Peregrine Falcon*

Modeled foraging habitat for the American peregrine falcon would be reduced by 2,741 acres (10%) in the study area under the Proposed TU MSHCP Alternative; modeled breeding habitat (steep cliff and bluffs) would be reduced by 1 acre (less than 1%) (Table 4.1-3). As described in Section 3.1, Biological Resources, the peregrine falcon has not been documented to nest in the study area and has only been observed to be an occasional winter visitor. It has an extensive range that spans from Alaska south to northern Mexico and east across Arizona through Alabama, and is known to use a large variety of open habitats for foraging.

An estimated 23,862 acres (89%) of modeled foraging habitat and 79 acres (99%) of modeled breeding habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on American peregrine falcon, including preconstruction surveys in suitable breeding habitat to determine if nesting falcons are present. If active nests are detected, a 0.25-mile protection zone would be established around each active nest and grading and land management activities would be prohibited in this zone while the nest is active. Construction activities would also be monitored by a Service-approved biologist. Similarly, if an active peregrine falcon nest is detected in open space, a 1,000-foot protection zone would be established around the nest, and recreation and other activities would be prohibited in that zone until all young have fledged and are no longer dependent on the nest for survival.

In consideration of the extensive range of the species, the fact that no known nesting populations would be affected by the Covered Activities, and because 89% of the modeled foraging habitat and 99% of modeled breeding habitat would be conserved and protected in open space areas, it is anticipated that the loss of 10% of modeled foraging habitat and 1% of modeled breeding habitat under the Proposed TU MSHCP Alternative would have a minor effect on American Peregrine falcon that may nest or forage in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Bald Eagle*

Modeled winter roosting habitat for the bald eagle would be reduced by 834 acres (58%) in the study area under the Proposed TU MSHCP Alternative; modeled foraging habitat would be reduced by 5 acres (1%) (Table 4.1-3). Modeled winter roosting habitat is concentrated around and within 1 mile of Castac Lake, particularly to the south and east where trees are sufficiently large to support roosting substrate for bald eagles. A substantial amount of development is planned for the perimeter

and in the vicinity of Castac Lake under this alternative. The removal of 58% of the modeled winter roosting habitat would represent a substantial amount of the existing woodland habitat available to the bald eagle as winter roosting habitat in the study area. While foraging habitat at the lake would remain largely undisturbed, bald eagle use of aquatic foraging habitats is in part a function of the availability of roosting and perching trees in the vicinity of the aquatic foraging habitat. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include conservation measures to protect this habitat, including a prohibition on removal of preferred diurnal perches and high quality roost trees from fuel modification zones within 1 mile of Castac Lake. In addition, snags and large trees would be avoided within 100 feet of the shoreline of Castac Lake, where possible, and an adequate setback from preferred roosting areas would be established by a Service-approved biologist.

As described in Section 3.1, Biological Resources, bald eagles have a widespread distribution in North America, wintering from Alaska eastward to Newfoundland and southward locally to Baja California, Sonora, Texas, and Florida. In California, breeding populations are more limited and restricted primarily to the northern Sierra. Within the study area, at least six bald eagles were observed in winter 2007, and the loss of 58% of available modeled winter roosting habitat would likely reduce the use of Castac lake by wintering bald eagles. However, the bald eagle does not breed on site and surveys indicate that a large wintering population does not occur in the study area. In consideration of the extensive range of the species and the conservation measures that would be implemented to protect the remaining modeled foraging and wintering habitat in the study area, it is anticipated that the loss of 1% of modeled foraging habitat and 58% of modeled wintering habitat under the Proposed TU MSHCP Alternative would have a moderate effect on bald eagle that winter or forage in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Burrowing Owl*

Modeled breeding/foraging habitat for burrowing owl would be reduced by 2,485 acres (10%) in the study area under the Proposed TU MSHCP Alternative; modeled secondary breeding/foraging habitat would be reduced by 552 acres (7%) (Table 4.1-3). As described in Section 3.1, Biological Resources, burrowing owls are infrequent winter visitors to the study area. One migrant burrowing owl was incidentally observed in the study area in 2007; however, no breeding, resident, or wintering burrowing owls were detected on site during any of the focused surveys of the TMV Planning Area. In general, the burrowing owl is widespread in the United States and Canada and is found in a wide variety of habitat types typically characterized by low-growing vegetation and burrows made by fossorial mammals, such as ground squirrels.

An estimated 22,406 acres (90%) of modeled breeding/foraging habitat and 7,521 acres (93%) of modeled secondary breeding/foraging habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on burrowing owl, including preconstruction surveys in suitable breeding habitat 30 days prior to scheduled grading to determine if owls are present on site. If non-nesting burrowing owls are observed on site, grading construction would stop until owls are evacuated from the site using CDFG-approved burrow closure procedures. If nesting burrowing owls are observed on site, a 300-foot setback would be provided around all active nests until fledglings have left or are independent of the nest, as determined by a Service-approved biologist. Given the extensive range of the species, their limited

presence in the study area, and because 90% of the modeled breeding/foraging habitat and 93% of modeled secondary breeding/foraging habitat would be conserved and protected in open space, it is anticipated that loss of 10% of modeled breeding/foraging habitat and 7% of modeled secondary breeding/foraging habitat under the Proposed TU MSHCP Alternative would have a minor effect on burrowing owl in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Golden Eagle*

Modeled foraging, breeding/foraging, and primary breeding habitat for golden eagle would be reduced by 3,040 acres (9%), 2,045 acres (6%), and 2,613 acres (5%) in the study area, respectively, under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, golden eagles have been regularly observed in the TMV Planning Area since 1999 and are a documented breeding resident on site. Three active nest sites are currently known to occur in the study area. Within their range, golden eagles are sparsely distributed throughout most of California, occupying primarily mountain, foothill, and desert habitats. The golden eagle preferred territories have a favorable nest site, a dependable food supply, and broad expanses of open country for foraging. Nesting of the golden eagle is primarily restricted to rugged, mountainous country with canyons and escarpments.

An estimated 30,791 acres (91%) of modeled foraging habitat, 30,792 acres (94%) of modeled breeding/foraging habitat, and 43,357 acres (94%) of modeled primary breeding habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, all known active golden eagle nests (primary and alternate) in the study area would be protected during the breeding season. Additional measures to reduce potential effects on golden eagle would include preconstruction surveys (i.e., prior to approval of a grading plan to better incorporate avoidance planning and completion of baseline surveys in open space) to confirm nest activity status and to search for any new active nests, application of a viewshed analysis to any new nests discovered during preconstruction surveys, and implementation of development and recreational use setbacks and trail closures (during the nesting season) to avoid potential disturbance of golden eagle nests and associated foraging habitat. Given the extensive range of the species, the species-specific conservation measures that would be applied to active nest sites, and the combined high level of habitat conservation (91% of the modeled foraging habitat, 94% of modeled breeding/foraging habitat, and 94% of primary breeding habitat would be conserved and protected), it is anticipated that the loss of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on golden eagles in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Least Bell's Vireo*

Modeled breeding/foraging habitat for the least Bell's vireo would be reduced by 8 acres (less than 1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the least Bell's vireo is endemic to California and northern Baja California. However, its current breeding distribution is primarily restricted to distinct locations in southern California (south of the Tehachapi Mountains) to northern Baja California. The primary breeding and foraging habitat of the least Bell's vireo is early successional, dense riparian habitat below 1,500 feet amsl.

This species has not been detected in the study area, and the study area is not an area of focus in the least Bell's vireo recovery plan (U.S. Fish and Wildlife Service 1998). However, the least Bell's vireo has a very limited distribution, and low reproductive success due to loss of riparian habitat and cowbird nest parasitism. Therefore, loss of any potential breeding habitat is an important consideration for this species. An estimated 582 acres (95%) of breeding/foraging habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the least Bell's vireo, including preconstruction surveys in and immediately adjacent to suitable breeding/foraging habitat during the breeding season (April through August), and creation of a 500-foot buffer around any nests detected in preconstruction surveys if construction cannot be avoided entirely during the breeding season.

Although the net loss of 8 acres of riparian habitat under the Proposed TU MSHCP Alternative could affect least Bell's vireo if they occur on site, appropriate management of the remaining 95% of modeled breeding/foraging habitat (i.e., maintenance of a high proportion of the riparian areas suitable for the species in an early successional state) would reduce this effect. In consideration of the conservation measures provided under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Proposed TU MSHCP Alternative would have a minor effect on the population of least Bell's vireo in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Little Willow Flycatcher*

Modeled foraging/stopover habitat for the little willow flycatcher would be reduced by 8 acres (less than 1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, this species breeds in California from Tulare County north along the western side of the Sierra Nevada, with most of the remaining breeding populations occurring in isolated mountain meadows of the Sierra Nevada and Cascades. The full species willow flycatcher winters in Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Colombia, and into South America. Foraging flycatchers have been observed in the study area, although the entire breeding range of the little willow flycatcher is located outside of the study area. However, suitable foraging and stopover habitat exists in the study area, and little willow flycatchers have been detected near Castac Lake, Cuddy Creek, Beartrap Canyon, Rising Canyon and along Grapevine Creek.

An estimated 954 acres (97%) of modeled foraging/stopover habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on little willow flycatcher, including incorporation of design features at the boundary between modeled habitat and development areas to minimize the introduction of nonnative species and urban runoff into adjacent natural areas, which could degrade flycatcher stopover habitat. Lighting would also be directed away from modeled habitat to reduce disturbance. Given that little willow flycatchers on migration have more general habitat requirements than breeding individuals, and that 97% of the modeled foraging/stopover habitat would be conserved and protected in open space, it is anticipated that the loss of 1% of modeled foraging/stopover habitat under the Proposed TU MSHCP Alternative would have a minor effect on little willow flycatcher stopping over and foraging in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Purple Martin*

Modeled breeding/foraging habitat for the purple martin would be reduced by 4,762 acres (5%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the purple martin breeds locally from British Columbia eastward to Nova Scotia, and southward to Baja California, central Mexico, and the Gulf Coast. The winter range of the species is not well understood, but they are presumed to winter in Amazonia and south-central Brazil. In California, the purple martin occurs as a summer resident and migrant; the breeding populations are highly localized, primarily inland and along the central and southern coast. In the Tehachapi Mountains, the purple martin nests regularly in oak woodland, and has been detected breeding and foraging in the oak woodland and oak savannah communities in the study area. Airola and Williams (2008) found the Tehachapi Mountains support 100 to 200 pairs of purple martin, and may be the one remaining area in California where purple martins regularly nest in oak woodland.

An estimated 81,015 acres (94%) of modeled breeding/foraging habitat for this species would be conserved in open space under this alternative. Despite the conservation of 94% of modeled habitat in open space, the Proposed TU MSHCP Alternative would likely directly affect breeding sites in the TMV Planning Area that have been used by purple martin in the past, and could indirectly affect breeding pairs through competition from starlings, which can be exacerbated with human development of remote areas (Williams 2002). As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the purple martin, including preconstruction surveys for breeding purple martins and avoidance of active nests during the breeding season (April through August). A European starling management plan would also be implemented by a Service-approved biologist if determined necessary. These conservation measures, including preservation of 94% of modeled breeding/foraging habitat in open space, would reduce potential effects on this species from the loss of habitat. Given the apparent importance of the Tehachapi Mountains to this species, it is anticipated that the loss of 5% of modeled breeding/foraging habitat for purple martin under the Proposed TU MSHCP Alternative would have a minor to moderate effect on the species in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Southwestern Willow Flycatcher*

Modeled breeding/foraging habitat for the southwestern willow flycatcher would be reduced by 8 acres (less than 1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, southwestern willow flycatchers breed in Arizona, New Mexico, California, southwestern Colorado, southern Nevada and Utah, and western Texas. The total number of southwestern willow flycatcher territories in 2002 was estimated to be approximately 1,100 to 1,200, and these territories were distributed in a large number of small breeding populations. These small, isolated breeding populations make the species particularly vulnerable to local extirpation.

No southwestern willow flycatchers have been observed in the study area and the study area is not an area of focus in the southwestern willow flycatcher recovery plan (U.S. Fish and Wildlife Service 2002). However, the southwestern willow flycatcher has low reproductive success due to loss of riparian habitat and cowbird nest parasitism; therefore, loss of any potential breeding habitat is an important consideration for this species. An estimated 954 acres (97%) of modeled breeding/foraging habitat would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation

measures to reduce potential effects on southwestern willow flycatcher, including preconstruction surveys in and immediately adjacent to suitable breeding/foraging habitat during the breeding season (April through August), and creation of a 500-foot buffer around any nests detected in preconstruction surveys if construction cannot be avoided entirely during the breeding season.

Although the net loss of 8 acres of riparian habitat under the Proposed TU MSHCP Alternative could affect southwestern willow flycatchers, should they occur in the study area, appropriate management of the remaining 97% of modeled habitat (i.e., maintenance of a high proportion of the riparian areas suitable for the species in an early successional state) would reduce this effect. In consideration of the conservation measures provided under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Proposed TU MSHCP Alternative would have a minor effect on southwestern willow flycatchers in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tricolored Blackbird*

Modeled foraging habitat for the tricolored blackbird would be reduced by 1,107 acres (6%) in the study area under the Proposed TU MSHCP Alternative; modeled primary breeding habitat would be reduced by 23 acres (8%) (Table 4.1-3). As described in Section 3.1, Biological Resources, tricolored blackbirds have been observed nesting in the study area adjacent to Castac Lake. Tricolored blackbird breeding colonies generally require open accessible water, a protected nesting substrate, and a suitable foraging area which provides adequate insect prey. About 99% of the population is endemic to California, and in 2011, tricolored blackbirds nesting in Tulare Basin in Kern County represented approximately 34% of the California population.

Modeled breeding habitat for the tricolored blackbird in the study area is concentrated around Castac Lake. Under this alternative, 198 acres (69%) of modeled breeding habitat and 17,373 acres (94%) of modeled foraging habitat would be conserved in open space.<sup>3</sup> As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the tricolored blackbird, including preconstruction surveys in and immediately adjacent to suitable breeding habitat during the breeding season (April through August), and creation of a 500-foot buffer around any nesting colony if construction cannot be avoided entirely during the breeding season.

The net loss of 23 acres of modeled primary breeding habitat under the Proposed TU MSHCP Alternative could affect nesting tricolored blackbird colonies in the study area. Under this alternative, development would surround a significant portion of Castac Lake, which is the primary body of water in the study area and is also the location where tricolored blackbirds have historically been observed. Managing open space to provide cattail marsh and appropriate nesting habitat for

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<sup>3</sup> The percentages of modeled primary breeding habitat conserved and lost for tricolored blackbird only sum to 77% under the Proposed TU MSHCP Alternative (Table 4.1-3). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled primary breeding habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

the species, along with implementation of the above conservation measures, would reduce this effect. It is anticipated that the loss of 6% of modeled foraging habitat and 8% of modeled breeding habitat under the Proposed TU MSHCP Alternative would have a moderate effect on tricolored blackbirds in the study area and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Western Yellow-Billed Cuckoo*

Modeled breeding/foraging habitat for the western yellow-billed cuckoo would be reduced by 8 acres (less than 1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the western yellow-billed cuckoo nests at scattered locations in California including Sacramento and Owens Valley, the south fork of the Kern River, the Santa Ana River, the Colorado River, and the Amargosa River. The western yellow-billed cuckoo breeds primarily in dense, riparian woodlands, and requires a wide band of riparian habitat. This species has not been detected in the study area, and although vegetation communities indicative of breeding habitat have been modeled, suitable patch size for nesting western yellow-billed cuckoos has not been found in the study area.

An estimated 954 acres (97%) of modeled breeding habitat would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on western yellow-billed cuckoo, including preconstruction surveys in and adjacent to suitable breeding habitat prior to scheduled grading to determine if cuckoos are present. If breeding western yellow-billed cuckoos are observed on-site, a 500-foot buffer would be provided around any active nests until fledglings have left and are no longer dependent on the nest or test territory. Given the lack of suitable patch size for western-yellow billed cuckoos to nest in the study area, and because 97% of modeled breeding habitat would be conserved and protected in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Proposed TU MSHCP Alternative would have a minor effect on the population of western yellow-billed cuckoo in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *White-Tailed Kite*

Modeled foraging habitat for the white-tailed kite would be reduced by 1,874 acres (21%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the white-tailed kite breeds in Oregon, Washington, and Texas, but the primary breeding populations are found in California, occupying most areas west of the Sierra Nevada foothills and outside of the southeast deserts. The white-tailed kite is an infrequent winter visitor to the study area and there are no breeding records and few occurrence records of the species in the study area.

An estimated 7,021 acres (78%) of the modeled foraging habitat for this species would be conserved in open space under this alternative. Breeding habitat was not modeled for this species because the study area is located east of the published year-round range for the species. No nests were detected and few birds were observed foraging in the study area. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the white-tailed kite, including preconstruction surveys for active white-tailed kite nests during the breeding season (March through September) prior to grading. Any active nests would be conserved and protected by a 500-foot buffer. Given the large range of the species, their limited presence in the study area, and because 78% of the modeled foraging habitat would be conserved and protected in open space, it is anticipated that the loss of 21% of modeled foraging habitat under the Proposed TU MSHCP Alternative would have a minor effect on white-tailed kite visiting or wintering in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Yellow Warbler*

Modeled breeding/foraging and secondary foraging habitat for the yellow warbler would be reduced by 8 acres (less than 1%) and 2,687 acres (3%) in the study area, respectively, under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the breeding range of the yellow warbler extends from northern Alaska, eastward to Newfoundland and southward to northern Baja California and Georgia. It migrates through North America and winters from southern California, Arizona, and the Gulf Coast to central South America. In California, the yellow warbler has an extensive breeding range, nesting in riparian woodlands from coastal and desert lowlands up to 8,000 feet amsl in the Sierra Nevada. Yellow warbler breeding habitat also includes montane chaparral, ponderosa pine, and mixed conifer habitats. Yellow warblers have been observed in the TMV Planning Area and are expected to occur in a regular distribution in the study area based on these observations. Although nests have not been documented, this species is expected to nest in the study area within suitable habitat.

An estimated 954 acres (97%) of modeled breeding/foraging habitat and 49,008 acres (95%) of secondary foraging habitat would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the yellow warbler, including preconstruction surveys during the breeding season (April through August) in or adjacent to suitable breeding habitat. If nesting yellow warblers are observed on site, appropriate setbacks would be established if construction cannot be avoided entirely during the breeding season.

Yellow warblers are sensitive to decreases in deciduous habitat, heterogeneity of riparian habitat and riparian corridor width. They also have reduced reproductive success due to cowbird nest parasitism and nest predation. Given these factors, the net loss of riparian habitat is an important consideration for this species. However, despite many local declines, yellow warblers currently occupy most of their former breeding range with the exception of the Central Valley. Given the high level of habitat conservation and protection (97% of modeled breeding/foraging habitat and 95% of secondary foraging habitat), and with the appropriate management of conserved riparian habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat and 3% of modeled secondary foraging habitat under the Proposed TU MSHCP Alternative would result in a minor effect on yellow warblers in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Valley Elderberry Longhorn Beetle*

Modeled habitat for the valley elderberry longhorn beetle would not be lost in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the primary range of the valley elderberry longhorn beetle is in the Central Valley, although the species' distribution ranges from southern Shasta County to Fresno County. The host plants of the valley elderberry longhorn beetle are red or blue elderberry, and the species spends the majority of its life cycle inside the limbs of the elderberry shrub. Presence of the valley elderberry longhorn beetle is confirmed by the existence of emergence holes in elderberry shrubs. Elderberry shrubs have been mapped at several locations in the TMV Planning Area; however, no emergence holes were found on any of the mapped shrubs.

An estimated 2,578 acres (99%) of modeled habitat for the valley elderberry longhorn beetle would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the valley elderberry longhorn beetle, including development of an integrated pest management plan (IPMP), which would limit the exposure of elderberry trees to herbicides that could damage or destroy the trees. Given that no modeled valley elderberry longhorn beetle habitat would be lost under this alternative and 99% of modeled habitat would be conserved, it is anticipated that the Proposed TU MSHCP Alternative would have a minor effect on the population in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Ringtail*

Modeled habitat for the ringtail would be reduced by 8,287 acres (8%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the ringtail occurs in the southwestern United States. In California, the ringtail is widely distributed and is only absent from Modoc Plateau, Antelope Valley, and portions of the San Joaquin Valley. Potential ringtail scat has been observed in the TMV Planning Area, however, the observation was unverified, and no occurrences of the ringtail were recorded in the TMV Planning Area during the course of extensive camera/scent station surveys in 2007.

An estimated 90,735 acres (91%) of modeled habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species specific conservation measures to reduce potential effects on the ringtail, including preconstruction surveys within 300 feet of a disturbance zone within 30 days of permanent ground disturbance to determine if ringtails are present in the area. If ringtails (or signs of ringtails) are observed within 300 feet of the disturbance zone, construction would be avoided during the breeding period (February through September). Similarly, if ringtails (or signs of ringtail) are observed within 300 feet of the disturbance zone during the nonbreeding period (September through February), the Service-approved biologist will work in consultation/coordination with CDFG to implement avoidance measures (e.g., flush the species from the disturbance zone). Construction in modeled riparian, wash, and wetland habitat would be avoided to the extent practicable with the exception of road crossings and culverts.

The loss of 8,287 acres of modeled habitat would, at a minimum, reduce the amount of potential habitat for ringtail in the study area; however, given the extensive range of the ringtail, its unconfirmed presence (or likely limited distribution if present) in the study area, and because 91%

of the modeled habitat would be conserved in open space, it is anticipated that the loss of 8% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor to moderate effect on the ringtail population in the study area (if present), and a minor effect on the rangewide population. This alternative would not substantially affect this species.

#### *Tehachapi Pocket Mouse*

Modeled habitat for the Tehachapi pocket mouse would be reduced by 57 acres (3%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the Tehachapi pocket mouse is considered to be very rare and has only been documented in a few scattered localities in the Tehachapi Mountains, from Tehachapi Pass on the northeast to the area of Mt. Pinos on the southwest, and around Elizabeth, Hughes, and Quail Lakes on the southeast. There are three CNDDDB occurrences of the Tehachapi pocket mouse along the southern edge of the TMV Planning Area. The Tehachapi pocket mouse was also documented during trapping surveys in and adjacent to the study area as recently as 2010 (Cypher et. al. 2010, Dudek 2009); occurrences were in the southeastern portion of the TMV Planning Area between Oso and Dark Canyons near the southern border of the study area, and in and near the Bi-Centennial and Tri-Centennial conservation easement areas. All occurrences of the Tehachapi pocket mouse are within the Antelope-Fremont Valley watershed, and it is possible that the ridgeline north of this watershed poses obstacles to the expansion of its range. Development in Oso Canyon could affect two populations of Tehachapi pocket mouse documented in the TMV Planning Area.

In general, surface-disturbing activities are incompatible with the persistence of native small mammal populations, and as this species occurs in small, scattered populations within a limited range, it is highly vulnerable to local extirpation from natural or human-related disturbance. In addition, the indirect effects of human development have the potential to adversely affect this species. An estimated 1,071 acres (95%) of modeled habitat for this species would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the Tehachapi pocket mouse. These include a preconstruction live-trapping program in modeled habitat within 100 feet of the disturbance zone within 7 days of ground-disturbing activities, with captured individuals relocated to modeled habitat away from the disturbance zone. Construction activities would also be monitored in proximity to modeled habitat, and exclusion fencing could be installed to prevent Tehachapi pocket mice from entering construction zones. Additional conservation measures would include implementation of an IPMP to avoid the exposure of the Tehachapi pocket mouse to rodenticides, and a grazing management plan for open space that maintains existing modeled habitat for the Tehachapi pocket mouse.

With respect to the two known occurrences of this species that could be affected by proposed development in Oso Canyon, TRC would commit to avoiding all modeled habitat, avoiding all known occurrences, or implementing the following mitigation and minimization measures: (1) conducting research throughout modeled habitat in the TU MSHCP Mitigation Lands to better determine species distribution and habitat preference; (2) for the westerly occurrence area, demonstrating a minimum of four Tehachapi pocket mouse occurrences in conserved open space through field survey work and a written survey report filed with the Service, upon approval of which development of the westerly occurrence area would be authorized to occur; and (3) for the easterly occurrence, demonstrating a minimum of two additional Tehachapi pocket mouse occurrences in conserved open space through field survey work and a written survey report filed with and approved by the

Service, and minimizing effects by limiting development activities to a road and subsurface infrastructure within 150 feet of the mapped known occurrence trap line location. Prior to commencing ground disturbance activities, TRC would consult with the Service to identify and implement design features (e.g., culverts beneath the road) to minimize effects in this occurrence area.

Given the limited and concentrated range of the species, its known occurrence in the TMV Planning Area (and potential effects on two known populations), and because little is known about the ecology of the species, it is anticipated that the loss of 3% of modeled habitat under the Proposed TU MSHCP Alternative would result in a moderate effect on the Tehachapi pocket mouse in the study area, and a moderate effect on the population rangewide. This alternative would not substantially affect this species.

#### *Coast Horned Lizard*

Modeled primary habitat for the coast horned lizard would be reduced by 3,959 acres (10%) in the study area under the Proposed TU MSHCP Alternative; modeled secondary habitat would be reduced by 3 acres (5%) (Table 4.1-3). As described in Section 3.1, Biological Resources, the coast horned lizard is endemic to California and is broadly distributed through the foothills of the Sierra Nevada and throughout most of coastal, central and southern California. Coast horned lizards were observed in the study area, primarily in the southwest portion of the TMV Planning Area, southeast of Dry Field Canyon and north of Oso Canyon. The species has also been observed in the southeast portion of the TMV Planning Area, in the northwestern corner of Castac Lake at Grapevine Creek, and in the north-central portion of the TMV Planning Area. An estimated 37,074 acres (90%) of modeled primary habitat and 51 acres (82%) of modeled secondary habitat for this species would be conserved in open space under this alternative.<sup>4</sup> As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on coast horned lizard, including conservation of eight of the 12 known occurrences of the species in the southwestern portion of the TMV Planning Area. In addition, avoidance/minimization measures would be implemented, including exclusion fencing for construction perimeters and biological monitoring. Preconstruction surveys would be conducted in modeled primary and secondary habitat by a Service-approved Tejon Ranch Biologist, and reasonable efforts to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed would be taken. Given the relatively widespread distribution of the coast horned lizard throughout the region, and because 90% of modeled primary habitat and 82% of modeled secondary habitat would be conserved in open space, it is anticipated that the loss of 10% of modeled primary habitat and 5% of modeled secondary habitat under the Proposed TU MSHCP Alternative would result in a minor effect on coast horned lizard in the study area, and a

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<sup>4</sup> The percentages of modeled secondary habitat conserved and lost for coast horned lizard only sum to 87% under the Proposed TU MSHCP Alternative (Table 4.1-3). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled secondary habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Two-Striped Garter Snake*

Modeled habitat for the two-striped garter snake would be reduced by 34 acres (9%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the two-striped garter snake is endemic to southern California and Baja California, Mexico. The species ranges from the southeastern slope of the Diablo Range and the Salinas Valley south along the south Coast and Transverse Ranges to the Mexican border, and also on Santa Catalina Island. However, it is only found in about 60% of its historic range, and is now common only in eastern San Diego County. The two-striped garter snake has been observed in the TMV Planning Area east of Rising Canyon, in Dry Field Canyon, in Bear Trap Canyon, at Castac Lake, and at a stock pond south of Castac Lake; the species is expected to occur throughout modeled habitat in the study area.

An estimated 254 acres (70%) of modeled habitat for this species would be conserved in open space under this alternative.<sup>5</sup> As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the two-striped garter snake, including either daily preconstruction surveys or the installation of an exclusion fence around the work zone. A Service-approved biologist would perform an initial clearance survey followed by periodic checks to verify that the fencing is intact and functioning. The Service-approved Tejon Ranch Biologist would make reasonable efforts to capture and relocate any observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed. In addition, all currently known occurrences of two-striped garter snake in the southwestern and central portions of the TMV Planning Area east of Rising Canyon, in Dry Field Canyon, and in Bear Trap Canyon would be conserved under this alternative.

In consideration of the range of this species, and the above conservation measures, including conservation of 70% of modeled habitat in open space, it is anticipated that the loss of 9% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor to moderate effect on two-striped garter snake in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Fort Tejon Woolly Sunflower*

Modeled habitat for Fort Tejon woolly sunflower would be reduced by 5,368 acres (9%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the overall geographic distribution of the Fort Tejon woolly sunflower is extremely restricted. The range of the Fort Tejon woolly sunflower is considered to be the southern Tehachapi Mountains (near Fort Tejon) and the Sierra Madre Mountains in the southeastern–outer south Coast Ranges (University of California Berkeley 2011). Presence/absence surveys in 2007 detected 36 occurrences of Fort Tejon woolly sunflower in the TMV Planning Area.

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<sup>5</sup> The percentages of modeled habitat conserved and lost for two-striped garter snake only sum to 79% under the Proposed TU MSHCP Alternative (Table 4.1-3). This is attributable to the assumption in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages). It is likely that modeled habitat conserved is underestimated because riparian areas have not been fully considered in the model.

An estimated 52,046 acres (91%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative. All of the 36 previously observed occurrences would be preserved in open space under this alternative. In addition, as summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on Fort Tejon woolly sunflower, including preconstruction surveys in suitable habitat within 150 feet of a disturbance zone during the appropriate survey season to determine presence or absence, and establishment of protective barriers around known occurrences to avoid disturbance during construction. Given the preservation of 91% of modeled habitat for this species in open space, and all known occurrences in the study area, as well as the avoidance and minimization measures that would be implemented to reduce effects on additional occurrences detected prior to construction, it is anticipated the loss of 9% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on Fort Tejon woolly sunflower in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Kusche's Sandwort*

Modeled habitat for Kusche's sandwort would be reduced by 2,097 acres (7%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the overall geographic distribution of the Kusche's sandwort is relatively limited. According to the Jepson Online Interchange, Kusche's sandwort occurs in the following subregions of the California Floristic Province: southern Sierra Nevada, western Transverse Ranges, and the San Gabriel Mountains (University of California, Berkeley 2011). There are no CNDDDB records of Kusche's sandwort in the study area, although seven occurrences of Kusche's sandwort were observed in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 28,407 acres (93%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative. All seven observed locations would be conserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on Kusche's sandwort, including preconstruction surveys in modeled habitat within 150 feet of a disturbance zone during the appropriate survey season to determine presence or absence, and marking known locations with a protective barrier to avoid disturbance during construction. Given the preservation of 93% of modeled habitat for this species in open space, as well as all known occurrences in the study area, and the avoidance and minimization measures that would be implemented to reduce effects on additional occurrences detected prior to construction, it is anticipated the loss of 7% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on Kusche's sandwort in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Round-Leaved Filaree*

Modeled habitat for round-leaved filaree would be reduced by 4,997 acres (9%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the range of the round-leaved filaree extends from Baja California (northern Mexico) to Oregon (California Native Plant Society 2011). While apparently well distributed in central and northern California, it is very rare in southern California (Reiser 2001). There are no CNDDDB records

of round-leaved filaree in the study area, although 11 occurrences were observed in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 53,076 acres (91%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on round-leaved filaree, including completion of preconstruction surveys in suitable habitat within 150 feet of a disturbance zone during the appropriate survey season and when the species is detectable to determine presence or absence, and marking known locations with a protective barrier to avoid disturbance during construction. Known or future detected populations of round-leaved filaree would be conserved in one of two ways under this alternative: (1) three of 11 known occurrences, totaling approximately 220 to 420 individuals, would be conserved in TMV Planning Area Open Space; or (2) at least three occurrences would be conserved in TMV Planning Area Open Space, including two known occurrences, representing approximately 120 to 220 individuals, and any new occurrence(s) documented in TMV Planning Area Open Space prior to development, such that the new occurrence(s) would total at least 100 individuals. The remaining eight occurrences would be directly affected by proposed development activities.

In consideration of the conservation of 91% of modeled habitat and implementation of the above conservation measures, it is anticipated that the loss of 9% of modeled habitat under this alternative, and the loss of eight out of 11 known occurrences (42 to 48% of individuals) in the study area, would have a moderate effect on the local population of round-leaved filaree, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Striped Adobe Lily*

Modeled habitat for striped adobe lily would be reduced by 2,737 acres (8%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the striped adobe lily is endemic to the southern Sierra Nevada foothills of eastern Tulare and Kern Counties (California Department of Fish and Game 2000). The distribution of striped adobe lily is extremely limited with only 23 occurrences known in the state, 16 of which are from Kern County (California Native Plant Society 2011, California Department of Fish and Game 2011). Three CNDDDB occurrences of striped adobe lily have been reported in the study area, although presence/absence surveys did not detect any occurrences within the TMV Planning Area or in the Bear Trap Turnout Improvement Project Area.

An estimated 29,476 acres (91%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative. All three known occurrences in the study area would be preserved in Existing Conservation Easement Areas under this alternative. In addition, as summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on striped adobe lily, including completion of preconstruction surveys in suitable habitat within 150 feet of a disturbance zone during the appropriate survey season and when the species is detectable to determine presence or absence, and marking known locations with a protective barrier to avoid disturbance during construction. In addition, if striped adobe lily is detected during preconstruction surveys, TRC would avoid habitat within 325 feet of the known occurrence. In consideration of these conservation measures, including preservation of 91% of modeled habitat in open space and all known occurrences of the species in

the study area, it is anticipated that the loss of 8% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on striped adobe lily in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tehachapi Buckwheat*

Modeled habitat for Tehachapi buckwheat would be reduced by 16 acres (1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the distribution of the Tehachapi buckwheat is extremely limited. The CNDDDB has only a single record of Tehachapi buckwheat that is reported within the Lebec USGS 7.5-minute quadrangle (California Department of Fish and Game 2011). This species was observed in 31 locations in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 2,562 acres (99%) of modeled habitat for this species would be conserved in open space under the Proposed TU MSHCP Alternative, as would all known occurrences of the species. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on Tehachapi buckwheat should additional occurrences be discovered prior to construction activities. These measures would include completion of preconstruction surveys in suitable habitat within 150 feet of a disturbance zone during the appropriate survey season to determine presence or absence, and marking known locations with a protective barrier to avoid disturbance during construction. If Tehachapi buckwheat is detected during preconstruction surveys, TRC would avoid habitat within 325 feet of the known occurrence. Weekly construction monitoring would be performed by a Service-approved biologist when ground disturbing activities are proposed within 325 feet of Tehachapi buckwheat occurrences. In addition, to preclude the invasion of Argentine ants, within the 325-foot buffer, TRC would (1) provide dry zones between development activities and buckwheat populations; (2) ensure that dry zone landscape container plants installed within the buffer zone are ant free prior to installation; (3) maintain natural hydrological conditions near the buckwheat occurrences; and (4) use drought-resistant plants in fuel modification zones to minimize irrigation requirements. Finally, both the occurrence and the associated buffer would be incorporated into open space areas for protection in perpetuity.

In consideration of the above conservation measures, including preservation of 99% of modeled habitat in open space and all known occurrences of the species in the study area, it is anticipated that the loss of 1% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on Tehachapi buckwheat in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tejon Poppy*

Modeled habitat for Tejon poppy would be reduced by 108 acres (1%) in the study area under the Proposed TU MSHCP Alternative (Table 4.1-3). As described in Section 3.1, Biological Resources, the distribution of the Tejon poppy is extremely limited. Tejon poppy is endemic to central and western Kern County. The Jepson Online Interchange for California Floristics (University of California, Berkeley 2011) lists the southwest Tehachapi Mountain Area and northern Western Transverse Ranges as the geographic regions in which Tejon poppy occurs. Although no occurrences of Tejon poppy were observed in the study area during presence/absence surveys, there are several CNDDDB records for the species adjacent to the study area.

An estimated 12,533 acres (99%) of modeled habitat for this species would be preserved in open space under this alternative. As summarized in Table 2-4, the Proposed TU MSHCP Alternative would include species-specific conservation measures to reduce potential effects on Tejon poppy should occurrences be discovered in the study area prior to construction, including completion of preconstruction surveys in suitable habitat within 150 feet of a disturbance zone during the appropriate survey season and when the species is detectable to determine presence or absence, and marking known locations with a protective barrier to avoid disturbance during construction.

As noted above, there are no known occurrences of Tejon poppy in the study area. Given the preservation of 99% of modeled habitat for this species in open space and the avoidance and minimization measures that would be implemented to reduce effects on occurrences should they be detected prior to construction, it is anticipated the loss of 1% of modeled habitat under the Proposed TU MSHCP Alternative would have a minor effect on Tejon poppy in the study area (should the species occur), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### ***Construction Effects***

There are a number of construction-related or temporary effects that could adversely affect the other Covered Species. The general categories of effects are described below.

#### ***Fugitive Dust***

Excessive dust from construction activities can decrease the vigor and productivity of vegetation communities through effects on light penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

#### ***Noise and Vibration***

Construction noise and vibration may affect behavior of wildlife in several ways. Excessive noise may affect birds, for example, in at least four ways: noise may cause birds to abandon nests that are otherwise suitable; noise may raise the level of stress hormones, interfering with sleep and other activities; intense noise can cause permanent injury to the auditory system; and noise can interfere with acoustic communication by masking important sounds or sound components (Dooling 2006). Similar effects may occur in other taxa. Noise may interfere with communication in toads and frogs, which use calls to advertise their location and attract mates (Barrass and Cohn 1984). Loud noise, such as that generated by off-road vehicles, may damage the hearing of some terrestrial species (Berry 1980, Brattstrom and Bondello 1983). Vibration may also directly disturb terrestrial species that occupy burrows, dens, and depressions, such as rodents, coyotes (*Canis latrans*), badgers (*Taxidea taxus*), and lagomorphs (rabbits and hares), causing them to abandon these areas. Excessive vibration might cause the collapse of burrow systems and dens in areas with highly friable soils.

#### ***Lighting***

Lighting may affect behavioral activities, physiology, population ecology, and ecosystems of both diurnal and nocturnal wildlife. Attraction to lights includes birds that may suffer injury or mortality due to collisions with lighted structures. Many insects are attracted to light sources, resulting in high numbers of prey being taken by nocturnal insectivores, such as bats. Repulsion of nocturnal wildlife

by lights is probably quite common and may cause them to avoid lighted areas in their normal home ranges. Wildlife reproduction may be affected by lighting in various ways. Movement to breeding areas, chorus behavior, and mate selection by some amphibians may be affected (Longcore and Rich 2004). Lighting may disturb the nighttime rest and sleep periods of diurnal species, including most passerine (perching) birds, having similar effects as noise, including annoying individuals and causing them to abandon nests that are otherwise perfectly suitable.

#### *Human Activity*

Increased human activity in construction areas could affect essential behavioral activities and physiology of wildlife. Similar to noise and lighting effects, increased human activity could disturb nocturnal animals during their rest or sleep periods, annoying them and causing them to abandon nests or den sites, as well as disrupting their normal biological rhythms and raising the level of stress hormones. Abandonment (even temporary) of active nests or dens increases the risk to eggs, nestlings, fledglings, and other dependent young. Flushing animals from nests, dens, and other refuges also increases their risk of injury or mortality from collisions with construction equipment and other vehicles, as well as predation. Human presence may also alter the spatial behavior of animals, causing them to avoid certain parts of their home range, which may prevent them from using critical resources, such as water.

#### *Hydrology*

Construction could result in hydrologic and water quality-related effects adjacent to and downstream of a construction area. Hydrologic alterations include changes in flow rates and patterns in streams and rivers and dewatering, which may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities.

#### *Chemical Pollution*

Erosion and chemical pollution (fuel, oil, lubricants, paints, release agents, and other construction materials) may affect riparian and upland sensitive natural communities and riparian habitats. The use of chemical pollutants during the development stage can decrease the number of plant pollinators, increase the prevalence of nonnative plants, and cause damage and destruction of native plants.

#### *Summary of Potential Effects Associated with Construction*

As noted above and summarized in Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives, species-specific conservation measures would be implemented under the Proposed TU MSHCP Alternative to reduce potential construction-related effects on other Covered Species. Representative measures that would reduce construction-related effects include erecting flagging or fencing to limit construction activities in sensitive habitat areas; completion of preconstruction surveys in modeled habitat; placement of exclusion fencing, as necessary, to prevent species from entering construction zones; and monitoring by the Service-approved Tejon Staff Biologist during construction. In addition, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects resulting from ground-disturbing activities (e.g., adverse effects on water quality, erosion). A list of representative BMPs is provided in the Mitigation, Monitoring, and Reporting Program (MMRP) from the TMV EIR (Kern County 2009a) (Appendix J). BMPs could include the

requirement that a stormwater pollution prevention plan (SWPPP) with erosion and sediment control options be developed; that soil stabilizers, such as straw mulch or erosion control blankets, be employed during construction; and that silt fences, fiber rolls, gravel bag berms or straw bale barriers be placed around environmentally sensitive areas to protect them. The requirement that any proposed development or ground-disturbing activity comply with local jurisdiction requirements is provided in Section 4.1.3.4, Mitigation Measures. In consideration of the conservation measures provided in the TU MSHCP, the additional mitigation measures likely required through Federal, state, or local permitting process, and the conservation and management of 129,318 acres of open space, it is unlikely that construction-related effects associated with the Proposed TU MSHCP Alternative would substantially affect any of the other Covered Species.

### ***Operations Effects***

Potential operational or long-term effects on the other Covered Species are described below.

#### *Chemical Pollution*

The use of chemical pollutants (i.e., pesticides, fertilizers, fungicides, herbicides, and rodenticides) by residents of new development may affect vegetation communities and habitat quality, may be toxic to species, can decrease the number of plant pollinators, and can increase the incidence of nonnative plants. Rodenticides are directly toxic to rodents but may also indirectly affect rodent predators, such as hawks and owls, coyotes, or snakes, either through loss or contamination of prey.

#### *Hydrology*

Increased urban and stormwater runoff due to the increase in post-construction impervious surfaces may result in long-term hydrologic alterations, including increased runoff volume, increased peak flow rates, increased duration of flows, and altered flow patterns in streams and rivers. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of nonnative plants and invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators.

#### *Nonnative Invasive Plant and Animal Species*

Nonnative species have been found to invade and become established after repeated burnings, clearing of vegetation for fire protection, or following periods of drought and overgrazing. Invasive plant species, especially upland species, often colonize modified or otherwise disturbed zones between development and natural open space areas. Invasive species can also colonize any upland area that is subject to disturbance, such as road shoulders; cleared zones along railroad lines; clearings along utility easements; and gaps in vegetation caused by excessive fire, fire breaks, and grazing. The introduction of nonnative invasive animal species (e.g., Argentine ants) could negatively affect native species that may be pollinators of or seed dispersal agents for sensitive natural communities and riparian habitats.

#### *Fire Regime*

Urbanization alters natural wildfire regimes in terms of frequency, extent, and intensity. Longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation. Shorter-than-natural

fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and, in some cases, can result in permanent transition of the vegetation to nonnative communities, such as annual grassland and weedy communities (Malanson and O'Leary 1982, Keeley 1987, O'Leary et al. 1992).

### *Lighting*

As described above for temporary effects, long-term lighting may affect behavioral activities, physiology, population ecology, and ecosystems of both diurnal and nocturnal wildlife.

### *Increased Human Activity and Domestic Pets*

As described above for temporary effects, increased human activity in open space areas could affect essential behavioral activities and physiology of wildlife. In addition, the use of the recreational trails could result in effects on vegetation communities, wildlife habitats, and wildlife species, including trampling of vegetation, creation of unauthorized trails, increased human presence around and potential harassment of or harm to wildlife (e.g., causing abandonment of nest sites, collection of animals, crushing by bicycles and horses), potential harassment of or harm to wildlife by pets, contact with pet fecal material, and potential for transmission of diseases and parasites as well as trash and debris.

### *Fuel Modification*

Grazing would continue to be the primary fuel management activity under the Proposed TU MSHCP Alternative. In addition, up to 1,773 acres in the TMV Planning Area Open Space would be subject to fuel modification activities (i.e., vegetation clearing/thinning) in accordance with the fire protection plan (Dudek 2008a) developed for the TMV Project. The 1,773 acres of fuel modification associated with Commercial and Residential Development Activities would not be expected to substantially degrade live-in habitat for the other Covered Species in oak savannah, grassland, scrub, and riparian habitats, and may benefit some species. Effects of removing flashy fuels, such as nonnative grasslands, on the other Covered Species would range from minimal to beneficial as discussed below.

With respect to birds, fuel modification may benefit raptors, such as the American peregrine falcon, burrowing owl, and golden eagle, by facilitating access to prey in areas where brush and other dense vegetation are removed. Raptors may hunt more effectively because prey would be more visible and are often more attracted to recently cut and mowed areas because of the greater availability of seeds and other food items. The tricolored blackbird may also benefit from greater accessibility to food because grassland habitat would open up and make seeds and insect prey more available. Bird species that use riparian areas, such as the least Bell's vireo, purple martin, willow flycatcher, western yellow-billed cuckoo, and yellow warbler, would not be affected by fuel modification activities because riparian areas/woodlands would not be subject to fuel modification, and there would be little or no change in habitat values. Similarly, bald eagles that forage around Castac Lake would not likely be affected by fuel modification activities because roost trees would not be subject to fuel modification. While mowing and selective thinning would likely have some beneficial effects on habitat quality for several species, there is a potential for some mortality or injury of individuals from crushing, contact with mowing blades and other thinning tools, and disturbance of burrows.

With respect to amphibians and reptiles, mowing in grassland areas and selective thinning in scrub areas may allow for occupation by harvester ants, which are the main prey for the coast horned lizard, western spadefoot, Tehachapi slender salamander, and yellow-blotched salamander. In addition, these species fulfill many of their life history requirements in riparian areas that would not be affected by fuel modification. These species may benefit from removal of thatchy grasses by occasional mowing and selective thinning of dead shrubs in adjacent upland areas because it may be easier to move, forage, and locate prey; dense nonnative grasslands tend to preclude small terrestrial species such as toads and salamanders because locomotion and prey detection become difficult. However, as noted above, while moving and selective thinning would likely have some beneficial effects on habitat quality for several species, there would be a potential for some mortality or injury of individuals from crushing, contact with mowing blades and other thinning tools, and disturbance of burrows.

With respect to insects, elderberry plants would not be removed for fuel modification and the valley elderberry longhorn beetle would not be affected. Similarly for mammals, riparian habitat would not be affected by fuel modification activities, so no effect on ringtail is anticipated. The Tehachapi pocket mouse could benefit from thinning of dense grasslands and some shrubs as long as native shrubs are still present as this species tends to forage on open ground and beneath shrubs (Zeiner et al. 1990). However, if present in these areas during fuel modification activities, there is some potential for individuals to be killed or crushed, or injured by mowing blades or other thinning tools

Finally, covered plant species are not expected to be affected by fuel modification activities. Preactivity surveys would be required to avoid effects on covered plant species during fuel modification activities associated with the residential and commercial development. In addition, none of the covered plant species are on the lists of species that would need to be removed or thinned from fuel modification areas, as outlined in the fire protection plan (Appendix F of the TU MSHCP).

#### *Summary of Potential Effects Associated with Operations*

As summarized in Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives, species-specific conservation measures would be provided under the Proposed TU MSHCP Alternative to reduce potential operation-related effects on other Covered Species. Representative measures that would reduce operation-related effects include incorporation of design features at the boundary between modeled habitat and development areas to reduce the potential for introduction of nonnative species; requiring that lighting be directed away from open space areas/modeled habitat; and installation of culverts under road connections within open space to facilitate movement of amphibians and small mammals. In consideration of the conservation measures provided in the TU MSHCP and the conservation and management of 129,318 acres of open space, it is unlikely that operation-related effects associated with the Proposed TU MSHCP Alternative would substantially affect any of the other Covered Species.

#### **Plan-Wide Activities**

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the Proposed TU MSHCP Alternative would have a limited potential to affect other Covered Species. Grazing activities would continue to have the potential to degrade habitat or water quality in areas where livestock congregate, or where overgrazing occurs. Ground-disturbing activities would have the potential to affect vegetation and habitat quality through erosion, compaction, and

sedimentation of surface waters, or degradation of riparian or wetland habitats, which, in turn could affect other Covered Species using those areas for breeding or foraging. Potential effects on wildlife movement and connectivity from Plan-Wide Activities are described in the Section 4.1.3.3, Wildlife Movement and Connectivity below.

Other Covered Species typical of grassland communities are the most likely to be affected by Plan-Wide Activities. Raptors, such as the American peregrine falcon, burrowing owl, and golden eagle, may benefit from grazing to the extent that grazing could maintain low vegetation cover and make prey more visible. The western spadefoot may hibernate in grasslands that are close to aquatic breeding sites, and could be subject to injury or mortality if trampled or crushed by livestock, or if habitat is substantially degraded. However, grazing could also benefit western spadefoot by reducing nonnative vegetation at breeding sites, allowing for longer inundation to support tadpole development. Birds, amphibians, and reptiles that fulfill one or more of their life history requirements in riparian areas, such as the least Bell's vireo, purple martin, willow flycatcher, western yellow-billed cuckoo, yellow warbler, two-striped garter snake, Tehachapi slender salamander, and western spadefoot, could also be directly affected by livestock use of water sources, or indirectly affected by sedimentation, erosion, or other adverse water quality effects associated with grazing and/or limited ground disturbance. Finally, plant species could be trampled or otherwise damaged by ground-disturbing activities.

The BMPS and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the Proposed TU MSHCP Alternative and would include provisions to minimize potential effects on sensitive vegetation communities (i.e., riparian and wetland areas) and other Covered Species in grassland areas as a result of ground-disturbing Plan-Wide Activities. For example, the Interim RWMP requires that a site evaluation be performed prior to any ground-disturbing activities to avoid sensitive resources to the extent practical, including special-status or unique or sensitive vegetation communities and the wildlife typical of those communities. In addition, potential effects on riparian and wetland habitats associated with Plan-Wide Activities that could result in ground disturbance would be required to comply with Federal, state and local grading and land use requirements, as described in Section 4.1.3.4, Mitigation Measures, below. Other Plan-Wide Activities, such as road and utility repair and maintenance, ancillary ranch activities, film production, and private recreation, which are also subject to Ranchwide Agreement limitations, are expected to continue to occur mostly in existing disturbed areas, roads, or trails, and would have only minor, temporary effects on other Covered Species.

Although Plan-Wide Activities under the Proposed TU MSHCP Alternative could result in minor effects on the other Covered Species, these effects would be reduced through implementation of the use restrictions and BMPs required pursuant to the Ranchwide Agreement, and any minimization measures required as a result of Federal, state, or local permitting processes. As such, Plan-Wide Activities would not be anticipated to substantially affect any of the other Covered Species. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, although they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the Proposed TU MSHCP Alternative.

## Other Special-Status Species

Other special-status species known to occur, or with the potential to occur, in the study area are summarized in Table 3.1-5 in Section 3.1, Biological Resources. These species are not proposed for coverage (wildlife) / conservation (plants) under the TU MSHCP because they have low potential to occur in the study area based on known ranges or on specific habitat or life history requirements; they have taxonomic issues or life history traits that make coverage difficult; and/or they meet the criteria for species covered by the TU MSHCP but are not likely to be affected by the Covered Activities.

Other special-status species include all plants or animals listed as threatened, endangered, candidates, or proposed for listing under the ESA or the California Endangered Species Act (CESA); animals fully protected in California; plants included on Lists 1, 2, 3, or 4 of the California Rare Plant Rank (CRPR) (formerly the California Native Plant Society Inventory of Rare and Endangered Plants of California (2008); and species of undescribed taxa.

## Commercial and Residential Development Activities

Habitat models for other special-status species were not developed to the same level of detail as those for the other Covered Species. Permanent effects on these species resulting from Commercial and Residential Development Activities were generally quantified by analyzing the vegetation communities identified in Table 3.1-5 as habitat associations for these species. Potential habitat factors, such as elevation limits, soils, and slopes, were not factored into these analyses. The acreages reported in Table 4.1-4 therefore likely overestimate the amount of suitable habitat available for the other special-status species. For this reason, habitat for these species is referred to as “potential habitat.” The other special-status species shown in Table 4.1-4 include those that are considered to have at least a moderate potential to occur in the study area and to potentially be affected by development.

The level of effect for the other special-status species would be relatively minor, ranging from 4% of potential habitat loss for yellow-breasted chat to 9% for northern harrier. Conservation would range from 84% of potential habitat for yellow-breasted chat to 95% for several of the other special-status species. As noted above, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects (e.g., water quality, erosion) resulting from ground-disturbing activities, which could benefit special-status species (Appendix J, Section 4.1.2.4, Mitigation Measures). In addition, the Proposed TU MSHCP Alternative includes a conservation measure to protect active bird nests. As summarized in Table 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives, the Service-approved Tejon Staff Biologist would establish appropriate buffers for active nests detected during preconstruction surveys in compliance with applicable regulatory protocols. Construction within the buffers would be avoided until the nests are abandoned or the young have fledged and are no longer dependent on the nest. Other conservation measures provided for Covered Species would also likely benefit other special-status species. For example, erection of exclusion fencing to limit Tehachapi slender salamanders from entering exclusion zones could benefit other amphibians and reptiles, such as slivery legless lizard.

In consideration of these conservation measures, additional mitigation measures likely required through Federal, state, or local permitting process, and the conservation and management of 129,318 acres of open space, it is unlikely the Proposed TU MSHCP Alternative would substantially affect any other special-status species. These effects would be greater than the under the No Action Alternative, where no development would occur.

Commercial and Residential Development Activities under this alternative could also result in indirect effects on other special-status species. Indirect effects for other special-status species under the Proposed TU MSHCP Alternative would be similar to those described for the Covered Species.

### **Plan-Wide Activities**

Under this alternative, Plan-Wide Activities would continue to occur in similar areas and at similar levels as Existing Ranch Uses under the No-Action Alternative. Potential effects on special-status species and their habitat would be the same as those described in Section 4.1.3.1, Vegetation Communities, above, as those communities relate to the habitat types of individual species. The effects would be comparable to the No Action Alternative, although they could be somewhat less given the acreage limitation on ground disturbance associated with this alternative.

**Table 4.1-4. Potential Effects on Vegetation Communities for Other Special-Status Species—Proposed TU MSHCP Alternative**

	Scrubs		Chaparrals		Grasslands		Savannahs		Woodlands		Conifer Forest		Riparian/ Wetland		Riparian Woodland		Wash		Agriculture		Total Acreage		Percent		
	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	
Total Acreage in Study Area <sup>1</sup>	7,841		14,145		24,944		33,120		48,736		3,956		703		59		863		232		125,991	8,645			
	7,515	326	13,599	814	22,406	2,485	31,036	2,046	46,043	2,643	3,883	73	589	29	54	1	861	1	5	227	125,991	8,645			
<b>Other Special-Status Species</b>																									
California spotted owl									x	x	x	x			x	x						49,980	2,717	95%	5%
Cooper's hawk									x	x	x	x			x	x						49,980	2,717	95%	5%
Long-eared owl									x	x	x	x			x	x						49,980	2,717	95%	5%
Northern harrier	x (foraging)	x			x (foraging)	x							x (nesting)	x					x (foraging)	x		30,515	3,067	90%	9%
Prairie falcon	x	x			x	x	x	x	x	x	x	x	x	x	x	x			x	x		111,531	7,830	93%	7%
Yellow-breasted chat													x	x	x	x						643	30	84%	4%
American badger	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x	x		111,803	7,802	93%	7%
San Bernardino ringneck snake	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		125,991	8,645	94%	6%
Silvery legless lizard	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		125,986	8,418	94%	6%
Aromatic canyon gooseberry			x	x	x	x	x	x	x	x	x	x										117,040	8,061	94%	6%
Calico monkeyflower	x	x	x	x					x	x	x	x			x	x						102,130	5,903	95%	5%
Delicate bluecup			x	x					x	x					x	x						59,696	3,458	95%	5%
Flax-like monardella			x	x					x	x	x	x										63,525	3,458	95%	5%
Golden violet	x	x	x	x					x	x	x	x										102,076	5,902	95%	5%
Pale-yellow layia					x	x	x	x	x	x												99,485	7,174	93%	7%
Palmer's mariposa lily			x	x			x	x	x	x	x	x	x	x	x	x						95,204	5,606	95%	6%
Piute Mountains navarretia	x	x	x	x	x	x	x	x	x	x	x	x							x	x		124,487	8,614	94%	6%
San Bernardino aster	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		112,387	7,604	93%	6%

<sup>1</sup>These acreages are derived and explained in Table 4.1-2.

### 4.1.3.3 Wildlife Movement and Connectivity

#### Commercial and Residential Development Activities

With respect to wildlife movement and habitat connectivity, the Proposed TU MSHCP Alternative would limit Commercial and Residential Development Activities to the western portion of the study area, with proposed commercial and resort residential loosely clustered around Interstate 5 (I-5) and Castac Lake, and mountain residential located generally to the north, east and west (Figure 2-5). The urban-type Commercial and Residential Development Activities in the western portion of the study area and around I-5 would generally represent a constraint to local wildlife movement due to land uses and infrastructure that are incompatible with maintaining wildlife habitat and use, as well as indirect effects on wildlife movement, such as lighting, noise, increased human activity, pets, and increased vehicle collisions. The mountain residential uses, as identified in the TMV Specific Plan Area, would include deed restrictions on the majority of the lot area to conserve habitat value in the TMV Specific Plan Area, and development in these areas would not substantially restrict movement for Covered Species, other special-status species, and common species because substantial habitat areas would be retained between developed lots. In addition, the open space in the northern and eastern portions of the study area would remain unconstrained, consistent with existing conditions, as discussed below.

The analysis of the potential effects on wildlife movement in the proposed low-density mountain residential area included a review of several wildlife linkage studies of high-mobility species (i.e., bobcat, mule deer, coyote, and mountain lion), including studies conducted in California in the Nature Reserve of Orange County (George and Crooks 2006), the Foothill-Trabuco region of southern Orange County (Dudek 2008b), the Southern Subregion HCP area of southern Orange County (Dudek 1995), the Puente-Chino hills area (Haas 2000), the Santa Monica Mountains (Riley et al. 2003), the Simi Hills of western Los Angeles County, and the Conejo Valley of eastern Ventura County (Tigas et al. 2002), Ventura County (Ng et al. 2004), and several other regions. The general findings of these various studies were that high mobility species, including species considered to be highly sensitive to urban development (i.e., bobcat and mountain lion), readily moved through low- and moderate-density residential developments with higher densities than would occur in the mountain residential area of the TMV Project. Studies indicate that lower mobility species (e.g., rodents, small birds) would also use and move through the low-density mountain residential area of the TMV Project. A study of voles by Andreassen et al. (1996), for example, found that voles moved through open space linkages of comparable dimensions to those that would be present in the TMV Project residential area. A study in western Oregon of moderate- and low-mobility ground-dwelling species and higher mobility birds documented substantial movement through urban and rural developments (Lloyd et al. 2006).

A least-cost corridor analysis was also conducted using commercial habitat linkage design software to model the safety movement corridor for a species through a landscape. Specifically, using information about a species' natural history (e.g., habitat requirement, home range size, typical movement patterns), the wildlife corridor model determines the wildlife movement route that optimizes movement with regard to minimizing energy expenditure in relation to distance moved (i.e., the least cost corridor or most permeable route). Research indicates that the preservation of the highest 1% values of the least-cost corridor (i.e., those routes that scored in the highest 1% of the permeability model) is sufficient to maintain sufficient species movement across a landscape

(Beier et al. 2006). The analysis replicates an earlier study by Penrod et al. (2003) entitled *South Coast Missing Linkages: A Linkage Design for the Tehachapi Connection* using updated modeling software and more detailed vegetation coverage. The analysis modeled the least-cost corridor for the same four species modeled by Penrod et al. (2003): mountain lion, mule deer, gray squirrel, and spotted owl. Virtually all of the highest 1% least-cost corridors for these four species in both the Penrod et al. (2003) analysis and this replicated analysis included the low-density mountain residential areas and the unconstrained habitat linkage along the northern portion of the study area.

Based on the least-cost corridor modeling, combined with review of the scientific literature above, it is anticipated that the proposed low-density mountain residential development associated with the Proposed TU MSHCP Alternative would not significantly affect the highest value movement corridors across the western Tehachapi landscape, nor would movement of most species be precluded through the low-density development areas. For example, species that use riparian features for movement (e.g., amphibians, reptiles, rodents, gray fox, bobcat) would not be substantially affected as the Proposed TU MSHCP Alternative includes project design features and conservation measures to facilitate movement of low-mobility species through the mountain residential area, including those applicable to the TMV Project. For example, ground disturbance in riparian areas would be avoided, except as necessary for road crossings and culverts (which must be designed to allow movement), and placement of fencing and trails would be designed to avoid potential effects on wildlife linkages.

Movement of species using other vegetation communities would also not be substantially affected because those communities are all well represented in the east-west corridor north of the TMV Planning Area. Specifically, the open space established under the Proposed TU MSHCP Alternative in the western portion of the study area would provide a substantial unconstrained habitat linkage in and north of the TMV Planning Area to convey east-west wildlife movement. Along the northern boundary of the study area, the open space habitat linkage would be approximately 1 to 2 miles wide. Table 4.1-5 shows the vegetation community acreages comprising the northern habitat linkage. Savannahs (43%), grasslands (31%), and woodlands (26%) are the dominant vegetation communities in the northern habitat linkage, totaling 6,706 acres (99%) of the linkage. These three general communities comprise 80% of the overall open space under this alternative, so their dominance of the northern habitat linkage is consistent with their broader distribution in the open space. The two vegetation communities most under-represented in the northern habitat linkage in relation to the overall open space are the scrubs and chaparrals. These two communities total about 17% of the overall open space, but only comprise 0.4% of the northern habitat linkage. However, as shown in Figure 3.1-2, the scrub and chaparral communities are mostly limited to the southern portion of the study area. Further, about 95% of these two communities already would be conserved in the overall open space, so the northern habitat linkage and TMV Planning Area Open Space cannot be reconfigured to include substantially more acreage of the scrubs and chaparrals. General wildlife use of these communities for linkages is discussed below.

**Table 4.1-5. Northern Habitat Linkage Vegetation Communities—Proposed TU MSHCP Alternative**

Vegetation Type <sup>1</sup>	Acreage of Vegetation Communities in Study Area <sup>2</sup>	Acreage of Open Space <sup>3</sup>	Acreage of Northern Habitat Linkage Open Space <sup>4</sup>
<b>Upland Communities</b>			
<b>Scrubs</b>			
Alluvial scrub	36	26	0
Mojavean scrub	6,951	6,951	0
Saltbush/buckwheat scrub	290	257	1
Scrub	564	281	13
<i>Total Scrubs</i>	<i>7,841</i>	<i>7,515</i>	<i>14 (&lt;1%)</i>
<b>Chaparrals</b>			
Brewer's oak scrub	2,720	2,719	0
Chaparral	11,050	10,370	13
Scrub oak	641	506	0
Undetermined chaparral	4	4	0
<i>Total Chaparrals</i>	<i>14,415</i>	<i>13,599</i>	<i>13 (&lt;1%)</i>
<b>Grasslands</b>			
Disturbed/nonnative grassland	6,411	4,197	713
Grassland	17,387	17,164	1,328
Native grassland	1,146	1,045	19
<i>Total Grasslands</i>	<i>24,944</i>	<i>22,406</i>	<i>2,060 (31%)</i>
<b>Savannahs</b>			
Black oak savannah	29	29	0
Blue oak savannah	5,114	5,050	1,023
Canyon oak savannah	432	432	0
Gray pine savannah	64	64	0
Interior oak savannah	276	276	0
Mixed oak savannah	11,997	11,965	775
Oak savannah	5,603	3,640	688
Undetermined savannah	678	678	0
White oak savannah	8,927	8,902	430
<i>Total Savannahs</i>	<i>33,120</i>	<i>31,036</i>	<i>2,916 (43%)</i>
<b>Woodland</b>			
Black oak woodland	2,701	2,543	19
Blue oak woodland	9,089	7,192	955
California buckeye woodland	338	338	24
Canyon oak woodland	6,193	6,051	186
Gray pine woodland	109	109	0
Interior oak woodland	761	740	3
Mixed oak woodland	28,086	27,668	458
Oak woodland	147	141	45
Pinyon pine woodland	285	255	0
Undetermined woodland	153	153	0
White oak woodland	874	853	40
<i>Total Woodland</i>	<i>48,736</i>	<i>46,043</i>	<i>1,730 (26%)</i>

Vegetation Type <sup>1</sup>	Acreage of Vegetation Communities in Study Area <sup>2</sup>	Acreage of Open Space <sup>3</sup>	Acreage of Northern Habitat Linkage Open Space <sup>4</sup>
<b>Conifer Forest</b>			
Conifer/mixed oak	912	839	0
Incense-cedar stand	4	4	0
Intermixed conifer	1,059	1,059	0
White fir stand	320	320	0
White fir/mixed oak	1,661	1,661	0
<i>Total Conifer Forest</i>	<i>3,956</i>	<i>3,883</i>	<i>0 (0%)</i>
<b>Riparian/Wetland Communities</b>			
<b>Riparian/Wetland</b>			
Riparian scrub	76	55	0
Riparian/wetland	10	4	0
Wetland	281	195	0
Lake	336	335	0
<i>Total Riparian/Wetland</i>	<i>703</i>	<i>589</i>	<i>0 (0%)</i>
<b>Riparian Woodland</b>			
Riparian woodland	43	38	0
Oak riparian	16	16	10
<i>Total Riparian Woodland</i>	<i>59</i>	<i>54</i>	<i>10 (&lt;1%)</i>
<b>Wash</b>			
Desert wash/riparian/seeps	841	841	0
Wash	22	20	0
<i>Total Wash</i>	<i>863</i>	<i>861</i>	<i>0 (0%)</i>
<b>Nonnative Land Covers</b>			
Agriculture	232	5	1
Developed	127	38	1
<i>Total Nonnative Land Covers</i>	<i>359</i>	<i>43</i>	<i>2 (&lt;1%)</i>
<b>Total<sup>1</sup></b>	<b>134,996</b>	<b>126,029</b>	<b>6,745</b>

<sup>1</sup> Slight differences between total acreages presented in Tables 4.1-1 and 4.1-5 may occur due to rounding and small slivers in shapefiles in the GIS analysis of vegetation communities (e.g., sliver polygons occur when different GIS coverages overlap but do not match exactly). These discrepancies are minor and do not alter the overall conclusions of the analysis or comparison of the relative merits of various alternatives and scenarios.

<sup>2</sup> Acreages in this column are based on the study area encompassing 134,996 total acres, or the total acreage in the study area (141,886 acres) less the acreage in Other Lands (6,890 acres).

<sup>3</sup> Acreages in this column are based on an assumed acreage of permanently conserved open space of approximately 126,034 total acres, which includes 12,795 acres of Existing Conservation Easement Areas, as well as the TU MSHCP Mitigation Lands, including 93,522 acres of Established Open Space, and 19,717 acres of TMV Planning Area Open Space. The TMV Planning Area Open Space acreage is less than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-6 (i.e., 23,001 acres) because of the greater Development Envelope area considered to assess biological effects. TMV Planning Area Open Space includes 1,773 acres of vegetation clearing/thinning for fuel modification in accordance with the fire prevention plan (Dudek 2008b) developed for the TMV Project.

<sup>4</sup> Acreages in this column reflect the contiguous unconstrained east-west habitat linkage across the northwestern portion of the study area. The percentage for the totals of each general vegetation type is calculated from the total 6,745 acres in the habitat linkage.

Most of the Tunis/Winters Ridge area would be protected under the Proposed TU MSHCP Alternative, and thus would provide unhindered wildlife movement through this regional linkage. The northern habitat linkage would primarily function for wildlife species that use savannah, grassland, and woodland habitats. Table 3.1-2 in Section 3.1, Biological Resources, lists representative wildlife observed in the study area and their general vegetation community associations. Of the approximately 70 taxa (including consolidated groups such as grebes, gulls, mice), about 41 (59%) use these three communities. Six species (9%) are mostly limited to scrubs and/or chaparrals, including California quail, California thrasher, California towhee, spotted towhee, wren tit, and Pacific kangaroo rat. These species likely would not use the northern habitat linkage due to a lack of suitable habitat. However, about 95% of these two communities already would be conserved in the open space areas associated with the Proposed TU MSHCP Alternative, providing more than sufficient conservation of habitat for these species. Several higher elevation species that occur in coniferous habitats, including mountain quail, Steller's jay, mountain chickadee, and Merriam's chipmunk, also may not use the northern habitat linkage due to a lack of suitable habitat. However, 98% of coniferous communities would be conserved in the study area under the Proposed TU MSHCP Alternative. Also, because the coniferous communities are limited to the higher elevations in the eastern portion of the study area, the northern habitat linkage cannot be reconfigured to include substantially more acreage of the coniferous communities. Further, many of the representative wildlife species observed in the study area are limited to riparian and wetland communities. Most of these species are highly mobile and/or migrant birds that occur around Castac Lake and are not dependent on continuous riparian zones. The habitat linkages do not need to be reconfigured to further benefit these species. Limited mobility amphibians such as the salamanders, frogs, and toads would not be expected to use the northern habitat linkage due to lack of wetland and riparian habitat; however, these species could move along Grapevine and Cuddy creeks and would not be impeded by development because wetland and riparian resources used by these species would be largely avoided. Finally, the northern habitat linkage would provide direct access to the undercrossing of I-5 located west of this linkage (GVRC6), which has been documented by camera stations to facilitate wildlife crossings of the interstate. Retaining linkages for wildlife to the existing I-5 undercrossing would allow wildlife to move between the study area east of I-5 and the Wind Wolves Preserve and Los Padres National Forest essentially as they do under existing conditions.

With respect to the California condor, although the ranch does serve as an important linkage between historic condor habitat areas east and west of the ranch, the proposed development on Tejon Ranch would not prevent condors from continuing to fly over Tejon Ranch, or to access areas further to the east or west of the ranch for the following reasons. The free-flying condors in the southern California subpopulation have been recorded flying over communities in the Tehachapi Mountains that have rural residential densities similar to or greater than that proposed for the TMV Project, including Pine Mountain Club and Frazier Park, Piñon Pines, Lake of the Woods, I-5, and even developed portions of Santa Clarita and the northern San Fernando Valley. Such flyovers have resulted in no measurable ill effects with respect to continued condor use of historical and current foraging, roosting, and nesting areas, as evidenced by Service GPS tracking data. These data indicate increasing use of these habitat areas since 2002, when the Service began to use GPS transmitters to track free-flying condors.

Furthermore, USGS recently released a report presenting a statistical analysis of GPS data collected from 2004 to 2009 for spatial behavior patterns in six management units in southern California, including Hopper Mountain and Bitter Creek National Wildlife Refuges, Wildlands Conservancy Wind Wolves Preserve, the TMV Specific Plan Area, the California Condor Study Area, and Tejon Ranch, excluding the TMV Specific Plan Area and the Condor Study Area (Johnson et al. 2010) (Appendix I). The study generated condor home ranges by estimating the utilization distribution that can then be used to estimate the probability and intensity of use of certain areas of interest. Appendix A of the USGS condor study includes the utilization distribution maps for 21 individual condors and shows urbanized areas of Santa Clarita in the estimated home ranges of 16 individuals, and the communities of Frazier Park and Pine Mountain Club in the home ranges of 18 individuals. The USGS condor study supports the conclusion that condors regularly fly over developed areas and that these areas, based on the GPS data, are part of their estimated home ranges. As such, the Service does not expect condors to avoid flying over similar areas in the TMV Specific Plan Area after buildout, particularly over the more outlying areas farther north from Castac Lake that would be characterized by lower residential development densities. For a more detailed discussion of the potential effects of the Proposed TU MSHCP Alternative on habitat connectivity for the California condor, refer to Master Response 1G, California Condor Overflight Habitat Connectivity, in Volume II of this Supplemental Draft EIS.

Based on the above, it is anticipated that Commercial and Residential Development under the Proposed TU MSHCP Alternative would result in moderate effects on wildlife movement and connectivity, particularly in western portion of the study area, and no effect on condor overflight of the study area. Although the northern habitat linkage would provide for movement across a large portion of the study area, these effects would be greater than the No Action Alternative, where no development would occur.

### **Plan-Wide Activities**

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the Proposed TU MSHCP Alternative would have a limited potential to affect wildlife movement and habitat connectivity in the study area. Specifically, existing roads that provide access to ranch infrastructure, hunting, other recreational activities or emergency vehicle access, could adversely affect species movement through direct mortality from vehicle strikes and/or loss of habitat connectivity. Other Plan-Wide Activities, such as utility lines and fences, may affect bird (i.e., collisions) or wildlife movement across the study area.

The BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the Proposed TU MSHCP Alternative and would include provisions to minimize the effects of roads, utility lines, and fences on wildlife movement and habitat connectivity. For example, these BMPs would include implementation of a dust control plan to reduce particulate matter emissions on well-traveled roads; maintenance of berms on dirt roads to handle minor stormwater flows; and construction of “wildlife friendly” fencing of the type and design necessary to allow for passage of wildlife, where possible (Tejon Ranch Company 2009). Additionally, conservation measures provided under the Proposed TU MSHCP Alternative, including restrictions on utility lines and fencing design restrictions in open space (see Tables 2-3 and 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives) would be implemented. Given the limited existing/proposed road network within open space areas under the Proposed TU MSHCP Alternative, and the BMPs and use restrictions

provided pursuant to the Ranchwide Agreement, it is anticipated that Plan-Wide Activities would result in minor effects on wildlife movement and connectivity. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, except they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the Proposed TU MSHCP Alternative.

#### 4.1.3.4 Mitigation Measures

As described above, the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP), would reduce the effects of the Proposed TU MSHCP Alternative on vegetation communities and wildlife, as would the provisions of the Ranchwide Agreement and applicable conservation easement restrictions for open space areas.

The Proposed TU MSHCP Alternative would also include species-specific conservation measures (see Tables 2-3 and 2-4 in Chapter 2, Proposed TU MSHCP and Alternatives) to avoid, minimize, and mitigate the effects of the Covered Activities on the Covered Species. If the Service issues an ITP to TRC for incidental take of the 27 species covered under the TU MSHCP, these measures would be enforceable under the ESA through the ITP and applicable conservation easements.

The following mitigation measure would further reduce potential effects on biological resources that may be associated with the Proposed TU MSHCP Alternative.

- ***Comply with Applicable Federal, State, and Local Biological Resource Protection Regulations.*** All development in the study area will comply, at a minimum, with applicable Federal, state, and local laws and regulations that directly or indirectly protect biological resources, including the CWA, Porter-Cologne, CESA, MBTA, BGEPA, and the Kern County General Plan. For example, all development will identify and implement structural and treatment BMPs, such as detention basins, bioswales, and stormwater filters or other project design features, as required by applicable Federal, state, and local water quality protection laws and regulations, to protect surface water quality and potential habitat for aquatic dependent species. In addition, development will avoid, minimize, and mitigate for effects on wetland areas, as required by applicable Federal, state, or local laws and regulations, and, as required by those laws and regulations, not result in a net loss of wetlands in the study area.

### 4.1.4 Condor Only HCP Alternative

#### 4.1.4.1 Vegetation Communities

Because the permanently conserved areas (open space) and ground disturbance areas would be the same under the Condor Only HCP Alternative as the Proposed TU MSHCP Alternative, the same direct and indirect effects on vegetation communities from Commercial and Residential Development Activities and Plan-Wide Activities would occur.

#### 4.1.4.2 Wildlife and Plant Species

##### California Condor

Similarly, because the permanently conserved areas and ground disturbance areas associated with Commercial and Residential Development Activities would be the same under the Condor Only HCP Alternative as the Proposed TU MSHCP Alternative, and because the Covered Activities under this

alternative would also be the same, development-related effects on the condor resulting from loss of foraging habitat, habituation to human structures and activities, risk of collisions with power lines, communication towers, and other artificial structures, and ingestion of microtrash would be the same as those described for the Proposed TU MSHCP Alternative. Effects associated with Plan-Wide Activities would also be consistent with those from the Proposed TU MSHCP Alternative. Conservation measures intended to protect the condor and their habitat that would be included in the TU MSHCP would still be included in the single-species (condor) HCP associated with this alternative.

## **Other Covered Species**

### **Commercial and Residential Development Activities**

Potential effects on the other Covered Species from Commercial and Residential Development Activities and Plan-Wide Activities under the Condor Only HCP Alternative would be generally consistent with those from the Proposed TU MSHCP Alternative. The only difference would be that development-related measures incorporated in the Proposed TU MSHCP Alternative that benefit other Covered Species would not be implemented through an HCP under this alternative. Under the Condor Only HCP Alternative, the protection measures for the other federally listed species would be determined as a result of project-specific review and approval processes triggered by applicant requests. For example, the TMV Project, which would be implemented under this alternative, would include a suite of mitigation measures for the other Covered Species similar to those included in the TU MSHCP, as set forth in the TMV Project Approvals (Kern County 2009c). It is uncertain whether similar measures would be applied to other development under this alternative, including West of Freeway and Lebec/Headquarters, although it is considered likely.

### **Plan-Wide Activities**

Potential effects on other Covered Species from Plan-Wide Activities (e.g., degradation of water quality from livestock use of water sources, ground disturbance of habitat) under the Condor Only HCP Alternative would be minor and similar to those described for the Proposed TU MSHCP Alternative. These effects would be reduced through the implementation of BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP), and the mitigation measure described in Section 4.1.3.4, Mitigation Measures. However, because the other Covered Species would not be covered under the HCP, any conservation measures implemented through other project approvals to benefit these species would not be subject to review, approval or oversight by the Service. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, although they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the Condor Only HCP Alternative.

## **Other Special-Status Species**

As noted above, because the permanently conserved areas and ground disturbance areas associated with Commercial and Residential Development Activities would be the same under the Condor Only HCP Alternative as the Proposed TU MSHCP Alternative, the same direct effects on vegetation types would occur. Although all of the conservation measures related to other Covered Species may not be implemented and/or required under this alternative, similar effects on other special-status

species would be anticipated. Potential indirect effects on other special-status species would also be the same as described for the Proposed TU MSHCP Alternative.

#### 4.1.4.3 Wildlife Movement and Connectivity

Effects on wildlife movement and connectivity under the Condor Only HCP Alternative would be the same as the effects under the Proposed TU MSHCP Alternative, given that the development and open space configurations would be the same.

#### 4.1.4.4 Mitigation Measures

As described above, the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would reduce the effects of the Condor Only HCP Alternative on vegetation communities and wildlife. However, only the species-specific conservation measures for the California condor (Table 2-3 in Chapter 2, Proposed TU MSHCP and Alternatives) would be implemented under this alternative.

The mitigation measures listed in Section 4.1.3.4, Mitigation Measures, for the Proposed TU MSHCP Alternative are also applicable to the Condor Only HCP Alternative.

### 4.1.5 CCH Avoidance MSHCP Alternative

#### 4.1.5.1 Vegetation Communities

Table 4.1-6 provides a summary of effects on vegetation communities from the CCH Avoidance MSHCP Alternative. The permanent and temporary direct and indirect effects of the Commercial and Residential Development Activities and Plan-Wide Activities are discussed below.

**Table 4.1-6. Potential Effects on Vegetation Communities—CCH Avoidance MSHCP Alternative**

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained in Open Space <sup>4</sup>	Acreage Removed by Development <sup>5,6</sup>
<b>Upland Communities</b>			
<b>Scrubs</b>			
Alluvial scrub	36	32	4
Mojavean scrub	6,951	6,951	0
Saltbush/buckwheat scrub	290	230	60
Scrub	564	335	228
<i>Total Scrubs</i>	<i>7,841</i>	<i>7,548</i>	<i>292</i>
<b>Chaparrals</b>			
Brewer's oak scrub	2,720	2,720	0
Chaparral	11,050	10,829	218
Scrub oak	641	587	53
Undetermined chaparral	4	4	0
<i>Total Chaparrals</i>	<i>14,415</i>	<i>14,140</i>	<i>271</i>

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained in Open Space <sup>4</sup>	Acreage Removed by Development <sup>5,6</sup>
<b>Grasslands</b>			
Disturbed/nonnative grassland	6,413	5,002	1,403
Grassland	17,387	17,164	170
Native grassland	1,147	1,035	111
<i>Total Grasslands</i>	<i>24,947</i>	<i>23,201</i>	<i>1,684</i>
<b>Savannahs</b>			
Black oak savannah	29	29	0
Blue oak savannah	5,114	5,036	78
Canyon oak savannah	432	432	0
Gray pine savannah	64	64	0
Interior oak savannah	276	276	0
Mixed oak savannah	11,997	11,965	1
Oak savannah	5,604	4,987	614
Undetermined savannah	678	678	0
White oak savannah	8,927	8,902	17
<i>Total Savannahs</i>	<i>33,121</i>	<i>32,369</i>	<i>710</i>
<b>Woodland</b>			
Black oak woodland	2,705	2,670	27
Blue oak woodland	9,093	8,456	630
California buckeye woodland	338	336	2
Canyon oak woodland	6,193	6,010	183
Gray pine woodland	109	109	0
Interior oak woodland	761	759	3
Mixed oak woodland	28,087	27,812	230
Oak woodland	147	134	12
Pinyon pine woodland	285	285	0
Undetermined woodland	153	153	0
White oak woodland	874	853	15
<i>Total Woodland</i>	<i>48,745</i>	<i>47,577</i>	<i>1,102</i>
<b>Conifer Forest</b>			
Conifer/mixed oak	912	889	23
Incense-cedar stand	4	4	0
Intermixed conifer	1,059	1,059	0
White fir stand	320	320	0
White fir/mixed oak	1,661	1,661	0
<i>Total Conifer Forest</i>	<i>3,956</i>	<i>3,933</i>	<i>23</i>
<b>Total Upland Communities</b>	<b>133,025</b>	<b>128,768 (97%)</b>	<b>4,082 (3%)</b>

Vegetation Community <sup>1,2</sup>	Total Acreage in Study Area <sup>3</sup>	Acreage Retained in Open Space <sup>4</sup>	Acreage Removed by Development <sup>5,6</sup>
<b>Riparian/Wetland/Wash Communities</b>			
Riparian/Wetland			
Riparian scrub	76	55	4
Riparian/wetland	10	8	0
Wetland	281	209	16
Lake	336	335	0
<i>Total Riparian/Wetland</i>	<i>703</i>	<i>607</i>	<i>20</i>
Riparian Woodland			
Riparian woodland	44	31	3
Oak riparian	16	16	0
<i>Total Riparian Woodland</i>	<i>60</i>	<i>47</i>	<i>3</i>
Wash			
Desert wash/riparian/seeps	841	841	0
Wash	22	12	3
<i>Total Wash</i>	<i>863</i>	<i>853</i>	<i>3</i>
<b>Total Riparian/Wetland/Wash Communities</b>	<b>1,626</b>	<b>1,507 (93%)</b>	<b>26 (2%)</b>
<b>Nonnative Land Covers</b>			
Agriculture	232	7	225
Developed	127	51	71
<b>Total Nonnative Land Covers</b>	<b>359</b>	<b>58 (16%)</b>	<b>296 (83%)</b>
<b>Total<sup>1</sup></b>	<b>135,010</b>	<b>130,333 (97%)</b>	<b>4,404 (3%)</b>

<sup>1</sup> Slight differences between total acreages presented in Tables 4.1-1 and 4.1-6 may occur due to rounding and small slivers in shapefiles in the GIS analysis of vegetation communities (e.g., sliver polygons occur when different GIS coverages overlap but do not match exactly). These discrepancies are minor and do not alter the overall conclusions of the analysis or comparison of the relative merits of various alternatives and scenarios.

<sup>3</sup> Acreages in this column are based on the study encompassing 134,996 acres, or the total of acreage of the study area (141,886) less the acreage in Other Lands (6,890 acres).

<sup>4</sup> Acreages in this column are based on approximately 130,339 total acres of permanently conserved open space for this alternative, which includes 12,795 acres in Existing Conservation Easement Areas, 93,522 acres in Established Open Space Areas, and 24,022 acres in TMV Planning Area Open Space.

<sup>5</sup> Development includes Commercial and Residential Development Activities in the TMV Planning Area and Lebec/Existing Headquarters Area. Acreages in this column are based on a total Development Envelope of 4,496 acres for this alternative.

<sup>6</sup> The analysis assumes 75% avoidance of effects on riparian/wetland vegetation communities. The total development acres for each alternative reflect this assumption, as well as the development acres for riparian vegetation communities and species models that are based on these riparian communities. The total development acreage presented in this table is 92 acres less than the total development acreage presented in Section 4.1.1.2, Methods, for this reason. This is a conservative assumption, as the CWA 404(b)(1) alternatives analysis submitted to USACE for the TMV Project shows avoidance of 99% of the federally jurisdictional areas and avoidance of 97% of the state and Federal jurisdictional waters overall (Kern County 2009a, April 15, 2011 Alternatives Analysis; Kern County 2009, November 13, 2009 Permit Application to CDFG).

## Commercial and Residential Development Activities

Construction associated with Commercial and Residential Development Activities under the CCH Avoidance MSHCP Alternative would result in moderate effects on vegetation communities, particularly agricultural lands. As shown in Table 4.1-6, 4,082 acres (3%) of upland communities and 26 acres (2%) of riparian/wetland/wash communities would be permanently affected by construction-related ground disturbance. Of these, many of the upland communities (excluding agriculture, disturbed/nonnative grassland, and developed) and all of the wetland communities are considered to be special-status by Federal, state, or local resources agencies. However, approximately 96% of total scrub vegetation, 98% of chaparrals, 98% of grasslands (excluding disturbed/nonnative grasslands), 98% of savannahs, 98% of woodlands, 99% of conifer forest, 86% of riparian/wetland, 78% of riparian woodland, and 99% of wash communities would be conserved in open space areas under this alternative (Table 4.1-6). Approximately 225 acres (97%) of agricultural land, a nonnative land cover, would be permanently removed by Commercial and Residential Development Activities.

Under this alternative, approximately 145 acres of special-status uplands would be located in rural large lot developments assumed to be developed as either 80-acre or 20-acre lots (Section 4.1.1.2, Methods - Analytical Framework for Assessing Effects on Biological Resources). For the purposes of this analysis, this area is not included in the open space, development area, or other lands categories described in Section 4.1.1.2. These areas would be in private lots and uses in these areas would be required to be consistent with those allowed in the Kern County General Plan (Kern County 2009b). It is assumed, however, that permanent ground disturbance associated with development would not be allowed, and that adverse effects on vegetation would not occur.

Finally, increased human presence and introduction of urban-type uses associated with development could also degrade vegetation communities. These indirect effects, as they related to potential effects on Covered Species and other special-status species, are described below.

All development under the CCH Avoidance MSHCP Alternative would be subject to project-specific approvals, and permanent or temporary effects on special-status vegetation communities, such as wetlands (regulated by USACE and RWQCB) or oak woodlands (protected under Kern County oak tree ordinances), would require approval by Federal, state, or local jurisdictions. For example, the proposed TMV Project, as approved by Kern County (Kern County 2009a), was designed to avoid all but 1% of wetlands in the TMV Planning Area in response to Federal and state permitting requirements (Central Valley Regional Water Quality Control Board 2011) (Appendix J). In addition, conservation measures under an MSHCP for the protection of Covered Species, including protections for communities such as wetland and riparian communities, would be expected to be implemented. In consideration of the proposed open space areas under the CCH Avoidance MSHCP Alternative, and with implementation of the mitigation measures discussed in Section 4.1.5.4, Mitigation Measures, it is anticipated that potential effects on sensitive vegetation communities from Commercial and Residential Development Activities would be minor, would not substantially degrade unique or sensitive habitats, and would not exceed a standard or criteria provided under another Federal, state, or local statute. These effects would be greater than the No Action Alternative where no development would occur.

## Plan-Wide Activities

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the CCH Avoidance MSHCP Alternative would have a limited potential to affect vegetation communities. Grazing would be expected to continue on approximately 130,339 acres of the study area (i.e., open space), and could damage vegetation in areas where livestock congregate and trample vegetation, or in areas where overgrazing occurs. Similarly, Plan-Wide Activities that could result in ground disturbance, such as repair and maintenance of back-country cabins, could affect vegetation communities through erosion or compaction. Other Plan-Wide Activities, such as film production and recreation, are expected to continue to occur mostly in existing disturbed areas, roads, or trail, and would generally have only minor, temporary effects on vegetation communities.

The BMPS and use restriction required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the CCH Avoidance MSHCP Alternative and would include, for example, provisions to minimize the effects of grazing on the landscape (e.g., distribution of water sources and seasonal rotation of livestock), as well site evaluation requirements prior to construction of new or relocated infrastructure. Similarly, conservation measures under an MSHCP for the protection of the Covered Species, including protections for communities such as wetland and riparian communities, would be implemented. Construction or maintenance activities with the potential to result in temporary or permanent effects on special-status vegetation communities (e.g., wetlands, oak woodlands) would be subject to approval by Federal, state or local jurisdictions, as described in Section 4.1.5.4, Mitigation Measures, which would reduce the potential for substantial, unmitigated effects on those vegetation communities. For example, construction-related BMPs prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would be required to minimize potential water quality effects as a result of ground-disturbing activities (Appendix J).

Finally, this alternative would limit permanent ground disturbance associated with construction of new roads and structures in open space necessary to support Plan-Wide Activities or Commercial and Residential Development Activities to 200 acres. As described above, the location of this acreage is not known at this time, but would be consistent with the Ranchwide Agreement and requirement to protect the conservation values of the ranch.

Although Plan-Wide Activities under the CCH Avoidance MSHCP Alternative could result in minor effects on vegetation communities, these effects would be reduced through implementation of BMPs prescribed as part of the Federal, state, or local permitting processes (Section 4.1.5.5, Mitigation Measures) or as prescribed under the Ranchwide Agreement use restrictions and BMPs, and would not degrade unique or sensitive habitats, or exceed a standard or criteria provided under another Federal, state, or local statute. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, although they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the CCH Avoidance MSHCP Alternative.

## 4.1.5.2 Wildlife and Plant Species

### California Condor

#### Commercial and Residential Development Activities

Similar to the Proposed TU MSHCP Alternative, Commercial and Residential Development Activities under the CCH Avoidance MSHCP Alternative would have the potential to adversely affect California condors and their habitat. Potential effects associated with the loss of foraging habitat; habituation to human structures and activities; increased risk of collisions with power lines, communication towers, and other artificial structures; and ingestion of microtrash, are summarized below.

#### *Loss of Foraging Habitat*

As summarized in 4.1.3.2 above, the Service prepared a revised habitat suitability model for the California condor for consideration in this Supplemental Draft EIS. The revised habitat model indicates a total of 3,159 acres of condor foraging habitat occur in the Development Envelope associated with the CCH Avoidance MSHCP Alternative; no condor critical habitat would be located in the Development Envelope. Commercial and Residential Development Activities would result in 4,496 acres of permanent ground disturbance in the study area. Ground disturbance would result in the direct loss of all of the suitable foraging habitat (3,159 acres) within the Development Envelope, and indirect effects (i.e., effects on foraging habitat within 0.5 mile of the Development Envelope) on 3,494 acres of suitable foraging habitat, including 1,307 acres of suitable foraging habitat in the Tejon Ranch critical habitat unit. In total, approximately 6,653 acres of suitable foraging habitat would be directly lost and indirectly affected as a result of Commercial and Residential Development Activities under the CCH Avoidance MSHCP Alternative.

Approximately 77,432 acres of suitable foraging habitat would be considered functional in the remaining open space of the study area. This includes all 23,000 acres of foraging habitat in the approximately 37,000-acre Condor Study Area. Additional habitat would be conserved in areas of the ranch outside of the study area through the Ranchwide Agreement.

As described for the Proposed TU MSHCP Alternative, to analyze potential effects on the condor population and its critical habitat, the Service also estimated potential food availability in the condor's range, focusing on the portion of the range currently used by the southern California subpopulation. The Service estimates there are currently more than enough potential carcasses from livestock, hunting, and other mortality of native ungulates and feral pigs in the condors' historic range in California to support not only the current condor population, but also one of the two free-flying population of 150 birds envisioned in the recovery plan and necessary to down list the condor to a threatened status (assuming mortality factors, particularly lead poisoning, are minimized or eliminated). Additionally, ranching and hunting is expected to continue at similar levels as currently exists under the No Action Alternative (i.e., 14,500 head of cattle), and is anticipated to provide ongoing food sources comparable to both the No Action Alternative and Proposed TU MSHCP Alternative, despite slight differences in open space areas under each alternative. The CCH Avoidance MSHCP Alternative would also conserve the historic and currently used traditional roost sites on Winters Ridge in the Condor Study Area and institute conservation measures that would further protect the condor, including the lead ban. Consequently, even with the Commercial and Residential Development Activities proposed in the study area under this alternative, given the estimated amount of foraging habitat that would remain on Tejon Ranch, and

the estimated food for condors that would be produced from cattle, pig, and native ungulate carcasses, and gut piles within foraging habitat in open space and other conserved areas on Tejon Ranch, it is likely that the ranch would continue to function as an essential and viable foraging area for the expanding condor population. Although the loss of foraging habitat resulting from Commercial and Residential Development Activities (direct/indirect loss of up to 6,653 acres of suitable foraging habitat) would be greater under this alternative than the No Action Alternative, this loss would not result in a substantial adverse effect on the condor population or its critical habitat.

### ***Habituation***

The potential effects of habituation on the California condor under this CCH Avoidance MSHCP Alternative would be similar to those under the Proposed TU MSHCP Alternative, however, at a somewhat reduced scale because of the smaller amount of development proposed under the this alternative. It is anticipated that conservation measures under an MSHCP to reduce the effects of habituation on condors (similar to those provided in the TU MSHCP) would further reduce these effects, and that the CCH Avoidance MSHCP Alternative would not result in a substantial adverse effect on the condor population or their critical habitat from habituation. The effects would be greater than those associated with the No Action Alternative, where habituation would be unlikely because development and associated infrastructure would not occur, and human presence/activity would not increase.

### ***Collisions with Power Lines and Towers***

Potential effects on the condor from collisions with power lines and vertical structures, such as transmission, communication, and cellular towers, under CCH Avoidance MSHCP Alternative would be similar to those associated with the Proposed TU MSHCP Alternative. As with the Proposed TU MSHCP Alternative, no new aboveground high-voltage towers/transmission lines, or aboveground structures/distribution lines would be built in the TMV Planning Area, although two existing lines could be permanently relocated within 1,000 feet of existing lines. All new transmission and distribution lines in the Development Envelope would be placed underground. Any future powerlines or towers proposed outside the Development Envelope would be subject to Service's review and approval. In consideration of these conservation measures, it is anticipated that the CCH Avoidance MSHCP Alternative would not result in a substantial adverse effect on the condor population or their critical habitat from collisions with powerlines or vertical structures. The potential for collision under this alternative would be greater than associated with the No Action Alternative, where no new power lines or towers would be constructed in the Development Envelope.

### ***Ingestion of Microtrash***

Potential effects associated with ingestion of microtrash under the CCH Avoidance MSHCP Alternative would be similar to those under the Proposed TU MSHCP Alternative, however, at a somewhat reduced scale because of the smaller amount of development proposed under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include conservation measures to reduce microtrash in the study area, and minimize the risk of increased exposure of condors to microtrash. In consideration of these conservation measures, it is anticipated that the CCH Avoidance MSHCP Alternative would not result in a substantial adverse effect on the condor population or their critical habitat from increased availability or ingestion of

microtrash. The potential for the occurrence of microtrash under this alternative would be greater than associated with the No Action Alternative, where no new development would occur, and human-related debris would not increase.

### Plan-Wide Activities

Plan-Wide Activities under the CCH Avoidance MSHCP Alternative would be the same as those discussed under the Proposed TU MSHCP Alternative, and would result in the same effects on the California condor, including anticipated benefits from livestock grazing (i.e., improved foraging habitat and provision of an ongoing for source for condors), and the potential for increased habituation and exposure to microtrash associated with increased human activity, construction work, and/or public access. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include conservation measures to reduce these potential effects, and the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) to govern these uses would continue to be implemented. Thus, while the level of condor activity on the ranch is expected to increase as their population continues to increase, it is anticipated the effects of Plan-Wide Activities on the California condor and its habitat would be minor given the conservation measures provided under the CCH Avoidance MSHCP Alternative. These effects would be somewhat greater than the No-Action Alternative, however, given the anticipated increased population of the condor and increased human presence in the study area under this alternative.

### Other Covered Species

Table 4.1-7 provides a summary of the potential effects of the CCH Avoidance MSHCP Alternative on modeled habitat for each of the other Covered Species. Habitat modeling for the other Covered Species is briefly described in Section 3.1.7, Other Wildlife Species Considered for Conservation under the TU MSHCP, both in general terms and for each Covered Species, and fully described in Appendix D. The permanent and temporary direct and indirect effects of the Commercial and Residential Development Activities and the Plan-Wide Activities are discussed below.

**Table 4.1-7. Potential Effects on Modeled Habitat of Other Covered Species—CCH Avoidance MSHCP Alternative**

Species	Species Model	Acreage of Modeled Habitat in Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2, 4</sup>	Acreage of Modeled Habitat Conserved <sup>3, 4</sup>
Tehachapi slender salamander	Suitable habitat	4,071	85 (2%)	3,978 (98%)
Western spadefoot	Suitable habitat	1,176	25 (2%)	1,057 (90%)
Yellow-blotched salamander	Suitable habitat	35,220	603 (2%)	34,560 (98%)
American peregrine falcon	Foraging	26,745	1,932 (7%)	24,668 (92%)
	Breeding	80	0 (0%)	80 (100%)
Bald eagle	Foraging	518	4 (1%)	499 (96%)
	Wintering	1,438	533 (37%)	905 (63%)
Burrowing owl	Breeding/foraging	24,947	1,684 (7%)	23,201 (93%)

Species	Species Model	Acreage of Modeled Habitat in Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2, 4</sup>	Acreage of Modeled Habitat Conserved <sup>3, 4</sup>
	Secondary breeding/foraging	8,073	517 (6%)	7,556 (94%)
Golden eagle	Foraging	33,894	2,204 (7%)	31,618 (93%)
	Breeding/foraging	33,057	710 (2%)	32,306 (98%)
	Primary breeding	48,029	1,100 (2%)	46,864 (98%)
Least Bell's vireo	Breeding/foraging	615	7 (1%)	579 (94%)
Little willow flycatcher	Foraging/stopover	986	7 (1%)	951 (96%)
Purple martin	Breeding/foraging	85,881	1,837 (2%)	83,927 (98%)
Southwestern willow flycatcher	Breeding/foraging	986	7 (1%)	951 (96%)
Tricolored blackbird	Foraging	18,557	806 (4%)	17,662 (95%)
	Primary breeding	290	16 (5%)	216 (75%)
Western yellow-billed cuckoo	Breeding/foraging	986	7 (1%)	951 (96%)
White-tailed kite	Foraging	9,019	1,451 (16%)	7,451 (83%)
Yellow warbler	Breeding/foraging	986	7 (1%)	951 (96%)
	Secondary foraging	51,753	1,123 (2%)	50,565 (98%)
Valley elderberry longhorn beetle	Suitable habitat	2,597	0 (0%)	2,578 (99%)
Ringtail	Suitable Habitat	99,253	4,216 (4%)	94,802 (96%)
Tehachapi pocket mouse	Suitable habitat	1,920	0 (0%)	1,920 (100%)
Coast horned lizard ( <i>frontale</i> and <i>blainvillii</i> populations)	Primary habitat	41,090	1,827 (4%)	39,201 (95%)
	Secondary habitat	62	1 (2%)	55 (88%)
Two-striped garter snake	Suitable habitat	364	33 (9%)	227 (62%)
Fort Tejon woolly sunflower	Suitable habitat	57,430	2,254 (4%)	55,152 (96%)
Kusche's sandwort	Suitable habitat	30,505	237 (1%)	30,268 (99%)
Round-leaved filaree	Suitable habitat	58,089	779 (1%)	57,283 (99%)
Striped adobe lily	Suitable habitat	32,217	482 (1%)	31,725 (98%)
Tehachapi buckwheat	Suitable habitat	2,579	0 (0%)	2,579 (100%)
Tejon poppy	Suitable habitat	12,676	81 (1%)	12,555 (99%)

<sup>1</sup> Acreages in this column are based on the study area encompassing 134,996 acres total, or the total acreage in the study area (141,886 acres) less the acreage in Other Lands (6,890 acres).

<sup>2</sup> Acreages in this column represent the acreage of modeled habitat lost in the 4,496-acre Development Envelope. Percentages represent the percent of modeled habitat lost relative to the acreage of modeled habitat in the study area.

Species	Species Model	Acreage of Modeled Habitat in Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2, 4</sup>	Acreage of Modeled Habitat Conserved <sup>3, 4</sup>
<p><sup>3</sup> Acreages in this column represent the acreage of modeled habitat conserved in Established Open Space, TMV Planning Area Open Space, and Existing Conservation Easement Areas. Percentages represent the percent of modeled habitat conserved relative to the acreage of modeled habitat in the study area.</p> <p><sup>4</sup> The percentages of modeled habitat conserved and lost may not sum to 100% for three possible reasons: (1) rounding error; (2) 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages; and (3) 145 acres in the Lebec/Existing Headquarters Area are assumed not developed but are also not included in open space. As a result, is likely that modeled habitat conserved in the Lebec/Existing Headquarters Area is underestimated because the County land use designations for this area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects). A more specific explanation for these differences is provided in the species-specific discussion below for the species where the sum is less than 90% (i.e., tricolored blackbird, coast horned lizard, and two-striped garter snake).</p>				

### Commercial and Residential Development Activities

As described in Section 3.1, Biological Resources, modeled habitat is composed of vegetation communities supporting the life history requirements of the Covered Species, along with other habitat suitability criteria appropriate for a particular species, such as soils or elevation. Therefore, for the purposes of this EIS, permanent loss of modeled habitat is used to assess direct effects on species. In addition to permanent ground disturbance, construction-related effects, including noise, toxins, and lighting, and operations effects, including increased human presence and introduction of urban-type uses associated with development, could indirectly affect other Covered Species, as described below.

#### Loss of Habitat

Table 4.1-7 indicates the extent of the permanent loss of modeled habitat for each of the other Covered Species under the CCH Avoidance MSHCP Alternative, as well as the extent of modeled habitat that would be conserved in the study area. While only some portion of each of these modeled habitats would represent the most suitable habitat for the Covered Species, in the absence of more detailed species habitat information, they are used here to conservatively represent the extent of suitable habitat loss for each species. For each of the Covered Species, the following evaluation considers the loss of modeled habitat, potential effects on known species occurrences within the study area (where applicable), as well as the overall range and rarity of the species in relation to the potential loss of modeled habitat.

In general, the primary conservation measure under the CCH Avoidance MSHCP Alternative would be conservation and management of 130,339 acres of open space. In addition, species-specific conservation measures, similar to those provided under the Proposed TU MSHCP Alternative, would be implemented. Where conservation measures are provided specifically to offset the loss of modeled habitat, they are summarized for each species below.

#### *Tehachapi Slender Salamander*

Modeled habitat for the Tehachapi slender salamander would be reduced by 85 acres (2%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the Tehachapi slender salamander has been detected at five locations in the study area, is endemic to California, and has a limited range, only occurring in Kern County.

Potential effects on Tehachapi slender salamander are considered in the context of the species' limited range and the difficulty of detecting species presence during surveys. An estimated 3,978 acres (98%) of modeled habitat for this species would be conserved in open space under the CCH Avoidance MSHCP Alternative. Similar to the Proposed TU MSHCP Alternative, this alternative would include species-specific conservation measures to reduce potential effects on the Tehachapi slender salamander, including preconstruction surveys in suitable habitat, reasonable efforts by a Service-approved biologist to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individual was removed, construction monitoring by a Service-approved biologist, installation of exclusion fencing, if appropriate, to prevent Tehachapi slender salamanders from entering construction zones, and placement of culverts under road connections to reduce the potential for the species to enter on-site roads. These conservation measures, including preservation of 98% of modeled habitat in open space, would reduce the potential effects on this species from the loss of habitat. In consideration of the species limited range, it is anticipated that the loss of 2% of modeled habitat under the CCH Avoidance MSHCP Alternative would have a moderate effect on the Tehachapi slender salamander in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Western Spadefoot*

Modeled habitat for the western spadefoot would be reduced by 25 acres (2%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the western spadefoot has not been detected in the TMV Planning Area and has low potential to occur in other parts of the study area. It is endemic to California and northern Baja California, and is primarily found below 3,000 feet amsl.

An estimated 1,057 acres (90%) of modeled habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on western spadefoot, including preconstruction surveys in suitable habitat, reasonable efforts by a Service-approved biologist to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individual was removed, buffers around egg masses and larvae if found during preconstruction surveys, and installation of exclusion fencing, if appropriate, to prevent western spadefoot from entering construction zones. In consideration of the low potential for occurrence in the study area, and because 90% of modeled habitat would be conserved in open space, it is anticipated that the loss of 2% of modeled habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on western spadefoot in the study area (if they are present), and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Yellow-Blotched Salamander*

Modeled habitat for the yellow-blotched salamander would be reduced by 603 acres (2%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the yellow-blotched salamander was detected in several drainages in the TMV Planning Area, and all known occurrences would be preserved generally north of Rising Canyon and south of Pastoria Canyon, east of Grapevine Peak in the vicinity of Silver, Monroe, and Squirrel

canyons, and along tributaries to Bear Trap Canyon. The species is endemic to California, specifically in Kern and Ventura Counties, and occurs at elevations between 1,400 and 7,496 feet amsl.

Potential effects on the yellow-blotched salamander are considered in the context of the species limited geographic range. An estimated 34,560 acres (98%) of modeled habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on yellow-blotched salamander, including preconstruction surveys in suitable habitat, reasonable efforts by a Service-approved Tejon Ranch Biologist to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individual was removed,, monitoring by a Service-approved biologist, and installation of exclusion fencing, if appropriate, to prevent yellow-blotched salamanders from entering construction zones. In consideration of these conservation measures, including preservation of 98% of modeled habitat in open space and preservation of all known occurrences, it is anticipated that the loss of 2% of modeled habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on yellow-blotched salamander in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *American Peregrine Falcon*

Modeled foraging habitat for the American peregrine falcon would be reduced by 1,932 acres (7%) in the study area under the CCH Avoidance MSHCP Alternative; no modeled breeding habitat would be lost under this alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the American peregrine falcon has not been documented to nest in the study area and has only been observed to be an occasional winter visitor. It has an extensive range that spans from Alaska south to northern Mexico and east across Arizona through Alabama, and is known to use a large variety of open habitats for foraging.

An estimated 24,668 acres (92%) of modeled foraging habitat and 80 acres (100%) of modeled breeding habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the American peregrine falcon, including preconstruction surveys in suitable breeding habitat, buffered protections around active nests, and monitoring by a Service-approved biologist. In consideration of the extensive range of the species, the fact that no known nesting populations would be affected by development activities, and because 92% of the modeled foraging habitat and 100% of modeled breeding habitat would be conserved and protected in open space, it is anticipated that the loss of 7% of modeled foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on American peregrine falcon that may nest or forage in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Bald Eagle*

Modeled winter roosting habitat for the bald eagle would be reduced by 533 acres (37%) in the study area under the CCH Avoidance MSHCP Alternative; modeled foraging habitat would be reduced by 4 acres (1%) (Table 4.1-7). As described in Section 3.1, Biological Resources, the bald eagle has a widespread distribution in North America, wintering from Alaska eastward to Newfoundland and southward locally to Baja California, Sonora, Texas, and Florida. In California,

breeding populations are more limited and restricted primarily to the northern Sierra. Winter roosting habitat in the study area is concentrated around and within 1 mile of Castac Lake, particularly to the south and east where trees are sufficiently large to support roosting substrate for bald eagles.

An estimated 905 acres (63%) of modeled winter roosting habitat would be conserved in open space under the CCH Avoidance MSHCP Alternative; 499 acres (96%) of modeled foraging habitat would be preserved (Table 4.1-7). Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include conservation measures to protect winter foraging habitat, including a prohibition on removal of preferred diurnal perches and high quality roost trees from fuel modification zones within 1 mile of Castac Lake, avoidance of snags and large trees within 100 feet of the shoreline of Castac Lake, and establishment of a setback from preferred roosting areas by a Service-approved biologist. The loss of 37% of modeled winter roosting habitat would likely reduce the use of Castac Lake by wintering bald eagles. However, the bald eagle does not breed on site and surveys indicate that a large wintering population does not occur in the study area. In consideration of the extensive range of the species and the conservation measures that would be implemented to protect the remaining modeled foraging and wintering habitat in the study area, it is anticipated that the loss of 37% of modeled wintering habitat and 1% of modeled foraging habitat under the CCH Avoidance MSHCP Alternative would have a moderate effect on wintering and foraging bald eagles in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Burrowing Owl*

Modeled breeding/foraging habitat for the burrowing owl would be reduced by 1,684 acres (7%) in the study area under the CCH Avoidance MSHCP Alternative; modeled secondary breeding/foraging habitat would be reduced by 517 acres (6%) (Table 4.1-7). As described in Section 3.1, Biological Resources, burrowing owls are infrequent winter visitor to the study area, and no breeding, resident, or wintering burrowing owls were detected on site during any of the focused surveys of the TMV Planning Area. In general, the burrowing owl is widespread in the United States and Canada, found in a wide variety of habitat types typically characterized by low-growing vegetation and burrows made by fossorial mammals, such as ground squirrels.

An estimated 23,201 acres (93%) of modeled breeding/foraging habitat and 7,556 acres (94%) of modeled secondary breeding/foraging habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on burrowing owl, including preconstruction surveys in suitable breeding habitat and protection of both non-nesting and nesting owls if observed on site. Given the extensive range of the species and their limited presence in the study area, and because 93% of the modeled breeding/foraging and 94% of modeled secondary breeding/foraging habitat would be protected in open space, it is anticipated that the loss of 7% of the modeled breeding/foraging and 6% of modeled secondary breeding/foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on burrowing owl in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect the species.

### *Golden Eagle*

Modeled foraging, breeding/foraging, and primary breeding habitat for the golden eagle would be reduced by 2,204 (7%), 710 acres (2%) and 1,100 acres (2%) in the study area, respectively, under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, within their range, golden eagles are sparsely distributed throughout most of California, occupying primarily mountain, foothill, and desert habitats. Golden eagles have been regularly observed in the TMV Planning Area since 1999 and are a documented breeding resident on site. Three active nest sites are currently known to occur in the study area.

An estimated 31,618 acres (93%) of modeled foraging habitat, 32,306 acres (98%) of modeled breeding/foraging habitat, and 46,864 acres (98%) of modeled primary breeding habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the golden eagle, including protection of all known active nests (primary and alternate) during the breeding season; preconstruction surveys (i.e., prior to approval of a grading plan to better incorporate avoidance planning and completion of baseline surveys in open space) to confirm nest activity and search for new nests; application of a view-shed analysis to any new nests discovered during preconstruction surveys; and implementation of development and recreational use setbacks and trail closures (during the nesting season) to avoid potential disturbance of golden eagle nests and associated foraging habitat. Given the extensive range of the species, the species-specific conservation measures that would be applied to active nest sites, and the combined high level of habitat conservation (i.e., 93% of the modeled foraging habitat, 98% of modeled breeding/foraging habitat, and 98% of primary breeding habitat would be conserved and protected), it is anticipated that the loss of modeled habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on the golden eagle population in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Least Bell's Vireo*

Modeled breeding/foraging habitat for the least Bell's vireo would be reduced by 7 acres (less than 1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the least Bell's vireo has not been detected in the study area, and the study area is not an area of focus in the Least Bell's vireo recovery plan (U.S. Fish and Wildlife Service 1998). However, the least Bell's vireo has a very limited distribution, and low reproductive success due to loss of riparian habitat and cowbird nest parasitism. Therefore, loss of any potential breeding habitat is an important consideration for this species.

An estimated 579 acres (94%) of breeding/foraging habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the least Bell's vireo, including preconstruction surveys in and immediately adjacent to suitable breeding/foraging habitat during the breeding season, and creation of a 500-foot buffer around nests if construction cannot be avoided during the breeding season. Although the net loss of 7 acres of riparian habitat under the CCH Avoidance MSHCP Alternative could affect the least Bell's vireo if they occur on site, appropriate management of the remaining 94% of modeled habitat (maintenance of a high proportion of the riparian areas suitable for this species in an early successional state) would reduce this effect. In consideration of the conservation measures provided

under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on least Bell's vireo in the study area (if present) and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Little Willow Flycatcher*

Modeled foraging/stopover habitat for the little willow flycatcher would be reduced by 7 acres (less than 1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, suitable foraging and stopover habitat exists in the study area, and little willow flycatchers have been detected near Castac Lake, Cuddy Creek, Beartrap Canyon, Rising Canyon, and along Grapevine Creek. However, the entire breeding range of the little willow flycatcher is located outside of the study area, and only migrant flycatcher have been observed in the study area.

An estimated 951 acres (96%) of modeled foraging/stopover habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would species-specific conservation measures to reduce potential effects on little willow flycatcher, including incorporation of design features at the boundary between modeled habitat and development areas to minimize the introduction of nonnative species and urban runoff into adjacent natural areas, and to minimize the effects of lighting and glare on little willow flycatcher habitat. Given that little willow flycatchers on migration have more general habitat requirements than breeding individuals, and that 96% of modeled little flycatcher foraging/stopover habitat would be protected in open space, it is anticipated that the loss of 1% of modeled foraging/stopover habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on little willow flycatcher stopping over and foraging in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Purple Martin*

Modeled breeding/foraging habitat for the purple martin would be reduced by 1,837 acres (2%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the purple martin breeds locally from British Columbia, eastward to Nova Scotia, and southward to Baja California, central Mexico, and the Gulf Coast. In California, the breeding populations are highly localized, primarily inland and along the central and southern coast. In the Tehachapi Mountains, the purple martin nests regularly in oak woodland, and has been detected in the oak woodland and oak savannah communities in the study area. Airola and Williams (2008) found the Tehachapi Mountains support 100 to 200 pairs of purple martin, and may be the one remaining area in California where purple martins regularly nest in oak woodland.

An estimated 83,927 acres (98%) of modeled habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would likely affect breeding sites in the TMV Planning Area that have been used by purple martin in the past, and could indirectly affect breeding pairs through competition with starling. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on purple martin, including identification and protection of any nests and known breeding pairs in the study area, and

implementation of a European starling management plan by a Service-approved biologist if determined necessary. These conservation measures, including preservation of 98% of modeled breeding/foraging habitat in open space, would reduce potential effects on this species from the loss of habitat. Given the apparent importance of the Tehachapi Mountains to this species, it is anticipated that the loss of 2% of modeled habitat under the CCH Avoidance MSHCP Alternative would have a minor to moderate effect on breeding and foraging purple martin in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Southwestern Willow Flycatcher*

Modeled breeding/foraging habitat for the southwestern willow flycatcher would be reduced by 7 acres (less than 1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, southwestern willow flycatchers breed in Arizona, New Mexico, California, southwestern Colorado, southern Nevada and Utah, and western Texas. The total number of southwestern willow flycatcher territories in 2002 was estimated to be approximately 1,100 to 1,200, and these territories were distributed in a large number of small breeding populations. These small, isolated breeding populations make the species particularly vulnerable to local extirpation. No southwestern willow flycatchers have been observed in the study area and the study area is not an area of focus in the southwestern willow flycatcher recovery plan (U.S. Fish and Wildlife Service 2002). However, the southwestern willow flycatcher has a low reproductive success due to loss of riparian habitat and cowbird nest parasitism. Therefore, loss of any potential breeding habitat is an important consideration for this species.

An estimated 951 acres (96%) of modeled breeding/foraging habitat would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the southwestern willow flycatcher, including preconstruction surveys in and immediately adjacent to suitable breeding/foraging habitat during the breeding season, and creation of a 500-foot buffer around any nests detected in preconstruction surveys if construction cannot be avoided entirely during the breeding season. Although the net loss of 7 acres of riparian habitat under the CCH Avoidance MSHCP Alternative could affect potential nesting southwestern willow flycatchers, appropriate management of the remaining 96% of modeled habitat (maintenance of a high proportion of the riparian areas suitable for the species in an early successional state) would reduce this effect. In consideration of the conservation measures provided under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on southwestern willow flycatcher in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Tricolored Blackbird*

Modeled foraging and primary breeding habitat for the tricolored blackbird would be reduced by 806 acres (4%) and 16 acres (5%) in the study area, respectively, under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, tricolored blackbirds have been observed nesting in the study area adjacent to Castac Lake, and modeled breeding habitat is clustered around that lake. About 99% of the population is endemic to California, and in 2011,

tricolored blackbirds nesting in Tulare Basin in Kern County represented approximately 34% of the California population.

An estimated 216 acres (75%) of modeled breeding habitat and 17,662 acres (95%) of modeled foraging habitat would be conserved in open space under this alternative.<sup>6</sup> Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on the tricolored blackbird, including preconstruction surveys for breeding birds and creation of a 500 foot buffer around any nesting colony if construction cannot be avoided entirely during the breeding season. The net loss of 16 acres of modeled breeding habitat under the CCH Avoidance MSHCP Alternative could affect nesting tricolored blackbird colonies in the study area. Appropriate management of the remaining 75% of modeled breeding habitat could reduce this effect, along with the species-specific conservation measures described above. In consideration of these conservation measures, and because the Development Envelope would not surround the entire lake under this alternative (although development would be more intensive around remaining areas of Castac Lake), it is anticipated that the loss of 4% of modeled foraging habitat and 5% of modeled breeding habitat under the CCH Avoidance MSHCP Alternative would have a moderate effect on tricolored blackbirds in the study area, and minor effect on population rangewide. This alternative would not substantially affect this species.

#### *Western Yellow-Billed Cuckoo*

Modeled breeding/foraging habitat for the western yellow-billed cuckoo would be reduced by 7 acres (less than 1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the western yellow-billed cuckoo nests at scattered locations in California in dense, riparian woodlands and requires a wide band of riparian habitat. This species has not been detected in the study area, and although vegetation communities indicative of breeding habitat have been modeled, suitable patch size for nesting western yellow-billed cuckoos has not been found in the study area.

An estimated 951 acres (96%) of modeled breeding/foraging habitat would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the western yellow-billed cuckoo, including preconstruction surveys and protection of nesting cuckoos if observed on site. Given the lack of suitable patch size for nesting western-yellow billed cuckoos, and because 96% of modeled breeding/foraging habitat would be conserved in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on yellow-billed cuckoo in the study area (if present),

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<sup>6</sup> The percentages of modeled primary breeding habitat conserved and lost for tricolored blackbird only sum to 80% under the CCH Avoidance MSHCP Alternative (Table 4.1-7). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled primary breeding habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *White-Tailed Kite*

Modeled foraging habitat for the white-tailed kite would be reduced by 1,451 acres (16%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the white-tailed kite breeds in Oregon, Washington, and Texas, but the primary breeding populations are found in California, occupying most areas west of the Sierra Nevada foothills and outside of the southeast deserts. The white-tailed kite is an infrequent winter visitor to the study area and there are no breeding records and few occurrence records of the species in the study area.

An estimated 7,451 acres (83%) of modeled foraging habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on white-tailed kite, including preconstruction surveys for active white-tailed kite nests during the breeding season prior to grading. In addition, although the species is not expected to breed in the study area, any active nests would be conserved and protected by a 500-foot buffer. Given the large range of the species, its limited presence in the study area, and because 83% of the modeled foraging habitat would be conserved and protected in open space, it is anticipated that the loss of 16% of modeled foraging habitat under the CCH Avoidance MSHCP Alternative would have a minor effect on white-tailed kite visiting or wintering in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Yellow Warbler*

Modeled breeding/foraging and secondary foraging habitat for the yellow warbler would be reduced by 7 acres (1%) and 1,123 acres (2%) in the study area, respectively, under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, in California, the yellow warbler has an extensive breeding range, nesting in riparian woodlands from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Yellow warblers have been observed in the TMV Planning Area and are expected to occur in a regular distribution in the study area based on these observations. Although nests have not been documented, this species is expected to nest in the study area within suitable habitat.

An estimated 951 acres (96%) of modeled breeding/foraging habitat and 50,565 acres (98%) of secondary foraging habitat would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the yellow warbler, including preconstruction surveys in or adjacent to suitable breeding habitat and protection of nesting yellow warblers if observed on site. As noted above, yellow warblers are sensitive to decreases in deciduous habitat, heterogeneity of riparian habitat and riparian corridor width. They also have reduced reproductive success due to cowbird nest parasitism and nest predation. Given these factors, the net loss of riparian habitat is an important consideration for this species. However, despite many local declines, yellow warblers currently occupy most of their former breeding range with the exception of the Central Valley. Given the high level of habitat conservation and protection (96% of modeled breeding/foraging habitat and 98% of secondary foraging habitat), and with the appropriate management of conserved riparian habitat in open space, it is anticipated that the loss

of 1% of modeled breeding/foraging habitat and 2% of modeled secondary foraging habitat under the CCH Avoidance MSHCP Alternative would result in a minor effect on yellow warblers in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Valley Elderberry Longhorn Beetle*

Modeled habitat for the valley elderberry longhorn beetle would not be lost in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the primary range of the valley elderberry longhorn beetle is in the Central Valley, although the species' distribution ranges from southern Shasta County to Fresno County. The host plants of the valley elderberry longhorn beetle are red or blue elderberry. Elderberry shrubs have been mapped at several locations in the TMV Planning Area, although no emergence holes were found on any shrub.

An estimated 2,578 acres (99%) of modeled habitat for the valley elderberry longhorn beetle would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the valley elderberry longhorn beetle, including development of an IPMP to protect elderberry shrubs. Given that no modeled habitat would be lost under this alternative and 99% of modeled habitat would be conserved in open space, it is anticipated that the CCH Avoidance MSHCP Alternative would have a minor effect on valley elderberry longhorn beetle in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Ringtail*

Modeled habitat for the ringtail would be reduced by 4,216 acres (4%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the ringtail occurs in the southwestern United States and is widely distributed in California. Potential ringtail scat has been observed in the TMV Planning Area; however, the observation was unverified and no occurrences of the ringtail were recorded in the TMV Planning Area during the course of extensive camera/scat station surveys in 2007.

An estimated 94,802 acres (96%) of modeled habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the ringtail, including preconstruction surveys within 300 feet of a disturbance zone to determine if ringtail (or signs of ringtail) are present in the area, the protection of the detected ringtail during the breeding season, and implementation of CDFG-coordinated avoidance measures if ringtails (or signs of ringtail) are detected in the disturbance zone during the non-breeding season. In addition, construction in modeled riparian, wash, and wetland habitat would be avoided to the extent practicable with the exception of road crossings and culverts.

The loss of 4,216 acres of modeled habitat would, at a minimum, reduce the amount of potential habitat for ringtail in the study area; however, given the extensive range of the species, its unconfirmed presence (or likely limited distribution, if present) in the study area, and because 96% of the modeled habitat would be conserved in open space, it is anticipated the loss of 4% of modeled

habitat would have a minor to moderate effect on ringtail in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Tehachapi Pocket Mouse*

Modeled habitat for the Tehachapi pocket mouse would not be reduced in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the Tehachapi pocket mouse is considered to be very rare and has only been documented in a few scattered localities in the Tehachapi Mountains. There are three CNDDDB-documented occurrences of the Tehachapi pocket mouse along the southern edge of the TMV Planning Area. The species was also documented during trapping surveys in and adjacent to the study area as recently as 2010 (Cypher et. al. 2010, Dudek 2009); occurrences were in the southeastern portion of the TMV Planning Area between Oso and Dark Canyons near the southern border of the study area, and in and near the Bi-Centennial and Tri-Centennial conservation easement areas.

An estimated 1,920 acres (100%) of modeled habitat for this species would be conserved in open space under this alternative. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the Tehachapi pocket mouse, including a preconstruction live-trapping program in modeled habitat within 100 feet of the disturbance zone within 7 days of ground-disturbing activities. Construction activities would also be monitored in proximity to modeled habitat, and exclusion fencing could be installed to prevent Tehachapi pocket mice from entering construction zones. In addition, all currently known occurrences of Tehachapi pocket mouse would be conserved in the Oso Canyon area of the TMV Planning Area under this alternative.

As noted above, in general, surface-disturbing activities are incompatible with the persistence of native small mammal populations and as this species occurs in small, scattered populations, within a limited range, it is highly vulnerable to local extirpation from natural or human-related disturbance. However, given that no modeled habitat would be lost under this alternative and that all known occurrences of the species would be preserved in open space, it is anticipated that the CCH Avoidance MSHCP Alternative would have a minor effect on Tehachapi pocket mouse in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Coast Horned Lizard*

Modeled primary and secondary habitat for the coast horned lizard would be reduced by 1,827 acres (4%) in the study area under the CCH Avoidance MSHCP Alternative; modeled secondary habitat would be reduced by 1 acre (2%) in the study area (Table 4.1-7). As described in Section 3.1, Biological Resources, the coast horned lizard is endemic to California and is broadly distributed through the foothills of the Sierra Nevada and throughout most of coastal, central and southern California. Coast horned lizards were observed in the TMV Planning Area and the northwestern corner of Castac Lake at Grapevine Creek.

An estimated 39,201 acres (95%) of modeled primary habitat and 55 acres (88%) of modeled secondary habitat for this species would be conserved in open space under this alternative.<sup>7</sup> Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on coast horned lizard, including conservation of 10 of the 12 known occurrences of the species in the southwestern portion of the TMV Planning Area (where the majority of the occurrences were found during surveys), installation of exclusion fencing around construction perimeters, and biological monitoring. Pre-construction surveys would be conducted in modeled primary and secondary habitat by a Service-approved biologist, and reasonable efforts to capture and relocate observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed would be taken.

Given the relatively widespread distribution of the coast horned lizard throughout the region, and because 95% of modeled primary habitat and 88% of modeled secondary habitat would be conserved and protected in open space, as well as 10 of the 12 known occurrences of the species in the study area, it is anticipated that the loss of 4% modeled primary habitat and 2% modeled secondary habitat under the CCH Avoidance MSHCP Alternative would result in a minor effect on coast horned lizard in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Two-Striped Garter Snake*

Modeled habitat for two-striped garter snake would be reduced by 33 acres (9%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the two-striped garter snake is endemic to southern California and Baja California, Mexico. It is only found in about 60% of its historic range, and is now common only in eastern San Diego County. The two-striped garter snake has been observed in the TMV Planning Area east of Rising Canyon, in Dry Field Canyon, in Bear Trap Canyon, at Castac Lake, and at a stock pond south of Castac Lake; the species is expected to occur throughout modeled habitat in the study area.

An estimated 227 acres (62%) of modeled habitat for this species would be conserved in open space under this alternative.<sup>8</sup> Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce potential effects on the two-striped garter snake, including either daily preconstruction surveys, or the installation of an exclusion fence around the work zone. The Service-approved Tejon Ranch Biologist would make reasonable efforts to capture and relocate any observed individuals to suitable habitat that is the closest distance to the Disturbance Area from where the individuals were removed. In addition, all

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<sup>7</sup> The percentages of modeled secondary habitat conserved and lost for coast horned lizard only sum to 90% under the CCH Avoidance MSHCP Alternative (Table 4.1-7). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled secondary habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

<sup>8</sup> The percentages of modeled habitat conserved and lost for two-striped garter snake only sum to 71% under the CCH Avoidance MSHCP Alternative (Table 4.1-7). This is attributable to the assumption in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages). It is likely that modeled habitat conserved is underestimated because riparian areas have not been fully considered in the model.

currently known occurrences of two-striped garter snake in the southwestern and central portions of the TMV Planning Area east of Rising Canyon, in Dry Field Canyon, and in Bear Trap Canyon would be conserved under this alternative.

In consideration of the range of this species, and the above conservation measures, including conservation of 62% of modeled habitat in open space, it is anticipated that the loss of 9% of modeled habitat under the CCH Avoidance MSHCP Alternative would have a minor to moderate effect on two-striped garter snake in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Fort Tejon Woolly Sunflower*

Modeled habitat for Fort Tejon woolly sunflower would be reduced by 2,254 acres (4%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the overall geographic distribution of Fort Tejon woolly sunflower is extremely restricted, with the range considered limited to the southern Tehachapi Mountains and the Sierra Madre Mountains in the southeastern-outer south Coast Ranges. Presence/absence surveys in 2007 detected 36 occurrences in the TMV Planning Area.

An estimated 55,152 acres (96%) of modeled habitat for Fort Tejon woolly sunflower would be preserved in open space under this alternative (Table 4.1-7). One of the 36 known occurrences of this species in the study area would be removed as a result of proposed development activities. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys and establishment of protective barriers around known occurrences. Although the CCH Avoidance MSHCP Alternative would result in local effects on species abundance, given the conservation of 96% of modeled habitat and implementation of the above conservation measures, it is anticipated that the loss of 4% of modeled habitat under this alternative would have a minor effect on Fort Tejon woolly sunflower in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Kusche's Sandwort*

Modeled habitat for Kusche's sandwort would be reduced by 237 acres (1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described above, the overall geographic distribution of Kusche's sandwort is limited to the southern Sierra Nevada, western Transverse Ranges, and the San Gabriel Mountains. There are no CNDDDB records of Kusche's sandwort in the study area, although seven occurrences were observed in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 30,628 acres (99%) of modeled habitat for Kusche's sandwort would be preserved in open space under this alternative (Table 4.1-7). However, all known occurrences would be removed as a result of proposed development activities. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys and establishment of protective barriers around known occurrences, outside of those initially affected. Although 99% of modeled habitat would be preserved in open space under the CCH Avoidance MSHCP Alternative, the loss of all known occurrences of this species would result in a substantial effect on Kusche's sandwort in the

study area, and minor to moderate effects on the rangewide population. This alternative would not substantially affect this species.

#### *Round-Leaved Filaree*

Modeled habitat for round-leaved filaree would be reduced by 779 acres (1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the round-leaved filaree extends from Baja California to Oregon. While apparently well distributed in central and northern California, it is very rare in southern California. There are no CNDDDB records of round-leaved filaree in the study area, although 11 occurrences were observed in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 57,283 acres (99%) of modeled habitat for round-leaved filaree would be preserved in open space under this alternative (Table 4.1-7), as would all known occurrences of this species in the study area. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys and establishment of protective barriers around known occurrences during construction. Given the conservation of 99% of modeled habitat in open space, the preservation of all known occurrences in the study area, and implementation of the above conservation measures, it is anticipated that the loss of 1% of modeled habitat under the CCH Avoidance MSHCP Alternative would result in a minor effect on round-leaved filaree in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Striped Adobe Lily*

Modeled habitat for striped adobe lily would be reduced by 482 acres (1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the distribution of striped adobe lily is extremely limited, within only 23 occurrences known in the state. There are three CNDDDB records of striped adobe lily in the study area, although presence/absence surveys completed in 2007 did not detect any occurrences in the TMV Planning Area.

An estimated 31,725 acres (98%) of modeled habitat for striped adobe lily would be preserved in open space under this alternative (Table 4.1-7), as would all known occurrences of this species in the study area. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys and establishment of protective barriers around known occurrences during construction. Given the conservation of 98% of modeled habitat in open space, the preservation of all known occurrences in the study area, and implementation of the above conservation measures, it is anticipated that the loss of 1% of modeled habitat under CCH Avoidance MSHCP Alternative would result in a minor effect on striped adobe lily in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tehachapi Buckwheat*

Modeled habitat for Tehachapi buckwheat in the study area would not be reduced under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the distribution of Tehachapi buckwheat is extremely limited, within only a single CNDDDB record

reported within the Lebec USGS 7.5-minute quadrangle. This species was observed in 31 locations during presence/absence surveys in the TMV Planning Area completed in 2007.

All (2,579 acres) of the modeled habitat for Tehachapi buckwheat would be preserved in open space under this alternative (Table 4.1-7), as would all known occurrences of this species in the study area. Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys, establishment of protective barriers around known occurrences during construction, habitat avoidance within 325 feet of known occurrences, construction monitoring, and specific measures to preclude invasion by Argentine ants. Given the conservation of all of the modeled habitat in open space, the preservation of all known occurrences in the study area, and implementation of the above conservation measures, it is anticipated that the CCH Avoidance MSHCP Alternative would result in a minor effect on Tehachapi buckwheat in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tejon Poppy*

Modeled habitat for Tejon poppy would be reduced by 81 acres (1%) in the study area under the CCH Avoidance MSHCP Alternative (Table 4.1-7). As described in Section 3.1, Biological Resources, the distribution of Tejon poppy is extremely limited, where it is endemic to central and western Kern County. The CNDDDB includes 58 occurrences of this species; however no occurrences of Tejon poppy were observed in the study area during presence/absence surveys in the TMV Planning Area completed in 2007.

An estimated 12,555 acres (99%) of modeled habitat for Tejon poppy would be preserved in open space under this alternative (Table 4.1-7). Similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include species-specific conservation measures to reduce effects on this species, including preconstruction surveys and establishment of protective barriers around known occurrences during construction. Given the conservation of 99% of modeled habitat in open space and implementation of the above conservation measures, it is anticipated that the loss of 1% of modeled habitat under the CCH Avoidance MSHCP Alternative would result in minor effect on Tejon poppy in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### ***Construction and Operations Effects***

Construction and operations effects that could affect the other Covered Species under the CCH Avoidance MSHCP Alternative would be similar to those described under the Proposed TU MSHCP Alternative, although they would be somewhat reduced due to the smaller development footprint associated with this alternative. Potential effects related to fuel modification would also be similar to those described under the Proposed TU MSHCP Alternative.

Similar to the Proposed TU MSHCP Alternative, species-specific conservation measures would be implemented under the CCH Avoidance MSHCP Alternative to reduce potential construction and operation-related effects on other Covered Species. In addition, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects resulting from ground-disturbing activities. A list of representative BMPs is provided in the MMRP from the TMV EIR (Kern County

2009a), which is included as Appendix J to this EIS. The requirement that any proposed development or ground-disturbing activity comply with local jurisdiction requirements is provided in Section 4.1.5.4, Mitigation Measures. In consideration of the species specific conservation measures associated with this alternative, the additional mitigation measures likely required through Federal, state, or local permitting process, and the conservation and management of 130,339 acres of open space, it is unlikely that construction or operation of developed areas under the CCH Avoidance MSHCP Alternative would substantially affect any of the other Covered Species.

### **Plan-Wide Activities**

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the CCH Avoidance MSHCP Alternative would have a limited potential to affect the other Covered Species. Grazing activities would have the potential to degrade habitat or water quality in areas where livestock congregate, or where overgrazing occurs. Ground-disturbing activities would have the potential to affect vegetation and habitat quality through erosion, compaction, and sedimentation of surface waters, or degradation or riparian or wetland habitats, which, in turn could affect other Covered Species using those areas for breeding or foraging. Potential effects on wildlife movement and connectivity from Plan-Wide Activities are described in the Section 4.1.5.3, Wildlife Movement and Connectivity below.

As described for the Proposed TU MSHCP Alternative, other Covered Species typical of grassland communities are the most likely to be affected by grazing. Similarly, birds, amphibians, and reptiles that fulfill one or more of their life history requirements in riparian areas could also be directly affected by livestock use of water sources, or indirectly affected by sedimentation, erosion, or other adverse water quality affects associated with grazing and/or limited ground disturbance. Finally, plant species could be trampled or otherwise damaged by ground-disturbing activities.

The BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the CCH Avoidance MSHCP Alternative and would include provisions to minimize potential effects on sensitive vegetation communities (i.e., riparian and wetland areas) and other Covered Species in grassland areas as a result of Plan-Wide Activities. For example, the Interim RWMP requires that a site evaluation be performed prior to any ground-disturbing activities to avoid sensitive resources to the extent practical, including special-status or unique or sensitive vegetation communities and the wildlife typical of those communities. In addition, potential effects on riparian and wetland habitats associated with Plan-Wide Activities that could result in ground disturbance would be required to comply with state and local grading requirements, as described in Section 4.1.5.4, Mitigation Measures. Potential effects on riparian and wetland habitats associated with Plan-Wide Activities that could result in ground disturbance are expected to be minor, and would comply with state and local grading requirements, as described in Section 4.1.5.5, Mitigation Measures, below. Ground disturbance would also be limited by the Ranchwide Agreement restrictions and BMPs, as currently exemplified in the BMPs prescribed in the Interim RWMP, such as the requirement that a site evaluation be performed prior to any ground-disturbing activities to avoid sensitive resources to the extent practical, would also reduce potential effects on special-status or unique or sensitive vegetation communities, including the wildlife typical of those communities, as well as the conservation measures similar to those provided in the Proposed TU MSHCP Alternative, above, that require preactivity surveys. Other Plan-Wide Activities, such as road and utility repair and maintenance, ancillary ranch activities, film production, and private

recreation, are expected to continue to occur mostly in existing disturbed areas, roads, or trails, and would have only minor, temporary effects on other Covered Species.

Although Plan-Wide Activities under the CCH Avoidance MSHCP Alternative could result in minor effects on other Covered Species, these effects would be reduced through implementation of use restrictions and BMPs required pursuant to the Ranchwide Agreement, and any minimization measures prescribed as part of the Federal, state, or local permitting processes (Section 4.1.5.5, Mitigation Measures) As such, Plan-Wide Activities would not be anticipated to substantially affect any of the other Covered Species. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, although they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the CCH Avoidance MSHCP Alternative.

### **Other Special-Status Species**

Other special-status species known to occur, or with the potential to occur, in the study area are summarized in Table 3.1-5 in Section 3.1, Biological Resources. These species are not proposed for coverage (wildlife) / conservation (plants) under the CCH Avoidance MSHCP Alternative because they have low potential to occur in the study area based on known ranges or on specific habitat or life history requirements; they have taxonomic issues or life history traits that make coverage difficult; and/or they meet the criteria for species covered by the TU MSHCP but are not likely to be affected by the Covered Activities.

### **Commercial and Residential Development Activities**

Similar to the Proposed TU MSHCP Alternative, permanent effects on other special-status species resulting from Commercial and Residential Development Activities under the CCH Avoidance MSHCP Alternative were generally quantified by analyzing the vegetation communities identified in Table 3.1-5 as habitat associations for these species. Potential effects on these species by habitat type are provided in Table 4.1-8.

The level of effects for the other special-status species would be relatively minor, ranging from 2% of potential habitat loss for several species to 7% for northern harrier. Conservation would range from 86% of potential habitat for yellow-breasted chat to 98% for several of the other special-status species. As noted above, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects resulting from ground-disturbing activities, which could benefit special-status species (Appendix J; Section 4.1.2.4, Mitigation Measures). In addition, similar to the Proposed TU MSHCP Alternative, the CCH Avoidance MSHCP Alternative would include a conservation measure to protect active bird nests, some which could be associated with special-status species. Other conservation measures provided for Covered Species would also likely benefit other special-status species. For example, erection of exclusion fencing to limit Tehachapi slender salamanders from entering exclusion zones could benefit other reptiles and amphibians, such as silvery legless lizard.

In consideration of these conservation measures, additional mitigation measures likely required through Federal, state, or local permitting process, and the conservation and management of 130,339 acres of open space, it is unlikely the CCH Avoidance MSHCP Alternative would substantially affect any other special-status species. These effects would, however, be greater than the No Action Alternative where no development would occur.

Commercial and Residential Development Activities under this alternative could also result in indirect effects on other special-status species. Indirect effects for other special-status species under the CCH Avoidance MSHCP Alternative would be similar to those described for the other Covered Species.

#### **Plan-Wide Activities**

Under this alternative, Plan-Wide Activities would continue to occur in similar areas and at similar levels as Existing Ranch Uses under the No-Action Alternative. Potential effects on special-status species and their habitat would be the same as those described in Section 4.1.5.1, Vegetation Communities, above, as those communities relate to the habitat types of individual species. The effects would be comparable to the No Action Alternative, although they could be somewhat less given the acreage limitation on ground disturbance associated with this alternative.

### **4.1.5.3 Wildlife Movement and Connectivity**

#### **Commercial and Residential Development Activities**

With respect to wildlife movement and habitat connectivity, the CCH Avoidance MSHCP Alternative would limit Commercial and Residential Development Activities to the southwestern portion of the study area, with the proposed commercial and resort residential uses densely clustered around I-5 and Castac Lake. It would also include the Lebec/Existing Headquarters Area and West of the Freeway developments in the northern portion of the study area. Similar to the Proposed TU MSHCP Alternative, urban-type development in the western portion of the study area around I-5 would generally represent a constraint to local wildlife movement due to land uses and infrastructure that are incompatible with maintaining wildlife habitat and use, as well as indirect effects associated with lighting, noise, increased human activity, pets, and increased vehicle collisions.

Open space established under the CCH Avoidance MSHCP Alternative in the western portion of the study area would provide a substantial unconstrained habitat linkage in and north of the proposed developed area to convey east-west wildlife movement. Along the northern boundary of the study area, the minimum width of the open space habitat linkage would be approximately 2 miles and would contain more habitat than the Proposed TU MSHCP Alternative due to the additional open space in the northern portion of the TMV Planning Area.

**Table 4.1-8. Potential Effects on Vegetation Communities for Other Special Status Species—CCH Avoidance MSHCP Alternative**

	Scrubs		Chaparrals		Grasslands		Savannahs		Woodlands		Conifer Forest		Riparian/ Wetland		Riparian Woodland		Wash		Agriculture		Total Acreage		Percent			
	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost		
Total Acreage in Study Area <sup>1</sup>	7,841		14,145		24,947		33,121		48,745		3,956		703		60		863		232		130,282	4,333				
	7,548	292	14,140	271	23,201	1,684	32,369	710	47,577	1,102	3,933	23	607	20	47	3	853	3	7	225	130,282	4,333				
<b>Other Special-Status Species</b>																										
California spotted owl																										
Cooper's hawk									x	x	x	x			x	x							51,557	1,128	98%	2%
Long-eared owl									x	x	x	x			x	x							51,557	1,128	98%	2%
Northern harrier									x	x	x	x			x	x							51,557	1,128	98%	2%
Prairie falcon	x (foraging)	x			x (foraging)	x							x (nesting)	x						x (foraging)	x		31,363	2,221	93%	7%
Yellow-breasted chat	x	x			x	x	x	x	x	x	x	x	x	x	x	x				x	x		115,289	4,059	96%	3%
American badger													x	x	x	x							654	23	86%	3%
San Bernardino ringneck snake	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x	x	x		115,535	4,042	96%	3%
Silvery legless lizard	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		130,282	4,333	97%	3%
Aromatic canyon gooseberry	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						130,275	4,108	97%	3%
Calico monkeyflower			x	x	x	x	x	x	x	x	x	x											121,243	3,790	97%	3%
Delicate bluecup	x	x	x	x					x	x	x	x			x	x							105,614	2,401	98%	2%
Flax-like monardella			x	x					x	x					x	x							61,764	1,376	98%	2%
Golden violet			x	x					x	x	x	x											65,650	1,376	98%	2%
Pale-yellow layia	x	x	x	x					x	x	x	x											105,567	2,398	98%	2%
Palmer's mariposa lily					x	x	x	x	x	x													103,147	3,496	97%	3%
Piute Mountains navarretia			x	x			x	x	x	x	x	x	x	x	x	x							98,673	2,129	98%	2%
San Bernardino aster	x	x	x	x	x	x	x	x	x	x	x	x								x	x		128,775	4,307	97%	3%

<sup>1</sup> Acreages in this table derived from Table 4.1-6.

Although the habitat linkage along the northern boundary of the study area would be unconstrained, wildlife movement and dispersal through habitat located between Castac Lake and the northern boundary of the development area would be notably constrained. Development in this area would be intensified consistent with the Kern County General Plan designations, potentially resulting in greater habitat fragmentation and more obstacles to wildlife movement (i.e., lower permeability) in this area, compared to the Proposed TU MSHCP Alternative. In addition, deed restrictions to conserve habitat values in the TMV Specific Plan Area would not be provided under this alternative. As such, wildlife moving through mountain residential use areas may be forced to the northern habitat linkage because of the decreased area of interstitial habitat with the more compact development area.

The effects of development under the CCH Avoidance MSHCP Alternative on California condor habitat connectivity and overflight would be the same as those described for the Proposed TU MSHCP Alternative. Although the ranch does serve as an important linkage between historic condor habitat areas east and west of the ranch, the proposed development on Tejon Ranch would not prevent condors from continuing to fly over Tejon Ranch, or to access areas further to the east or west of the ranch for the following reasons. The free-flying condors in the southern California subpopulation have been recorded flying over communities in the Tehachapi Mountains that have rural residential densities similar to or greater than that proposed under the CCH Avoidance MSHCP Alternative. Such flyovers have resulted in no measurable ill effects with respect to continued condor use of historical and current foraging, roosting, and nesting areas, as evidenced by Service GPS tracking data. Furthermore, a recent USGS statistical analysis of condor GPS data collected from 2004 to 2009 for spatial behavior patterns in six management units in southern California supports the conclusion that condors regularly fly over developed areas and that these areas, based on the GPS data, are part of their estimated home ranges. As such, the Service does not expect condors to avoid flying over similar areas on the ranch after buildout, particularly over the more outlying areas farther north from Castac Lake that would be characterized by lower residential development densities.

Based on the above, it is anticipated that Commercial and Residential Development under the CCH Avoidance MSHCP Alternative would result in moderate effect on wildlife movement and connectivity, particularly in western portion of the study area where development would be intensified, and no effect on condor overflight of the study area. Although the northern habitat linkage would provide for movement across a large portion of the study area, these effects would be greater than the No Action Alternative, where no development would occur.

### **Plan-Wide Activities**

Similar to Existing Ranch Uses under the No Action Alternative, Plan-Wide Activities under the CCH Avoidance MSHCP Alternative would have a limited potential to affect wildlife movement and habitat connectivity in the study area. Specifically, existing roads that provide access to ranch infrastructure, hunting, other recreational activities or emergency vehicle access, could adversely affect species movement through direct mortality from vehicle strikes and/or loss of habitat connectivity. Other Plan-Wide Activities, such as utility lines and fences, may affect bird (i.e., collisions) or wildlife movement across the Covered Lands. The BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would continue to be implemented under the CCH Avoidance MSHCP Alternative and would include provisions to

minimize the effects of roads, utility lines, and fences on wildlife movement and habitat connectivity. For example, these BMPs would include implementation of a dust control plan to reduce particulate matter emissions on well-traveled roads; maintenance of berms on dirt roads to handle minor stormwater flows; and construction of “wildlife-friendly” fencing of the type and design necessary to allow for passage of wildlife, where possible (Tejon Ranch Company 2009). In addition, similar to the Proposed TU MSHCP Alternative, conservation measures including restrictions on utility lines and fencing design, would be implemented in open space areas, which would further minimize effects on wildlife connectivity.

Given the limited existing/proposed road network within open space areas under the CCH Avoidance MSHCP Alternative, and the BMPs and use restriction required pursuant to the Ranchwide Agreement, it is anticipated that Plan-Wide Activities would result in minor effects on wildlife movement and connectivity. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative, except they may be slightly less given the acreage limitation for ground disturbance (200 acres) provided under the CCH Avoidance MSHCP Alternative.

#### **4.1.5.4 Mitigation Measures**

As described above, the BMPs and use restrictions required pursuant to the Ranchwide Agreement (as currently set forth in the Interim RWMP) would reduce the effects of the CCH Avoidance MSHCP Alternative on vegetation communities and wildlife. Species-specific conservation measures, similar to those provided in Tables 2-3 and 2-4 in Chapter 2, Proposed TU MSHCP Alternative, would also be implemented to avoid, minimize, and mitigate the effects of the Covered Activities on the Covered Species, each of which would enforceable under the ESA through the ITP and applicable conservation easements.

The mitigation measure listed in Section 4.1.3.4, Mitigation Measures, for the Proposed TU MSHCP Alternative are also applicable to the CCH Avoidance MSHCP Alternative.

### **4.1.6 Kern County General Plan Buildout Alternative**

#### **4.1.6.1 Vegetation Communities**

Table 4.1-9 provides a summary of effects on vegetation communities for the Kern County General Plan Buildout Alternative. Permanent and temporary direct and indirect effects of Commercial and Residential Development Activities and Plan-Wide Activities are discussed below.

##### **Commercial and Residential Development Activities**

Construction associated with Commercial and Residential Development Activities under the Kern County General Plan Buildout Alternative would result in moderate effects on vegetation communities, particularly agricultural lands. As shown in Table 4.1-9, about 14,490 acres (11%) of upland communities and 33 acres (2%) of riparian/wetland/wash communities would be permanently affected by construction-related ground disturbance. Of these, many of the upland communities (excluding agriculture, disturbed/nonnative grassland, and developed) and all of the riparian/wetland/wash communities are considered to be special-status by Federal, state or local resource agencies. However, approximately 95% of total scrub vegetation, 92% of chaparrals, 94% of grasslands (excluding disturbed/nonnative grasslands), 86% of savannahs, 90% of woodlands,

95% of conifer forest, 96% of riparian/wetland, 98% of riparian woodland, and 99% of wash communities would be conserved in open space and Restricted Open Space under this alternative (Table 4.1-9). Areas protected in Restricted Open Space would be available for mitigation on a project-by-project basis. To the extent these lands would be used as project-by-project mitigation, they would be permanently protected and managed in accordance with mitigation requirements. Approximately 227 acres (98%) of agricultural lands, a non-sensitive land cover, would be permanently disturbed by Commercial and Residential Development Activities.

**Table 4.1-9. Potential Effects on Vegetation Communities—Kern County General Plan Buildout Alternative**

Vegetation Community <sup>1</sup>	Total Acreage in Study Area <sup>2</sup>	Acreage in Retained Open Space <sup>3,6</sup>	Acreage in Restricted Open Space <sup>4,6</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Upland Communities</b>				
<b>Scrubs</b>				
Alluvial scrub	36	26	0	10
Mojavean scrub	6,951	3,556	3,310	85
Saltbush/buckwheat scrub	290	257	0	33
Scrub	564	281	0	283
<i>Total Scrubs</i>	<i>7,841</i>	<i>4,120</i>	<i>3,310</i>	<i>411</i>
<b>Chaparrals</b>				
Brewer's oak scrub	2,720	60	2,566	94
Chaparral	11,050	2,822	7,255	973
Scrub oak	641	438	66	137
Undetermined chaparral	4	0	4	0
<i>Total Chaparrals</i>	<i>14,415</i>	<i>3,320</i>	<i>9,891</i>	<i>1,204</i>
<b>Grasslands</b>				
Annual grassland	—	—	0	0
Disturbed/nonnative grassland	6,411	3,888	299	2,224
Grassland	17,387	4,267	12,054	1,066
Native grassland	1,146	478	550	118
<i>Total Grasslands</i>	<i>24,944</i>	<i>8,633</i>	<i>12,903</i>	<i>3,408</i>
<b>Savannahs</b>				
Black oak savannah	29	0	28	1
Blue oak savannah	5,114	509	4,364	241
Canyon oak savannah	432	0	390	42
Gray pine savannah	64	0	62	2
Interior oak savannah	276	0	267	9
Mixed oak savannah	11,997	323	10,808	866
Oak savannah	5,603	3,640	0	1,963
Undetermined savannah	678	128	514	36
White oak savannah	8,927	607	6,990	1,330
<i>Total Savannahs</i>	<i>33,120</i>	<i>5,207</i>	<i>23,423</i>	<i>4,490</i>

Vegetation Community <sup>1</sup>	Total Acreage in Study Area <sup>2</sup>	Acreage in Retained Open Space <sup>3,6</sup>	Acreage in Restricted Open Space <sup>4,6</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Woodland</b>				
Black oak woodland	2,701	638	1,649	414
Blue oak woodland	9,089	4,699	2,322	2,068
California buckeye woodland	338	44	284	10
Canyon oak woodland	6,193	1,666	4,255	272
Gray pine woodland	109	0	99	10
Interior oak woodland	761	44	672	45
Mixed oak woodland	28,086	2,447	23,771	1,868
Oak woodland	147	141	0	6
Pinyon pine woodland	285	60	189	36
Undetermined woodland	153	0	148	5
White oak woodland	874	96	740	38
<i>Total Woodland</i>	<i>48,736</i>	<i>9,835</i>	<i>34,129</i>	<i>4,772</i>
<b>Conifer Forest</b>				
Conifer/mixed oak	912	249	570	93
Incense-cedar stand	4	0	4	0
Intermixed conifer	1,059	0	1,023	36
White fir stand	320	0	311	9
White fir/mixed oak	1,661	0	1,594	67
<i>Total Conifer Forest</i>	<i>3,956</i>	<i>249</i>	<i>3,502</i>	<i>205</i>
<b>Total Upland Communities</b>	<b>133,012</b>	<b>31,364 (24%)</b>	<b>87,158 (66%)</b>	<b>14,490 (11%)</b>
<b>Riparian/Wetland/Wash Communities<sup>7</sup></b>				
<b>Riparian/Wetland</b>				
Riparian scrub	76	55	16	5
Riparian/wetland	10	4	4	2
Wetland	281	195	64	22
Lake	336	335	1	0
<i>Total Riparian/Wetland</i>	<i>703</i>	<i>589</i>	<i>85</i>	<i>29</i>
<b>Riparian Woodland</b>				
Riparian woodland	43	38	4	1
Oak riparian	16	16	0	0
<i>Total Riparian Woodland</i>	<i>59</i>	<i>54</i>	<i>4</i>	<i>1</i>
<b>Wash</b>				
Desert wash/riparian/seeps	841	435	404	2
Wash	22	20	1	1
<i>Total Wash</i>	<i>863</i>	<i>455</i>	<i>405</i>	<i>3</i>
<b>Total Riparian/Wetland/Wash Communities</b>	<b>1,625</b>	<b>1,098 (68%)</b>	<b>494 (30%)</b>	<b>33 (2%)</b>

Vegetation Community <sup>1</sup>	Total Acreage in Study Area <sup>2</sup>	Acreage in Retained Open Space <sup>3,6</sup>	Acreage in Restricted Open Space <sup>4,6</sup>	Acreage Removed for Development <sup>5,6</sup>
<b>Nonnative Land Covers</b>				
Agriculture	232	5	0	227
Developed	127	38	1	88
<b>Total Nonnative Land Covers</b>	<b>359</b>	<b>43 (12%)</b>	<b>1 (&lt;1%)</b>	<b>315 (88%)</b>
<b>Total<sup>1</sup></b>	<b>134,996</b>	<b>32,505 (24%)</b>	<b>87,653 (65%)</b>	<b>14,838 (11%)</b>

<sup>1</sup> Slight differences between acreages presented in Table 4.1-1 and Table 4.1-9 may occur due to rounding and small slivers in shapefiles in the GIS analysis of vegetation communities (e.g., sliver polygons occur when different GIS coverages overlap but do not match exactly). These discrepancies are minor and do not alter the overall conclusions of the analysis or comparison of the relative merits of various alternatives and scenarios.

<sup>2</sup> Acreages in this column are based on the study area encompassing 134,996 acres, or the total acreage in the study area (141,886 acres) less the acreage in Other Lands (6,890 acres).

<sup>3</sup> Acreages in this column are based on an assumed acreage of permanently conserved open space of approximately 32,512 acres. This acreage is slightly different than the 32,505 acres presented in this table due to the nature of the GIS analysis. This acreage is less than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-6 (34,130 acres) because of the larger Development Envelope area used to assess biological effects. This acreage does not include Restricted Open Space, which is addressed in the next column. TMV Planning Area Open Space also includes 4,430 acres of vegetation clearing/thinning for fuel modification in accordance with the fire protection plan (Dudek 2008a) developed for the TMV Project.

<sup>4</sup> Restricted Open Space consists of those lands in the 8.2, 8.3, 8.5 (minimum 20/80 acre parcel size) and 5.7 (minimum 5 gross acres/unit) Kern County general plan land use designations, which are not expected to be developed with single family structures. It is assumed that Restricted Open Space would be available for mitigation on a project-by-project basis. This acreage is slightly different than the acreage described in Chapter 2, Proposed TU MSHCP and Alternatives, Table 2-6 (85,262 acres) due to the nature of the GIS analysis.

<sup>5</sup> Development includes Commercial and Residential Development Activities in the TMV Planning Area and Lebec/Existing Headquarters Area. Acreages in this column are based on an assumed Development Envelope of 14,934 acres for this alternative. See Section 4.1.1.2, Methods, for a discussion of how the Development Envelope was developed for each alternative and how it applies to the effects analysis in this section.

<sup>6</sup> The percentages of modeled habitat conserved and lost may not sum to 100% for three possible reasons: (1) rounding error; (2) 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages; and (3) 3,317 acres of mineral/petroleum designated areas and other state/Federal lands are not developed but are not included in open space.

<sup>7</sup> The analysis assumes 75% avoidance of effects on riparian/wetland vegetation communities. The total development acres for each alternative reflect this assumption, as well as the development acres for riparian vegetation communities and species models that are based on these riparian communities. The total development acreage presented in this table for the Kern County General Plan Buildout Alternative is 96 acres less than the total development acreage presented in Table 4.1-1 for this reason.

In addition, under this alternative, approximately 4,430 acres of development-related fuel modification (e.g., vegetation clearing and thinning) could occur in designated fuel modification zones. Since specific development plans are not available for this alternative, the locations of fuel modification zones cannot be determined, and an acreage breakdown of effects on specific vegetation communities associated with fuel modification cannot be calculated. In general, it is anticipated that fuel modification effects would be roughly proportional to the distribution of vegetation communities in the study area, with about 98% occurring in upland communities, about 1% in riparian/wetland/wash communities, and about 1% in agricultural land. In the TMV Planning Area, as required by the existing TMV Project Approvals (Kern County 2009c), fuel modification would occur in accordance with a fire protection plan approved by Kern County (this level of management is assumed for all development under this alternative). Fuel modification in open space areas would extend up to 200 feet from proposed structures and only mowing and thinning would

be permitted in these portions of the fuel modification areas. Thinned areas would not be markedly different in appearance from the adjacent natural areas not subject to thinning, and fuel modification would not be expected to substantially affect vegetation communities or to degrade existing habitat.

Finally, increased human presence and introduction of urban-type uses associated with development could degrade vegetation communities supporting Covered Species and other special-status species. These indirect effects are discussed in the analysis of effects on species presented below.

All development under the Kern County General Plan Buildout Alternative would be subject to project-specific approvals, including any species-specific measures required by the Service as part of the ESA compliance process, as applicable. Permanent or temporary effects on special-status vegetation communities, such as wetlands (regulated by USACE and RWQCB) or oak woodlands (protected under Kern County oak tree ordinances), would require approval by Federal, state, or local jurisdictions. In consideration of the proposed open space areas under the Kern County General Plan Buildout Alternative, and with implementation of the mitigation measure discussed in Section 4.1.6.4, Mitigation Measures, it is anticipated that potential effects on sensitive vegetation communities from Commercial and Residential Development Activities would be minor, would not substantially degrade unique or sensitive habitats, and would not exceed a standard or criteria provided under another Federal, state, or local statute. These effects would be greater than the No Action Alternative where no development would occur.

### Existing Ranch Uses

Similar to Existing Ranch Uses under the No Action Alternative, Existing Ranch Uses under the Kern County General Plan Buildout Alternative would have a limited potential to adversely affect vegetation communities. Grazing would be expected to continue on about 117,774 acres<sup>9</sup> of the study area, including permanently protected open space and Restricted Open Space, and could damage vegetation in areas where livestock congregate and trample vegetation, or in areas where overgrazing occurs. Similarly, Existing Ranch Uses that could result in ground disturbance, such as repair and maintenance of back-country cabins, could affect vegetation communities through erosion or compaction. Other Existing Ranch Uses, such as film production and recreation, are expected to continue to occur mostly in existing disturbed areas, roads, or trail, and would generally only result in minor, temporary effects on vegetation communities.

As described in Chapter 2, Proposed TU MSHCP and Alternatives, the limitations of the Ranchwide Agreement would not apply under this alternative. However, even in the absence of the Ranchwide Agreement, historic ranch practices, as currently reflected in the Interim RWMP, are anticipated to continue (although they cannot be assured). Additionally, compliance with Federal, state, and local requirements governing ground disturbance in sensitive vegetation communities (e.g., wetlands, oak woodlands) would apply, and could include implementation of species-specific conservation measures required by the Service as part of the ESA compliance process, as applicable. In addition, restrictions imposed by the TMV Project Approvals and by easement language in the Existing

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<sup>9</sup> As described in Table 4.1-1, this acreage of open space (117,774 acres) is less than the open space acreage associated with the Kern County General Plan Buildout Alternative described in Chapter 2, Proposed TU MSHCP and Alternatives (119,392 acres) because of the larger Development Envelope area considered to assess direct biological effects.

Conservation Easement Areas would apply under the Kern County General Plan Buildout Alternative.

Although Existing Ranch Uses under the Kern County General Plan Buildout Alternative could result in minor effects on vegetation communities, these effects would be reduced through implementation of the BMPs prescribed as part of the Federal, state, or local permitting processes (Section 4.1.5.5, Mitigation Measures), or as required by TMV Project Approvals, and would not degrade unique or sensitive habitats, or exceed a standard or criteria provided under another Federal, state, or local statute. The effects of Existing Ranch Uses under this alternative would be comparable to those described for the No Action Alternative.

#### **4.1.6.2 Wildlife and Plant Species**

##### **California Condor**

###### **Commercial and Residential Development Activities**

Commercial and Residential Development Activities under the Kern County General Plan Buildout Alternative would have the potential to result in adverse effects on California condors, similar to those described for the other action alternatives. Adverse effects would be associated with the loss of foraging habitat; habituation to human structures and activities; risk of collisions with power lines, communication towers, and other artificial structures; and ingestion of microtrash.

###### ***Loss of Foraging Habitat***

Within the TMV Specific Plan Area, a similar amount of suitable foraging habitat would be lost under the Kern County General Plan Buildout Alternative compared to the Proposed TU MSHCP Alternative, given that both alternatives include the TMV Project. Additionally, while the Kern County General Plan Buildout Alternative would not include future development in Oso Canyon, it would include development of more specific plan zoned areas and would potentially affect more suitable condor foraging habitat than the Proposed TU MSHCP Alternative. Specifically, the mix of fragmented and more intensive development allowed under General Plan land use designations 5.7, 8.2, 8.3, and 8.5 would result in both direct effects (i.e., loss of foraging habitat within the Disturbance Area) and indirect effects (e.g., activities that would preclude condors from foraging and/or feeding in close proximity to developed areas, assumed to be within 0.5 mile of suitable foraging habitat) on suitable condor foraging habitat. However, because a Development Envelope does not exist for this alternative outside of the TMV Specific Plan Area Development Envelope, it is not known where development would occur within the 20- and 80-acre parcels. Therefore the extent of direct and indirect effects on suitable condor foraging habitat cannot be determined.

Approximately 85,262 acres of Restricted Open Space would not be developed under this alternative and may be used for project-specific mitigation proposed in the study area. Although it is anticipated that large portions of Restricted Open Space would be suitable for foraging by condors, the amount of suitable foraging habitat actually conserved in Restricted Open Space cannot be determined because it would depend on the location of the private dwelling units in the 20- and 80-acre parcels allowed under this alternative, and the extent of indirect effects associated with each of these units.

As described for the other action alternatives, to analyze potential effects on the condor population and its critical habitat, the Service also estimated potential food availability in the condor's range,

focusing on the portion of the range currently used by the southern California subpopulation. The Service estimates there are currently more than enough potential carcasses from livestock, hunting, and other mortality of native ungulates and feral pigs in the condors' historic range in California to support not only the current condor population, but also one of the two free-flying population of 150 birds envisioned in the Recovery Plan and necessary to down list the condor to a threatened status (assuming mortality factors, particularly lead poisoning, are minimized or eliminated). Additionally, grazing on the ranch is anticipated to continue in open space at levels similar to what currently exists, and hunting would continue on at least permanently protected open space areas (approximately 32,512 acres<sup>10</sup>). Permanent protection of other ranch areas outside the study area pursuant to the Ranchwide Agreement is not ensured under this alternative; however, the ranch hunting program is expected to continue on those lands. Along with wild carrion, these activities would continue to provide important food resources for condors using the ranch.

Because the Service cannot calculate the amount or exact location of direct and indirect effects on foraging habitat in the areas where the Development Envelope has not been determined, it is not known how much suitable foraging habitat would be available for condors under the Kern County General Plan Buildout Alternative. Nevertheless, it is anticipated that this alternative would have greater direct and indirect effects on condor foraging habitat, resulting in less conserved suitable foraging habitat available for condors on the ranch, compared to the other action alternatives and the No Action Alternative. In addition, although approximately the same amount of food would occur on the ranch under this alternative compared to the No Action Alternative, there would be less foraging habitat available under this alternative due to the area set aside for development. Although the Service is unable to determine exactly how much suitable habitat would be lost under the Kern County General Plan Buildout Alternative, a substantial adverse effect on the condor population or its critical habitat is not anticipated.

#### ***Habituation, Collision with Power Lines and Towers, and Microtrash***

The potential for habituation, collision, and microtrash ingestion to affect condors under the Kern County General Plan Buildout Alternative would be similar or higher to that described for the Proposed TU MSHCP Alternative due to increased and more dispersed development, which may increase these risks under this alternative, as well as the lack of protective measures under the Ranchwide Agreement. Although a coordinated MSHCP like the TU MSHCP would not occur under this alternative, the conservation measures prescribed on a project-by-project basis by the Service as part of the ESA compliance process, or by DFG as part of the CESA compliance process, would apply, which could lessen the effects. These effects would be greater than those associated with the No Action Alternative, where development would not occur, infrastructure would not be constructed, and the potential for habituation from human presence/activity would not increase.

Taken together, the risks of habituation, collision, or harm through microtrash ingestion are difficult to determine for this alternative, but would range from minor to moderate for the population, depending on the conservation measures required for individual projects.

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<sup>10</sup> As described in Table 4.1-1, this acreage of permanently protected open space (32,512 acres) is less than the open space acreage associated with the Kern County General Plan Buildout Alternative and described in Chapter 2, Proposed TU MSHCP and Alternatives (34,130 acres) because of the larger Development Envelope area considered to assess direct biological effects.

### **Existing Ranch Uses**

Existing Ranch Uses under the Kern County General Plan Buildout Alternative would include ongoing grazing and ranching operations as well as other activities, such as road and utility repair and maintenance, film production, and use and maintenance of ancillary ranch structures and backcountry cabins. Recreation, primarily trail use and guided tours, would also occur under this alternative. The potential effects on condors associated with these uses would be similar to those described under the No Action Alternative. Although the limitations of the Ranchwide Agreement would not apply under this alternative, conservation measures prescribed on a project-by-project basis by the Service as part of the ESA compliance process, or by DFG as part of the CESA compliance process, would apply, and historic ranch practices as currently reflected in the Interim RWMP are anticipated to continue (although they cannot be assured). While the level of condor activity on the ranch is expected to increase as their population continues to increase, it is anticipated the effects of Existing Ranch Uses on the California condor and its habitat would be minor under the Kern County General Plan Buildout Alternative. The effects would be somewhat greater than the No-Action Alternative, however, given the anticipated increased population of the condor and increased human presence in the study area under this alternative.

### **Other Covered Species**

Table 4.1-10 provides a summary of the potential effects of the Kern County General Plan Buildout Alternative on modeled habitat for each of the other Covered Species. Permanent and temporary direct and indirect effects of Commercial and Residential Development Activities and Existing Ranch Uses are discussed below.

### **Commercial and Residential Development Activities**

As described in Section 3.1, Biological Resources, modeled species habitat is composed of vegetation communities supporting the life history requirements of the Covered Species, along with other habitat suitability criteria appropriate for a particular species, such as soils or elevation. Therefore, for the purposes of this EIS, permanent loss of modeled habitat is used to assess direct effects on species. In addition to permanent ground disturbance, construction-related and operations effects could indirectly affect other Covered Species, as described below.

### ***Loss of Habitat***

Table 4.1-10 indicates the extent of the permanent loss of modeled habitat for each of the other Covered Species under the Kern County General Plan Buildout Alternative, as well as the extent of modeled habitat that would be conserved in the study area. While only some portion of each of these modeled habitats would represent the most suitable habitat for the Covered Species, in the absence of more detailed species habitat information, they are used here to conservatively represent the extent of suitable habitat lost for each species. For each of the Covered Species, the following evaluation considers the loss of modeled habitat, potential effects on known species occurrences within the study area (where applicable), as well as the overall range and rarity of the species in relation to the potential loss of modeled habitat.

**Table 4.1-10. Potential Effects on Modeled Habitat for Other Covered Species—Kern County General Plan Buildout Alternative**

Species	Species Model	Acreage of Modeled Habitat in the Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2,5</sup>	Acreage of Modeled Habitat Conserved in Permanently Protected Open Space <sup>3,5</sup>	Acreage of Modeled Habitat Conserved in Restricted Open Space <sup>4,5</sup>
Tehachapi slender salamander	Suitable habitat	4,071	237 (6%)	1,056 (26%)	2,770 (68%)
Western spadefoot	Suitable habitat	1,175	31 (3%)	762 (65%)	287 (24%)
Yellow-blotched salamander	Suitable habitat	35,213	2,085 (6%)	6,309 (18%)	26,773 (76%)
American peregrine falcon	Foraging	26,742	3,187 (12%)	9,682 (36%)	13,728 (51%)
	Breeding	80	3 (4%)	7 (9%)	70 (88%)
Bald eagle	Foraging	518	5 (1%)	499 (96%)	0 (0%)
	Wintering	1,438	834 (58%)	604 (42%)	0 (0%)
Burrowing owl	Breeding/foraging	24,944	2,929 (12%)	8,633 (35%)	13,329 (53%)
	Secondary Breeding/foraging	8,073	638 (8%)	4,126 (51%)	3,309 (41%)
Golden eagle	Foraging	33,891	3,571 (10%)	13,217 (39%)	17,038 (50%)
	Breeding/foraging	33,056	2,871 (9%)	5,206 (16%)	24,939 (75%)
	Primary breeding	48,019	3,769 (8%)	9,748 (20%)	34,453 (72%)
Least Bell's vireo	Breeding/foraging	614	8 (1%)	502 (82%)	78 (13%)
Little willow flycatcher	Foraging/sto pover	986	10 (1%)	548 (56%)	3998 (40%)
Purple martin	Breeding/foraging	85,870	6,888 (8%)	15,345 (18%)	63,544 (74%)
Southwestern willow flycatcher	Breeding/foraging	986	10 (1%)	548 (56%)	3998 (40%)
Tricolored blackbird	Foraging	18,553	1,437 (8%)	7,090 (38%)	9,952 (54%)
	Primary breeding	289	23 (8%)	198 (68%)	0 (0%)
Western yellow-billed cuckoo	Breeding/foraging	986	10 (1%)	548 (56%)	399 (40%)
White-tailed kite	Foraging	9,009	1,988 (22%)	3,445 (38%)	3,524 (39%)
Yellow warbler	Breeding/foraging	986	10 (1%)	548 (56%)	399 (40%)
	Secondary	51,743	3,958 (8%)	9,981 (19%)	37,755 (73%)

Species	Species Model	Acreage of Modeled Habitat in the Study Area <sup>1</sup>	Acreage of Modeled Habitat Lost <sup>2,5</sup>	Acreage of Modeled Habitat Conserved in Permanently Protected Open Space <sup>3,5</sup>	Acreage of Modeled Habitat Conserved in Restricted Open Space <sup>4,5</sup>
	foraging				
Valley elderberry longhorn beetle	Suitable habitat	2,597	75 (3%)	388 (15%)	2,115 (81%)
Ringtail	Suitable habitat	99,253	10,310 (10%)	26,058 (26%)	62,649 (63%)
Tehachapi pocket mouse	Suitable habitat	1,931	82 (4%)	937 (48%)	912 (47%)
Coast horned lizard ( <i>frontale</i> and <i>blainvillii</i> populations)	Primary habitat	41,083	4,822 (12%)	10,752 (26%)	25,458 (62%)
	Secondary habitat	62	3 (5%)	51(82%)	0 (0%)
Two-striped garter snake	Suitable habitat	364	34 (9%)	254 (70%)	0 (0%)
Fort Tejon woolly sunflower	Suitable habitat	57,430	6,552 (11%)	14,284 (25%)	36,578 (64%)
Kusche's sandwort	Suitable habitat	30,505	2,859 (9%)	3,744 (12%)	23,901 (78%)
Round-leaved filaree	Suitable habitat	58,073	6,265 (11%)	13,969 (24%)	37,839 (65%)
Striped adobe lily	Suitable habitat	32,213	3,439 (11%)	7,443 (23%)	21,331 (66%)
Tehachapi buckwheat	Suitable habitat	2,579	77 (3%)	422 (16%)	2,079 (81%)
Tejon poppy	Suitable habitat	12,672	361 (3%)	4,595 (36%)	7,686 (61%)

<sup>1</sup> Acreages in this column are based on the study area encompassing 134,996 acres, or the total acreage of the study area (141,886) less the acreage in Other Lands (6,890 acres).

<sup>2</sup> Acres in this column represent the acre of modeled habitat lost in the 14,934 acre Development Envelope, and includes approximately 12,142 acres of additional habitat lost as a result of ground disturbance in general plan designated areas, the exact location of which is not known. The models were calculated assuming 75% avoidance of riparian habitat.

<sup>3</sup> Acres in this column represent the acreage of suitable habitat conserved in permanently protected open space, including lands in TMV Planning Area Open Space and Existing Conservation Easement Areas. Restricted Open Space is assumed to be available for mitigation and is addressed in the next column.

<sup>4</sup> Acres in this column represent the acreage of suitable habitat conserved in Restricted Open Space, or lands in the 8.2, 8.3, 8.5 (minimum 20- or 80-acre parcel size) and 5.7 (minimum 5 gross acres/unit) general plan land use designations. These lands not expected to be developed with single family structures, but would be available for mitigation on a project-by-project basis.

<sup>5</sup> The percentages of modeled habitat conserved (in both open space and Restricted Open Space) and lost may not sum to 100% for three possible reasons: (1) rounding error; (2) 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages; and (3) 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space. As a result, is likely that modeled habitat conserved in the Lebec/Existing Headquarters Area is underestimated because the County land use designations for this area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects). A more specific explanation for these differences is provided in the species-specific discussion below for the species where the sum is less than 90% (i.e., tricolored blackbird, coast horned lizard, and two-striped garter snake).

In general, the primary conservation measure under the Kern County General Plan Buildout Alternative would be conservation and management of 119,392 acres of open space. Species specific conservation measures would be developed and implemented on a project-by-project basis through either the ESA Section 10 or ESA Section 7 process.

#### *Tehachapi Slender Salamander*

Modeled habitat for the Tehachapi slender salamander would be reduced by 237 acres (6%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the Tehachapi slender salamander has been detected in five locations in the study area, is endemic to California, and has a limited range, only occurring in Kern County.

Potential effects on Tehachapi slender salamander are considered in the context of the species' limited range and the difficulty of detecting species presence during surveys. An estimated 3,826 acres (94%) of modeled habitat for this species would be conserved in open space (including Restricted Open Space) under the Kern County General Plan Buildout Alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for Tehachapi slender salamander would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG during the CESA compliance process, and by the local jurisdiction during the environmental review and approval process, given that the species is listed in California as threatened and would be considered a special-status species under CEQA. These anticipated conservation measures, including preservation of 94% of modeled habitat in open space, would reduce potential effects on this species from the loss of habitat. In consideration of the species limited range, it is anticipated that the loss of 6% of modeled habitat under the Kern County General Plan Buildout Alternative would have a moderate effect on Tehachapi slender salamander in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Western Spadefoot*

Modeled habitat for the western spadefoot would be reduced by 31 acres (3%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the western spadefoot has not been detected in the TMV Planning Area and has low potential to occur in other parts of the study area. It is endemic to California and northern Baja California, and is primarily found below 3,000 feet amsl.

An estimated 1,049 acres (89%) of modeled habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the western spadefoot would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a CDFG Species of Special Concern and would be considered a special-status species under CEQA. Because of the low potential for occurrence in the study area, and because 89% of modeled habitat would be conserved in open space, it is anticipated that the loss of 3% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor effect on western spadefoot in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *Yellow-Blotched Salamander*

Modeled habitat for the yellow-blotched salamander would be reduced by 2,085 acres (6%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the yellow-blotched salamander is endemic to California, specifically within Kern and Ventura Counties, and occurs at elevations between 1,400 and 7,496 feet amsl. This species was detected in several drainages in the TMV Planning Area. All known occurrences in the study area would be preserved under this alternative.

Potential effects on the yellow-blotched salamander are considered in the context of the species limited geographic range. An estimated 33,082 acres (94%) of modeled habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the yellow-blotched salamander would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a CDFG Species of Special Concern and would be considered a special-status species under CEQA. In consideration of the preservation of 94% of modeled habitat in open space, and the likely conservation measures that would be implemented by the local jurisdiction, it is anticipated that the loss of 6% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor effect on yellow-blotched salamander in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

### *American Peregrine Falcon*

Modeled foraging habitat for the American peregrine falcon would be reduced by 3,187 acres (12%) in the study area under the Kern County General Plan Buildout Alternative; 3 acres (4%) of modeled breeding habitat would be lost under this alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the American peregrine falcon has not been documented to nest in the study area and has only been observed to be an occasional winter visitor. It has an extensive range that spans from Alaska south to northern Mexico and east across Arizona through Alabama, and is known to use a large variety of open habitats for foraging.

An estimated 23,410 acres (87%) of modeled foraging habitat and 77 acres (97%) of modeled breeding habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the American peregrine falcon would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the environmental review and approval process, given that the species is state fully protected species and would be considered a special-status species under CEQA. In consideration of the extensive range of the species, the preservation of 87% of the modeled foraging habitat and 97% of modeled breeding habitat, and the likely conservation measures that would be implemented by the local jurisdiction through the CEQA process, it is anticipated that the loss of 12% of modeled foraging habitat and 4% of modeled breeding habitat under the Kern County General Plan Buildout Alternative would have a minor effect on American peregrine falcon that may nest or forage in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

### *Bald Eagle*

Modeled winter roosting habitat for the bald eagle would be reduced by 834 acres (58%) in the study area under the Kern County General Plan Buildout Alternative; modeled foraging habitat would be reduced by 5 acres (1%) (Table 4.1-10). As described in Section 3.1, Biological Resources, the bald eagle has a widespread distribution in North America, wintering from Alaska eastward to Newfoundland and southward locally to Baja California, Sonora, Texas, and Florida. In California, breeding populations are more limited and restricted primarily to the northern Sierra. Winter roosting habitat in the study area is concentrated around and within 1 mile of Castac Lake, particularly to the south and east where trees are sufficiently large to support roosting substrate for bald eagles.

An estimated 604 acres (42%) of modeled winter roosting habitat and 499 acres (96%) of modeled foraging habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the bald eagle would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the CESA and environmental review and approval process, given that the species is state-listed as endangered, is a state fully protected species, and would be considered a special-status species under CEQA. Similarly, conservation measures, in compliance with the BGEPA, may be required by the Service if project could result in the direct take of an individual bald eagle. The loss of 58% of available modeled winter roosting habitat would likely reduce the use of Castac Lake by wintering bald eagles. However, the bald eagle does not breed on site and surveys indicate that a large wintering population does not occur in the study area. In consideration of the extensive range of the species and the conservation measures that would likely be implemented to protect the remaining modeled foraging and wintering habitat in the study area, it is anticipated that the loss of 58% of modeled wintering habitat and 1% of modeled foraging habitat under the Kern County General Plan Buildout Alternative would have a moderate effect on bald eagle in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

### *Burrowing Owl*

Modeled breeding/foraging habitat for the burrowing owl would be reduced by 2,929 acres (12%) in the study area under the Kern County General Plan Buildout Alternative; modeled secondary breeding/foraging habitat would be reduced by 638 acres (8%) (Table 4.1-10). As described in Section 3.1, Biological Resources, burrowing owls are infrequent winter visitors to the study area, and no breeding, resident, or wintering burrowing owls were detected on site during any of the focused surveys of the TMV Planning Area. In general, the burrowing owl is widespread in the United States and Canada, found in a wide variety of habitat types typically characterized by low-growing vegetation and burrows made by fossorial mammals, such as ground squirrels.

An estimated 21,962 acres (88%) of modeled breeding/foraging habitat and 7,435 acres (92%) of modeled secondary breeding/foraging habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the burrowing owl would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be

considered a special-status species under CEQA. Given the extensive range of the burrowing owl, their limited presence in the study area, and because approximately 88% of the modeled breeding/foraging habitat and 92% of modeled secondary breeding/foraging habitat would be conserved and protected in open space, it is anticipated that the loss of 12% of the modeled breeding/foraging habitat and 8% of modeled secondary breeding/foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on burrowing owl in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Golden Eagle*

Modeled foraging, breeding/foraging, and primary breeding habitat for the golden eagle would be reduced by 3,571 acres (10%), 2,871 acres (9%), and 3,769 acres (8%) in the study area, respectively, under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, golden eagles have been regularly observed in the TMV Planning Area since 1999 and are a documented breeding resident on site. Three active nest sites are currently known to occur in the study area. Within their range, golden eagles are sparsely distributed throughout most of California, occupying primarily mountain, foothill, and desert habitats.

An estimated 30,255 acres (89%) of modeled foraging habitat, 30,145 acres (91%) of modeled breeding/foraging habitat, and 44,201 acres (92%) of modeled primary breeding habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the golden eagle would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and is state fully protected, and would be considered a special-status species under CEQA. Similarly, conservation measures, in compliance with the BGEPA, may be required by the Service if the project could result in the direct take of an individual golden eagle. In consideration of the extensive range of the species, the combined high level of habitat conservation (89% of the modeled foraging habitat, 91% of modeled breeding/foraging habitat, and 92% of primary breeding habitat would be conserved and protected), and the likely conservation measures that would be implemented by CDFG and the local jurisdiction through the environmental review and approval process, it is anticipated that the loss of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor effect on the golden eagle population in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Least Bell's Vireo*

Modeled breeding/foraging habitat for the least Bell's vireo would be reduced by 8 acres (less than 1%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the least Bell's vireo has not been detected in the study area, and the study area is not an area of focus in the least Bell's vireo recovery plan (U.S. Fish and Wildlife Service 1998). However, the least Bell's vireo has a very limited distribution, and low reproductive success due to loss of riparian habitat and cowbird nest parasitism. Therefore, loss of any potential breeding habitat is an important consideration for this species.

An estimated 580 acres (95%) of breeding/foraging habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those conservation measures provided as part of the TMV Project Approvals, no specific conservation measures for the least Bell's vireo would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the CESA and environmental review and approval process, however, given that the species is state-listed as endangered and considered a special-status species under CEQA. In addition, because this species is federally-listed as endangered, proposed development with the potential to affect the species would require either ESA Section 7 or ESA Section 10 authorization from the Service.

Although the net loss of 8 acres of riparian habitat under the Kern County General Plan Buildout Alternative could affect the least Bell's vireo if they occur on site, appropriate management of the remaining 95% of modeled habitat (i.e., maintenance of a high proportion of riparian areas suitable for this species in an early successional state) would reduce this effect, assuming such management measures would be implemented in the future by Kern County, CDFG, and/or the Service. In consideration of the likely conservation measures provided under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on least Bell's vireo in the study area (if present), and a minor effect on the rangewide population. This alternative would not substantially affect this species.

#### *Little Willow Flycatcher*

Modeled foraging/stopover habitat for the little willow flycatcher would be reduced by 10 acres (1%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described above, suitable foraging and stopover habitat exists in the study area, and little willow flycatchers have been detected near Castac Lake, Cuddy Creek, Beartrap Canyon, Rising Canyon, and along Grapevine Creek. However, the entire breeding range of the little willow flycatcher is located outside of the study area.

An estimated 947 acres (96%) of modeled foraging/stopover habitat for this species would be conserved in open space under this alternative. Outside of those conservation measures provided as part of the TMV Project Approvals, no specific conservation measures for the least Bell's vireo would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the CESA and environmental review and approval process, however, given that the species is state-listed as endangered and considered a special-status species under CEQA. Given that little willow flycatchers on migration have more general habitat requirements than breeding individuals, and that 96% of the available modeled foraging/stopover habitat would be conserved and protected in open space areas, it is anticipated that the loss of 1% of modeled foraging/stopover habitat under the Kern County General Plan Buildout Alternative would have a minor effect on little willow flycatcher stopping over and foraging in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Purple Martin*

Modeled breeding/foraging habitat for the purple martin would be reduced by 6,888 acres (8%) under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1,

Biological Resources, the purple martin breeds locally from British Columbia, eastward to Newfoundland, and southward to Baja California, central Mexico, and the Gulf Coast. In California, the purple martin occurs as a summer resident and migrant; the breeding populations are highly localized, primarily inland and along the central and southern coast. In the Tehachapi Mountains, the purple martin nests regularly in oak woodland, and has been detected in oak woodland and oak savannah communities in the study area. Airola and Williams (2008) found the Tehachapi Mountains support 100 to 200 pairs of purple martin, and may be the one remaining area in California where purple martins regularly nest in oak woodland.

An estimated 78,889 acres (92%) of modeled breeding/foraging habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Similar to the other action alternatives, the Kern County General Plan Buildout Alternative would likely affect breeding sites that have been used by purple martin in the past, and could indirectly affect breeding pairs through competition with starlings. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the purple martin would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be considered a special-status species under CEQA. These conservation measures, if implemented, including preservation of 92% of modeled breeding/foraging habitat in open space, would reduce potential effects on this species from the loss of habitat. Given the apparent importance of the Tehachapi Mountains to this species, it is anticipated that the loss of 8% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor to moderate effect on breeding and foraging purple martin in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Southwestern Willow Flycatcher*

Modeled breeding/foraging habitat for the southwestern willow flycatcher would be reduced by 10 acres (1%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, southwestern willow flycatchers breed in Arizona, New Mexico, California, southwestern Colorado, southern Nevada and Utah, and western Texas. The total number of southwestern willow flycatcher territories in 2002 was estimated to be approximately 1,100 to 1,200, and these territories were distributed in a large number of small breeding populations. These small, isolated breeding populations make the species particularly vulnerable to local extirpation. No southwestern willow flycatchers have been observed in the study area and the study area is not an area of focus in the southwestern willow flycatcher recovery plan (U.S. Fish and Wildlife 2002). However, the southwestern willow flycatcher has low reproductive success due to loss of riparian habitat and cowbird nest parasitism. Therefore, loss of any potential breeding habitat is an important consideration for this species.

An estimated 947 acres (96%) of modeled breeding/foraging habitat would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those conservation measures provided as part of the TMV Project Approvals, no species-specific conservation measures for the southwestern willow flycatcher would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the CESA and environmental review and approval process, given that the species is state-listed as endangered and would be considered a special-status species under

CEQA. In addition, because the species is federally-listed as endangered, proposed development with the potential to affect the species would require either ESA Section 7 or ESA Section 10 authorization from the Service.

Although the net loss of 10 acres of modeled breeding/foraging habitat under the Kern County General Plan Buildout Alternative could affect southwestern willow flycatchers on site, appropriate management of the remaining 96% of modeled habitat (maintenance of a high proportion of the riparian areas suitable for the species in an early successional state), assuming it would be implemented in the future by Kern County, CDFG, and/or the Service, would reduce this effect. In consideration of the likely conservation measures provided under this alternative, including appropriate management of modeled breeding/foraging habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on southwestern willow flycatcher in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tricolored Blackbird*

Modeled foraging and primary breeding habitat for the tricolored blackbird would be reduced by 1,437 acres (8%) and 23 acres (8%) in the study area, respectively, under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, tricolored blackbirds have been observed nesting in the study area adjacent to Castac Lake, and modeled breeding habitat is clustered around that lake. About 99% of the population is endemic to California, and in 2011, tricolored blackbirds nesting in Tulare Basin in Kern County represented approximately 34% of the California population.

An estimated 198 acres (68%) of modeled breeding habitat and 17,042 acres (92%) of modeled foraging habitat would be conserved in open space (including Restricted Open Space) under this alternative.<sup>11</sup> Outside of those conservation measures provided as part of the TMV Project Approvals, no specific conservation measures for the tricolored blackbird would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be considered a special-status species under CEQA.

The net loss of 8% of modeled primary breeding habitat under the Kern County General Plan Buildout Alternative could affect nesting tricolored blackbird colonies in the study area. Under this alternative, development would surround a significant portion of Castac Lake, which is the primary body of water in the study area and is also the location of current breeding colonies. Appropriate

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<sup>11</sup>The percentages of modeled primary breeding habitat conserved (in both open space and Restricted Open Space) and lost for tricolored blackbird only sum to 76% under the Kern County General Plan Alternative (Table 4.1-10). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled primary breeding habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

management of the remaining 68% of modeled breeding habitat, along with implementation of the above conservation measures, would reduce this effect. If appropriate management is implemented, it is anticipated that the loss of 8% of modeled foraging habitat and 8% of modeled breeding habitat under the Kern County General Plan Buildout Alternative would have a moderate effect on tricolored blackbirds in the study area, and minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Western Yellow-Billed Cuckoo*

Modeled breeding/foraging habitat for the western yellow-billed cuckoo would be reduced by 10 acres (1%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the western yellow-billed cuckoo nests at scattered locations in California in dense, riparian woodlands and requires a wide band of riparian habitat. This species has not been detected in the study area and although vegetation communities indicative of breeding habitat have been modeled, a suitable patch size for nesting western yellow-billed cuckoos has not been found in the study area.

An estimated 947 acres (96%) of modeled breeding/foraging habitat would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the western yellow-billed cuckoo would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the CESA and environmental review and approval process, given that the species is state listed as endangered and a candidate for federal listing, and would be considered a special-status species under CEQA. Given the lack of suitable patch size for nesting western-yellow billed cuckoos, and because 96% of modeled breeding/foraging habitat would be conserved and protected in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on western yellow-billed cuckoo in the study area (if present), and a minor effect on the rangewide population. This alternative would not substantially affect this species.

#### *White-Tailed Kite*

Modeled foraging habitat for the white-tailed kite would be reduced by 1,988 acres (22%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the white-tailed kite breeds in Oregon, Washington, and Texas, but the primary breeding populations are found in California, occupying most areas west of the Sierra Nevada foothills and outside of the southeast deserts. The species is an infrequent winter visitor to the study area and there are no breeding records and few occurrence records of the species in the study area.

An estimated 6,969 acres (77%) of modeled foraging habitat would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the white-tailed kite would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the environmental review and approval process, given the species is a state fully protected species and would be considered a special-status species under CEQA. Given the large range of the species, their limited presence in the study area, and because 77% of the modeled foraging habitat would be

conserved and protected in open space, it is anticipated that the loss of 22% of modeled foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on white-tailed kite visiting or wintering in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Yellow Warbler*

Modeled breeding/foraging habitat for the yellow warbler would be reduced by 10 acres (1%) under the Kern County General Plan Buildout Alternative; modeled secondary foraging habitat would be reduced by and 3,958 acres (8%) (Table 4.1-10). As described in Section 3.1, Biological Resources, in California, the yellow warbler has an extensive breeding range, nesting in riparian woodlands from coastal and desert lowlands up to 8,000 feet amsl in the Sierra Nevada. Yellow warblers have been detected during surveys in the TMV Planning Area and are expected to occur throughout the study area within suitable habitat.

An estimated 947 acres (96%) of modeled breeding/foraging habitat and 47,736 acres (92%) of secondary foraging habitat would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the yellow warbler would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be considered a special-status species under CEQA.

As noted above, yellow warblers are sensitive to decreases in deciduous habitat, heterogeneity of riparian habitat and riparian corridor width. They also have reduced reproductive success due to cowbird nest parasitism and nest predation. Given these factors, the net loss of riparian habitat is an important consideration for this species. However, despite many local declines, yellow warblers currently occupy most of their former breeding range with the exception of the Central Valley. Given the high level of habitat conservation and protection (96% of modeled breeding/foraging habitat and 92% of secondary foraging habitat), and with the appropriate management of conserved riparian habitat in open space, it is anticipated that the loss of 1% of modeled breeding/foraging habitat and 8% of modeled secondary foraging habitat under the Kern County General Plan Buildout Alternative would have a minor effect on yellow warblers in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Valley Elderberry Longhorn Beetle*

Modeled habitat for the valley elderberry longhorn beetle would be reduced by 75 acres (3%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the primary range of the valley elderberry longhorn beetle is in the Central Valley, although the species' distribution ranges from southern Shasta County to Fresno County. Elderberry shrubs, the host plants for the beetle, have been mapped at several locations within the TMV Planning Area, although no emergence holes were found on any shrub.

An estimated 2,503 acres (96%) of modeled habitat for the valley elderberry longhorn beetle would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the valley elderberry longhorn beetle would be provided under the Kern County General Plan Buildout

Alternative. However, comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is considered a special-status species under CEQA. In addition, because the species is federally-listed as threatened, proposed development with the potential to affect the species would require either ESA Section 7 or ESA Section 10 authorization from the Service.

Given that 96% of modeled habitat would be preserved under this alternative, it is anticipated that the Kern County General Plan Buildout Alternative would have a minor effect on valley elderberry longhorn beetle in the study area (if present), and a minor effect on the rangewide population. This alternative would not substantially affect this species.

#### *Ringtail*

Modeled habitat for the ringtail would be reduced by 10,310 acres (10%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the ringtail occurs in the southwestern United States and is widely distributed in California. Potential ringtail scat has been observed in the TMV Planning Area, however, the observation was unverified and no occurrences of ringtail were recorded in the TMV Planning Area during the course of extensive camera and scent surveys in 2007.

An estimated 88,707 acres (89%) of modeled habitat for this species would be conserved in open space under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the ringtail would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by CDFG and the local jurisdiction during the environmental review and approval process given that the species is a state fully protected species and would be considered a special-status species under CEQA. Given the extensive range of the species, their unconfirmed (and likely limited) presence in the study area, and because 89% of the modeled habitat would be conserved in open space, it is anticipated that the loss of 10% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor to moderate effect on ringtail in the study area (if present), and a minor effect on the population rangewide. This alternative would not substantially affect the species.

#### *Tehachapi Pocket Mouse*

Modeled habitat for the Tehachapi pocket mouse would be reduced by 82 acres (4%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the Tehachapi pocket mouse is considered to be very rare, and has only been documented in a few scattered localities in the Tehachapi Mountains. There are three CNDDDB-documented occurrences of the Tehachapi pocket mouse along the southern edge of the TMV Planning Area. The Tehachapi pocket mouse was also documented during trapping surveys in and adjacent to the study area as recently as 2010 (Cypher et al. 2010; Dudek 2009).

An estimated 1,849 acres (96%) of modeled habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the Tehachapi pocket mouse would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special

Concern and would be considered a special-status species under CEQA. It is unclear if the known occurrences of this species in Oso Canyon would be preserved under this alternative; however, it is possible that development would occur in that area.

As described above, in general, surface-disturbing activities are incompatible with the persistence of native small mammal populations and as this species occurs in small, scattered populations within a limited range, it is highly vulnerable to local extirpation from natural or human-related disturbance. Given the limited and concentrated range of the species, its known occurrence in the TMV Project Area, and because little is known about the ecology of the species, the loss of 3% of modeled habitat (and possibly two known occurrences) under this Kern County General Plan Buildout Alternative would have a moderate effect on the Tehachapi pocket mouse in the study area, and a moderate effect on the population rangewide. This alternative would not substantially affect this species.

#### *Coast Horned Lizard*

Modeled primary habitat for the coast horned lizard would be reduced by 4,822 acres (12%) under the Kern County General Plan Buildout Alternative; modeled secondary habitat would be reduced by 3 acres (5%) (Table 4.1-10). As described in Section 3.1, Biological Resources, the coast horned lizard is endemic to California and is broadly distributed through the foothills of the Sierra Nevada and throughout most of coastal, central and southern California. Coast horned lizards were observed in the TMV Planning Area and the northwestern corner of Castac Lake at Grapevine Creek.

An estimated 36,210 acres (88%) of modeled primary habitat and 51 acres (82%) of modeled secondary habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative.<sup>12</sup> Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the coast horned lizard would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be considered a special-status species under CEQA. It is anticipated that eight of the 12 known occurrences of this species in the study area would be conserved in open space under this alternative.

Given the relatively wide-spread distribution of the coast horned lizard throughout the region, and because 88% of modeled primary habitat and 82% of modeled secondary habitat would be conserved and protected in open space, as well as eight out of the 12 known occurrences, it is anticipated that the loss of 12% of modeled primary habitat and 5% of modeled secondary habitat under the Kern County General Plan Buildout Alternative would result in a minor effect on coast horned lizard in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

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<sup>12</sup> The percentages of modeled secondary habitat conserved (in both open space and Restricted Open Space) and lost for coast horned lizard only sum to 87% under the Kern County General Plan Buildout Alternative (Table 4.1-10). This is attributable to the assumptions in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages) and assumptions specific to future uses of the Lebec/Existing Headquarters Area (i.e., 145 acres in the Lebec/Existing Headquarters Area are assumed not developed, but are also not included in open space). It is likely that modeled secondary habitat conserved is underestimated because riparian areas have not been fully considered, and because the County land use designations in the Lebec/Existing Headquarters Area would only allow a small component of land in that area to be developed (see Section 4.1.1.2, Methods – Analytical Framework for Biological Effects).

### *Two-Striped Garter Snake*

Modeled habitat for the two-striped garter snake would be reduced by 34 acres (9%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the two-striped garter snake is endemic to southern California and Baja California, Mexico. It is only found in about 60% of its historic range, and is now common only in eastern San Diego County. Two-striped garter snakes have been observed in the TMV Planning Area east of Rising Canyon, in Dry Field Canyon, in Bear Trap Canyon, at Castac Lake, and at a stock pond south of Castac Lake; the species is expected to occur throughout modeled habitat in the study area.

An estimated 254 acres (70%) of modeled habitat for this species would be conserved in open space (including Restricted Open Space) under this alternative.<sup>13</sup> Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for the two-striped garter snake would be provided under the Kern County General Plan Buildout Alternative. However, comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species is a state Species of Special Concern and would be considered a special-status species under CEQA.

In consideration of the range of this species, and the above likely conservation measures that would be implemented to reduce effects on the species, including conservation of 70% of modeled habitat in open space, it is anticipated that the loss of 9% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor to moderate effect on two-striped garter snake in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect the species.

### *Fort Tejon Woolly Sunflower*

Modeled habitat for Fort Tejon woolly sunflower would be reduced by 6,552 acres (11%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the overall geographic distribution of Fort Tejon woolly sunflower is extremely restricted, with the range considered limited to the southern Tehachapi Mountains and the Sierra Madre Mountains in the southeastern-outer south Coast Ranges. Presence/absence surveys in 2007 detected 36 occurrences in the TMV Planning Area.

An estimated 50,862 acres (89%) of modeled habitat for Fort Tejon woolly sunflower would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10), as would all known occurrences in the study area. Outside of the conservation measures provided as part of the TMV Project Approvals, no specific conservation measures for Fort Tejon woolly sunflower would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species has a CRPR of 1B.1 and a California Heritage Element Ranking of S1 and would be considered a special-status species under

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<sup>13</sup> The percentages of modeled habitat conserved (in both open space and Restricted Open Space) and lost for two-striped garter snake only sum to 79% under the Kern County General Plan Buildout Alternative (Table 4.1-10). This is attributable to the assumption in the habitat model specific to riparian areas (i.e., 75% of riparian/wetlands are assumed avoided in development areas, but avoided areas are not included in the open space acreages). It is likely that modeled habitat conserved is underestimated because riparian areas have not been fully considered in the model.

CEQA. In consideration of the likely conservation measures that would be implemented to reduce the effects on this species, and the conservation of 89% of modeled habitat in open space and all known occurrences of the species in the study area, it is anticipated that the loss of 11% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor effect on Fort Tejon woolly sunflower in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Kusche's Sandwort*

Modeled habitat for Kusche's sandwort would be reduced by 2,859 acres (9%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the overall geographic distribution of Kusche's sandwort is limited to the southern Sierra Nevada, western Transverse Ranges, and the San Gabriel Mountains. There are no CNDDDB records of Kusche's sandwort in the study area, although seven occurrences were observed in the TMV Planning Area during presence/absence surveys completed in 2007.

An estimated 27,645 acres (90%) of modeled habitat for Kusche's sandwort would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10), as would all known occurrences in the study area. Outside of the conservation measures provided as part of the TMV Project Approvals, no specific conservation measures for Kusche's sandwort would be provided under the Kern County General Plan Buildout Alternative. It is also unknown if comparable measures to protect this species would be required by the local jurisdiction during the environmental review and approval process because this species currently has no listing status and would not be considered a special-status species under CEQA. Therefore, it is anticipated that the Kern County General Plan Buildout Alternative could have a moderate effect on Kusche's sandwort in both the study area and regionwide, depending on the extent of potential disturbance or loss of additional undocumented populations.

#### *Round-Leaved Filaree*

Modeled habitat for round-leaved filaree would be reduced by 6,265 acres (11%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the round-leaved filaree extends from Baja California to Oregon. While apparently well distributed in central and northern California, it is very rare in southern California. There are no CNDDDB records of round-leaved filaree in the study area, although 11 occurrences were observed in the TMV Planning Area during presence/absence surveys conducted in 2007.

An estimated 51,808 acres (89%) of modeled habitat for round-leaved filaree would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10). Of the 11 known occurrences of this species, 10 are located in mineral and petroleum general plan designations and are not considered to be subject to development; one known occurrence would be directly affected by construction activities associated with the Kern County General Plan Buildout Alternative. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for round-leaved filaree would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species has a CRPR of 1B.1 and a California Heritage Element Ranking of S2 and would be considered a special-status species under CEQA. Nevertheless, the Kern County General Plan Buildout Alternative would result in potential substantial local effects on species abundance. In consideration of the

conservation of 89% of modeled habitat and likely implementation of the above avoidance and minimization measures, it is anticipated that the loss of 11% of modeled habitat and the loss of one known occurrence in the study area, would have a minor effect on the local population of round-leaved filaree, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Striped Adobe Lily*

Modeled habitat for striped adobe lily would be reduced by 3,439 acres (11%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the distribution of striped adobe lily is extremely limited, with only 23 occurrences known in the state. There are three CNDDDB records of striped adobe lily in the study area, although presence/absence surveys in 2007 did not detect any occurrences in the TMV Planning Area.

An estimated 28,754 acres (89%) of modeled habitat for striped adobe lily would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10), as would all known occurrences of this species in the study area. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for striped adobe lily would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species has a CRPR of 1B.2 and California Heritage Element Ranking of S2.1 and would be considered a special-status species under CEQA. Given the conservation of 89% of modeled habitat, preservation of all known occurrences, and likely implementation of the avoidance and minimization measures to reduce potential effects on the species, it is anticipated that the loss of 11% of modeled habitat under Kern County General Plan Buildout Alternative would result in a minor effect on striped adobe lily in the study area, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tehachapi Buckwheat*

Modeled habitat for Tehachapi buckwheat would be reduced by 77 acres (3%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the distribution of Tehachapi buckwheat is extremely limited, within only a single CNDDDB record reported within the Lebec USGS 7.5-minute quadrangle. This species was observed in 31 locations during presence/absence surveys in the TMV Planning Area.

An estimated 2,501 acres (97%) of modeled habitat for Tehachapi buckwheat would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10). Six of the 31 known occurrences in the study area would be preserved in TMV Planning Area Open Space, and the remaining 25 known occurrences would be located in mineral and petroleum general plan designations and are not considered to be subject to development. Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for Tehachapi buckwheat would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species has a CRPR of 1B.1 and California Heritage Element Ranking of S1 and would be considered a special-status species under CEQA. In consideration of the conservation of 97% of modeled habitat, conservation of all known occurrences of the species in the study area, and likely implementation of the above avoidance and minimization measures, it is

anticipated that the loss of 3% of modeled habitat under this alternative would have a minor effect on the local population of Tehachapi buckwheat, and a minor effect on the population rangewide. This alternative would not substantially affect this species.

#### *Tejon Poppy*

Modeled habitat for Tejon poppy would be reduced by 361 acres (3%) in the study area under the Kern County General Plan Buildout Alternative (Table 4.1-10). As described in Section 3.1, Biological Resources, the distribution of Tejon poppy is extremely limited, where it is endemic to central and western Kern County. The CNDDDB includes 58 occurrences of this species; however no occurrences of Tejon poppy were observed in the study area during presence/absence surveys in the TMV Planning Area.

An estimated 12,281 acres (97%) of modeled habitat for Tejon poppy would be preserved in open space (including Restricted Open Space) under this alternative (Table 4.1-10). Outside of those provided as part of the TMV Project Approvals, no specific conservation measures for Tejon poppy would be provided under the Kern County General Plan Buildout Alternative. Comparable measures to protect this species would likely be required by the local jurisdiction during the environmental review and approval process, given that the species has a CRPR of 1B.1 and California Heritage Element Ranking of S1 and would be considered a special-status species under CEQA. Given the preservation of 97% of modeled habitat for this species in open space and the avoidance and minimization measures that would likely be implemented to reduce effects on occurrences should they be detected prior to construction, it is anticipated the loss of 3% of modeled habitat under the Kern County General Plan Buildout Alternative would have a minor effect on Tejon poppy in the study area (if present), and minor effect on the population rangewide. This alternative would not substantially affect this species.

#### ***Construction and Operations Effects***

Construction and operations effects that could affect other Covered Species under the Kern County General Plan Buildout Alternative would be similar to those described under the other action alternatives, although they would be somewhat greater given the larger Development Envelope associated with this alternative. Although species-specific conservation measures have not specifically been identified for this alternative, comparable measures to protect the other Covered Species during construction and operation of developed areas could be required by Federal, state, or local jurisdictions during the environmental and permitting review processes, depending on status of the species and the habitat affected. Similarly, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects resulting from ground-disturbing activities (Section 4.1.6.4, Mitigation Measures). The mitigation measures likely required through Federal, state, or local permitting process, and/or as part of any required ESA compliance process, in combination with the conservation and management of 119,392 acres of open space, make it unlikely that construction or operation of developed areas under the Kern County General Plan Buildout Alternative would substantially affect any of the other Covered Species.

#### **Existing Ranch Uses**

Similar to Existing Ranch Uses under the No Action Alternative, Existing Ranch Uses under the Kern County General Plan Buildout Alternative would have a limited potential to adversely affect other

Covered Species. As described above, grazing activities would have the potential to degrade habitat or water quality in areas where livestock congregate, or where overgrazing occurs. Ground-disturbing activities would have the potential to affect vegetation and habitat quality through erosion, compaction, and sedimentation of surface waters, or degradation of riparian or wetland habitats, which, in turn could affect other Covered Species using those areas for breeding or foraging. Potential effects on wildlife movement and connectivity from Existing Ranch Uses are described in Section 4.1.6.3, Wildlife Movement and Connectivity, below.

As described for the No Action Alternative, other Covered Species typical of grassland communities would be the most likely to be affected by grazing. Similarly, birds, amphibians, and reptiles that fulfill one or more of their life history requirements in riparian areas could also be directly affected by livestock use of water sources, or indirectly affected by sedimentation, erosion, or other adverse water quality affects associated with grazing and/or limited ground disturbance. Finally, plant species could be trampled or otherwise damaged by ground-disturbing activities.

As noted above, the limitations of the Ranchwide Agreement would not apply under this alternative. However, even in the absence of the Ranchwide Agreement, historic ranch practices as currently reflected in the Interim RWMP are anticipated to continue (although they cannot be assured), and compliance with Federal, state, and local requirements governing ground disturbance in sensitive vegetation communities (e.g., wetlands, oak woodlands) would apply. In addition, restrictions imposed by the TMV Project Approvals and by appropriate conservation easement restrictions would apply under the Kern County General Plan Buildout Alternative. Finally, although species-specific conservation measures have not specifically been identified for this alternative, comparable measures to protect the other Covered Species during ground disturbing Existing Ranch Uses could be required by Federal, state, or local jurisdictions during the environmental and permitting review processes, depending on status of the species and the habitat affected.

Potential effects on other Covered Species from Existing Ranch Uses under the Kern County General Plan Buildout Alternative would be minor and would be reduced through implementation of BMPs prescribed as part of the Federal, state, or local permitting processes (Section 4.1.6.4, Mitigation Measures), or as required by TMV Project Approvals. The effects of Existing Ranch Uses under this alternative would be comparable to those described for the No Action Alternative.

### **Other Special-Status Species**

Other special-status species known to occur, or with the potential to occur, in the study area are summarized in Table 3.1-5 in Section 3.1, Biological Resources.

### **Commercial and Residential Development Activities**

Similar to the Proposed TU MSHCP Alternative, permanent effects on special status species resulting from Commercial and Residential Development Activities under the Kern County General Plan Buildout Alternative were generally quantified by analyzing the vegetation communities identified in Table 3.1-5 as habitat associations for these species. Potential effects on these species by habitat type are provided in Table 4.1-11.

**Table 4.1-11. Potential Effects on Vegetation Communities for Other Special Status Species— Kern County General Plan Buildout Alternative**

Total Acreage in Study Area	Scrubs		Chaparrals		Grasslands		Savannahs		Woodlands		Conifer Forest		Riparian/ Wetland		Riparian Woodland		Wash		Agriculture		Total Acreage		Percent		
	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	Cons.	Lost	
	7,841		14,145		24,947		33,121		48,745		3,956		703		59		863		232		120,119	14,750			
	7,430	411	13,211	1,204	21,536	3,408	28,630	4,490	43,964	4,772	3,751	205	674	29	58	1	860	3	5	227	120,119	14,750			
<b>Other Special-status Species</b>																									
California spotted owl									x	x	x	x			x	x						47,773	4,978	91%	9%
Cooper's hawk									x	x	x	x			x	x						47,773	4,978	91%	9%
Long-eared owl									x	x	x	x			x	x						47,773	4,978	91%	9%
Northern harrier	x [foraging]	x			x [foraging]	x							x (nesting)	x					x [foraging]	x		29,645	4,075	88%	12%
Prairie falcon	x	x			x	x	x	x	x	x	x	x	x	x	x	x			x	x		106,048	13,543	89%	11%
Yellow-breasted chat													x	x	x	x						732	30	96%	4%
American badger	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x	x		106,234	13,517	89%	11%
San Bernardino ringneck snake	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		120,119	14,750	89%	11%
Silvery legless lizard	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		120,114	14,523	89%	11%
Aromatic canyon gooseberry			x	x	x	x	x	x	x	x	x	x										111,297	14,079	89%	11%
Calico monkeyflower	x	x	x	x					x	x	x	x			x	x						97,044	11,083	90%	10%
Delicate bluecup			x	x					x	x					x	x						57,233	5,977	91%	9%
Flax-like monardella			x	x					x	x	x	x										60,926	5,977	91%	9%
Golden violet	x	x	x	x					x	x	x	x										96,986	11,082	90%	10%
Pale-yellow layia					x	x	x	x	x	x												94,130	12,670	88%	12%
Palmer's mariposa lily			x	x			x	x	x	x	x	x	x	x	x	x						90,288	10,701	90%	11%
Piute Mountains navarretia	x	x	x	x	x	x	x	x	x	x	x	x							x	x		118,527	14,717	89%	11%
San Bernardino aster	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x				106,903	13,319	89%	11%

The level of effects for the other special-status species would be somewhat greater than the other action alternatives, and the loss of potential habitat would be greater than 10% for several species, including northern harrier, prairie falcon, American badger, San Bernardino ringneck snake, silvery legless lizard, aromatic canyon gooseberry, pale-yellow layia, Palmer's mariposa lily, Piute Mountains navarretia, and San Bernardino aster. As noted above, construction-related BMPs, prescribed by the local jurisdiction as part of the construction, grading, or building permit review processes, would likely be required to minimize potential effects resulting from ground-disturbing activities, which could benefit special-status species (Appendix J, Section 4.1.6.4, Mitigation Measures).

Although the limitations of the Ranchwide Agreement would not apply under this alternative, historic ranch practices as currently reflected in the Interim RWMP are anticipated to continue (although they cannot be assured), and compliance with Federal, state, and local requirements governing ground disturbance in sensitive vegetation communities (e.g., wetlands, oak woodlands) would apply. In addition, restrictions imposed by the TMV Project Approvals and by appropriate conservation easement restrictions would apply under the Kern County General Plan Buildout Alternative. In consideration of these measures and restrictions, and the conservation and management of 119,392 acres of open space, it is unlikely the Kern County General Plan Buildout Alternative would substantially affect any special-status species. These effects would, however, be greater than under the No Action Alternative where no development would occur.

#### **Existing Ranch Uses**

Under this alternative, Existing Ranch Uses would continue to occur in similar areas and at similar levels as Existing Ranch Uses under the No Action Alternative. Potential effects on special-status species and their habitat would be the same as those described in Section 4.1.6.1, Vegetation Communities, above, as those communities relate to the habitat types of individual species. The effects would be comparable to the No Action Alternative.

### **4.1.6.3 Wildlife Movement and Connectivity**

#### **Commercial and Residential Development Activities**

Under the Kern County General Plan Buildout Alternative, development would be consistent with the current Kern County General Plan, and the most intense commercial and residential land uses would be land use designations 3.3, 4.1, 4.3, and 6.3 (Figure 2-7). Most of the study area would be subject to rural development on lots ranging in size from 20 to 80 acres (with 2-acre graded lots) (i.e., land use designations 8.2, 8.3, and 8.5; Figure 2-7). Management of the Restricted Open Space areas associated with rural/estate-type residential development could occur to the extent that these lands would be used as mitigation for individual projects. As such, this alternative would potentially allow greater residential densities and overall habitat disturbances compared to the other alternatives.

The potential for habitat fragmentation and reduced wildlife movement through the study area would be increased under the Kern County General Plan Buildout Alternative given the checkerboard development pattern associated with the above described rural/estate-type residential development areas. While many wildlife species likely would inhabit and move through the interstitial open space in the study area, provided there was adequate distances between residences (e.g., at least several hundred feet; see discussion of wildlife movement through low-

density development above for the Proposed TU MSHCP Alternative), species sensitive to habitat fragmentation would be more likely to be adversely affected by such a scattered development pattern. In addition, the Specific Plan required designations in the western and southern portions of the study area could substantially constrain wildlife movement between the study area and the Los Padres National Forest to the west and the Angeles National Forest to the south. Similarly, the Specific Plan Required designations in the northeast portion of the study area could disrupt movement between the study area and the Sequoia National Forest.

The effects of development under the Kern County General Plan Buildout Alternative on California condor habitat connectivity and overflight would be the same as those described for the Proposed TU MSHCP Alternative. Although the ranch does serve as an important linkage between historic condor habitat areas east and west of the ranch, the proposed development on Tejon Ranch would not prevent condors from continuing to fly over Tejon Ranch, or to access areas further to the east or west of the ranch for the following reasons. The free-flying condors in the southern California subpopulation have been recorded flying over communities in the Tehachapi Mountains that have rural residential densities similar to or greater than development proposed under the Kern County General Plan Buildout Alternative. Such flyovers have resulted in no measurable ill effects with respect to continued condor use of historical and current foraging, roosting, and nesting areas, as evidenced by Service GPS tracking data. Furthermore, a recent USGS statistical analysis of condor GPS data collected from 2004 to 2009 for spatial behavior patterns in six management units in southern California supports the conclusion that condors regularly fly over developed areas and that these areas, based on the GPS data, are part of their estimated home ranges. As such, the Service does not expect condors to avoid flying over similar areas on the ranch after buildout.

Based on the above, it is anticipated that Commercial and Residential Development under the Kern County General Plan Buildout Alternative would result in moderate to high effects on wildlife movement and connectivity. These effects would be greater than the No Action Alternative, where no development would occur. This alternative would have no effect on condor overflight of the study area.

### **Existing Ranch Uses**

Similar to Existing Ranch Uses under the No Action Alternative, Existing Ranch Uses under the Kern County General Plan Buildout Alternative would have a limited potential to affect wildlife movement and habitat connectivity in the study area. Specifically, existing roads that provide access to ranch infrastructure, hunting, other recreational activities or emergency vehicle access, could adversely affect species movement through direct mortality from vehicle strikes and/or loss of habitat connectivity. Other Plan-Wide Activities, such as utility lines and fences, may affect bird (i.e., collisions) or wildlife movement across the Covered Lands.

As noted above, the limitations of the Ranchwide Agreement would not apply under this alternative. However, even in the absence of the Ranchwide Agreement, historic ranch practices as currently reflected in the Interim RWMP are anticipated to continue (although they cannot be assured), which include BMPs to minimize the effects of roads, utilities, and fences on wildlife movement and connectivity (e.g., establishment of “wildlife-friendly fences”, implementation of a dust control plan on well traveled roads). In addition, restrictions imposed by the TMV Project Approvals and by appropriate conservation easement restrictions would apply under the Kern County General Plan Buildout Alternative.

Given the limited existing /proposed road network within open space areas under the Kern County General Plan Buildout Alternative, and the BMPs provided through the TMV Project Approvals and conservation easement restrictions, it is anticipated that Existing Ranch Uses would result in minor effects on wildlife movement and connectivity. These effects would be comparable to those associated with Existing Ranch Uses under the No Action Alternative.

#### **4.1.6.4 Mitigation Measures**

As described above, the limitations of the Ranchwide Agreement would not apply under the Kern County General Plan Buildout Alternative. However, even in the absence of the Ranchwide Agreement, BMPs (as currently set forth in the Interim RWMP) are anticipated to continue (although they cannot be assured). Restrictions imposed by the TMV Project Approvals and by easement language in the Existing Conservation Easement Areas would apply under the Kern County General Plan Buildout Alternative. Comparable measures to those provided in Tables 2-3 and 2-4 in Chapter 2, Propose TU MSHCP and Alternatives, would likely be implemented to avoid, minimize, and mitigate effects on special-status species (i.e., state or federally-listed species, species protected as 'special-status' under CEQA). These measures would be anticipated as part of either the CESA or CEQA processes, or through a project-specific consultation with the Service completed in accordance with either ESA Section 10 or Section 7.

The mitigation measure listed in Section 4.1.3.4, Mitigation Measures, for the Proposed TU MSHCP Alternative are also applicable to the Kern County General Plan Buildout Alternative.

#### **4.1.7 Cumulative Effects**

Cumulative effects on biological resources may result from increased development and changes in land use. The effects on biological resources considered in this Supplemental Draft EIS include direct effects associated with the issuance of the ITP, as well as indirect effects related to the Commercial and Residential Development Activities that would be facilitated by issuance of the ITP. In addition, Plan-Wide Activities/Existing Ranch Uses have the potential to affect biological resources; however, cumulative effects are more likely to occur from development activities. Whether or not the combined effects of the action alternatives (in conjunction with other reasonably foreseeable actions) would result in cumulative adverse effects is primarily dependent on the conservation measures, BMPs, and adaptive management put in place through the alternative itself, as well as the relevant individual development project review and requirements imposed by other Federal, local, and state authorities pursuant to their approval processes for other reasonably foreseeable actions.

As described in Section 4.0.4.1, Cumulative Effects Analysis Area, for most biological resources, the cumulative effects analysis area generally encompasses the Tehachapi Uplands portion of the Southern California Mountains Ecoregion, and the valley and foothill areas outside the Tehachapi Uplands, where adjacent projects have the potential to affect local breeding and/or migratory populations of other covered species. This area was selected for the cumulative effects analysis because, for biological resources, cumulative effects are generally more likely to occur in areas where vegetation, elevational, geographical, and climate conditions are similar to the study area. Specifically, in the Tehachapi Uplands, Gorman Post Ranch is located in the western Tehachapi Mountains above 3,400 feet (Harmsworth 2006) and Frazier Park Estates is located in the Transverse Mountains above 3,900 feet (Kern County 2009d). Potential effects associated with the more urban-type development in the valley and foothill areas are also evaluated in this section,

including development associated with the Centennial, Grapevine, and Tejon Ranch Commerce Center projects.

For California condors, the cumulative effects analysis area has been expanded to represent the range of the California population of condors, including the southern California subpopulation, which generally occurs between San Luis Obispo County and Ventura County, through the Tehachapi Mountains and into the southern Sierra Nevada, and the northern California subpopulation, which generally occurs between the Big Sur Coast in Monterey County and Pinnacles National Monument in San Benito County. The cumulative effects analysis area for the condor has been expanded because the Service anticipates that there will be more intermixing between the northern and southern California subpopulations of the condor over the 50 year ITP term as the species increases in numbers, and condor use of its historic range in California continues to expand.

Finally, the following additional projects in the Tehachapi Uplands beyond the boundaries of Tejon Ranch and Gorman Post Ranch are also considered in this section because they have the potential to cumulatively affect one or more biological resources, and in particular the condor. The Service is not aware of any large scale development projects in Monterey or San Benito Counties.

- **Wind Projects.** Kern County is currently considering applications for 16 different wind energy projects in the Tehachapi Wind Resource Area (Kern County 2011; Figure 4.0-1). Between 2005 and September 2011, four of these projects were approved by Kern County. The remaining projects are being reviewed by the County in compliance with CEQA, with a decision from Kern County pending. Additional area within the Tehachapi Wind Resources Area is zoned for wind energy projects and is likely to be developed over the term of the 50-year ITP. For the purposes of this Supplemental Draft EIS analysis, it is assumed that all wind energy projects within the Tehachapi Wind Resource Area are within the range of condors. Several additional wind projects east of the Tehachapi Wind Resource Area are also considered in this section because they are within the range of the condor (Figure 4.0-1). There are no reasonably foreseeable wind projects in Monterey and San Benito Counties.
- **Tehachapi Renewable Transmission Project.** A 173-mile transmission line project is proposed to run from San Bernardino County to Kern County, portions of which occur near areas used by condors (Figure 4.0-1).
- **Newhall Ranch Development Project.** The Newhall Ranch development project would include construction of residential, commercial and public facilities on approximately 3,500 acres, and preservation of approximately 10,200 acres of open space in Los Angeles and eastern Ventura Counties (Figure 4.0-1). The Service provided USACE (the Federal lead permitting agency for the project) with a biological opinion for this project in June 2011 that addressed three of the Covered Species considered in this EIS: California condor, least Bell's vireo and southwestern willow flycatcher, as well as potential effects on California condor critical habitat (U.S. Fish and Wildlife Service 2011a). The biological opinion exempted take of one condor as a result of habituation.

Because the Newhall Ranch Development Project is located well south of the Covered Lands (outside the general cumulative effects analysis area for biological resources), the cumulative effects of this project are only considered for the California condor.

- **Oil and Gas Lease Expansion Project - Los Padres National Forest.** In compliance with the Onshore Oil and Gas Leasing Reform Act of 1987, the U.S. Forest Service has delineated three specific high oil and gas potential areas within the Los Padres National Forest where oil and gas exploration, development, and production may be authorized for the next 10 to 15 years for activities to be conducted over a likely 50-year period. These three areas encompass 106,584 acres and are located adjacent to areas where oil and gas operations are already occurring on Los Padres National Forest lands. The Service provided the U.S. Forest Service with a biological opinion for this project in September 2011 that addressed three of the Covered Species considered in this EIS: California condor, least Bell's vireo and southwestern willow flycatcher, as well as potential effects on California condor critical habitat (U.S. Fish and Wildlife Service 2011b). The biological opinion exempted take of one condor as a result of habituation.

Similar to the Newhall Ranch Development Project, because the oil and gas lease expansion project would be located well west of the Covered Lands (outside the general cumulative effects analysis area for biological resources), the cumulative effects of this project are only considered for the California condor.

- **Panoche Valley Solar Farm.** The Panoche Valley Solar Farm would include construction and operation of a 420 megawatt photo-voltaic solar power plant in unincorporated eastern San Benito County. Solar panels would be installed over an area of approximately 4,885 acres (7.6 square miles) and would include construction of 4 million solar arrays, a substation, onsite access roads, and buried electrical collection conduit. Electricity generated onsite would be transmitted to the State's electrical grid through two existing Pacific Gas and Electric Company (PG&E) transmission lines. About 23,300 acres would be preserved in open space under this project, and low density grazing (likely sheep) would generally continue after the solar panels are installed. To minimize potential effects on condors, the project applicant would be required to construct all transmission facilities, towers, poles, and lines to minimize avian electrocutions (San Benito County 2010).

Similar to the Newhall Ranch Development Project, because the Panoche Valley Solar Farm Project would be located well west of the Covered Lands (outside the general cumulative effects analysis area for biological resources), the cumulative effects of this project are only considered for the California condor.

As described in Section 4.0.4.2, Other Reasonably Foreseeable Projects, in addition to the potential development described above, ongoing management of several substantial areas of open space and public lands in the vicinity of the study area are considered in this analysis. Specifically, to the north and east of the study area, in the Sierra Nevada Ecoregion, there are large areas of public land (mostly Bureau of Land Management and U.S. Forest Service [i.e., Sequoia National Forest] properties). To the west of I-5 and south of SR 138, comprising the northern extent of the Southern California Mountains Ecoregion, are both private and public open space lands, including the Wind Wolves Preserve, the Los Padres National Forest, and the Angeles National Forest. Ongoing management of these lands is likely to cumulatively benefit several wildlife species, in particular condors.

### 4.1.7.1 Vegetation Communities

As described above, ground disturbance associated with Commercial and Residential Development Activities and Existing Ranch Uses/Plan-Wide Activities under each of the alternatives would result in direct (i.e., loss of habitat) and indirect (e.g., introduction of nonnative species, erosion) effects on vegetation communities, including several communities that are considered special-status by Federal, state, or local resources agencies; (i.e., alluvial scrub, native grasslands, oak savannahs, and oak woodlands [upland communities] and all of the riparian/wetland/wash communities). As described in Section 3.1, Biological Resources, the predominant vegetation communities in the study area are woodlands and savannahs, which comprise 61% of the total cover of special-status vegetation communities (Table 3.1-1). Grasslands (excluding nonnative grasslands) comprise approximately 13% of special-status vegetation communities in the study area, and scrub and chaparral total approximately 6% and 11%, respectively (Table 3.1-1). Conifer communities comprise about 3% of the study area and primarily occur at higher elevations in the eastern portion of the study area. Riparian/wetland/wash communities are a relatively small component of the vegetation communities in the study area, comprising only 1% of the total cover of special-status vegetation communities (Table 3.1-1). Of these communities, desert wash/riparian/seeps and lake (Castac Lake) are the largest components, accounting for 74% of the total.

Under the No Action Alternative, no development would occur and there would be no meaningful contribution to cumulative effects on vegetation communities from development. Although effects on vegetation could occur from Existing Ranch Uses (i.e., trampling of vegetation from livestock grazing, limited ground disturbance from maintenance of existing infrastructure), these effects would be reduced through implementation of the BMPs and use restrictions required pursuant to the Ranchwide Agreement, and would not contribute to a substantial cumulative effect on vegetation communities.

Under the action alternatives, development in the Tehachapi Uplands, including development associated with the alternatives considered in this Supplemental Draft EIS, would primarily affect woodland and savannah vegetation communities, while development in valley and foothill areas would primarily affect grassland communities. This highlights the fact that while the montane, valley, and foothill areas all support the general types of vegetation found in the study area, these broadly defined vegetation communities are differently represented in the montane and non-montane ecoregions within the cumulative effects analysis area. For this reason, effects on vegetation communities associated with projects in the Tehachapi Uplands (i.e., Gorman Post Ranch and Frazier Park Estates) would be more similar to those associated with the Covered Activities, and more likely to result in a cumulative effect, than those associated with the valley and foothill projects (i.e., Centennial, Grapevine, Tejon Ranch Commerce Center), which would primarily affect grasslands. As such, the following discussion focuses on the potential cumulative effects of the Tehachapi Uplands projects—Frazier Park Estates and Gorman Post Ranch—on vegetation communities. For informational purposes, effects on special-status vegetation communities associated with the valley/foothill projects that can be quantified are also described below. The other reasonably foreseeable projects summarized above (i.e., wind projects, Tehachapi Renewable Transmission Project, Newhall Ranch Development Project, and the oil and gas lease expansion project in the Los Padres National Forest) are located far enough away from the study area and/or in different habitat types that cumulative effects on vegetation communities would not occur.

When considered in combination with Gorman Post Ranch and Frazier Park Estates projects, the Proposed TU MSHCP Alternative could cumulatively effect up to 4,867 acres of woodlands and

savannahs, 3,020 acres of grasslands, 845 acres of chaparral, 763 acres of scrub, 73 acres of conifer forest, and 54 acres of riparian/wetlands. The estimates of the areas cumulatively affected by these projects are highly speculative and do not take into account local, state, and Federal permitting processes and requirements designed to reduce potential effects on special-status vegetation communities (Section 4.1.1.1, Regulatory Setting). Additionally, cumulative effects on vegetation communities would be offset by lands set aside in open space in montane areas (e.g., together, the Proposed TU MSHCP Alternative, Frazier Park Estates, and Gorman Post Ranch would result in 128,334 acres of conserved vegetation communities in montane areas, or 93% of these communities located in the cumulative effects analysis area).

In addition, while not part of the Tehachapi Uplands, several of the valley/foothill projects considered in the cumulative effects analysis (i.e., Centennial and Tejon Ranch Commerce Center) could result in effects on approximately 7,233 acres of grasslands, 734 acres of scrub/chaparral, 122 acres of woodlands and savannahs, and 150 acres of riparian/wetlands.<sup>14</sup> As described above, grasslands represent the vast majority of the land cover in the valley and foothill project areas, and the Covered Activities in the study area would primarily affect woodlands and savannahs (i.e., less than 1% of grasslands [excluding nonnative grasslands] would be removed by development under the Proposed TU MSHCP Alternative). Nevertheless, development in the valley/foothill area would result in 8,759 acres of preserved open space encompassing all of the special-status vegetation communities, including grassland communities. In combination with the montane area projects, 137,093 acres of land would be conserved in open space, including 78,778 acres of woodlands and savannahs, 30,079 acres of grasslands, 22,515 acres of chaparral/scrub, 3,883 acres of conifer forest, and 1,838 acres of riparian wetlands. Land set aside as open space under these projects would be part of the larger 240,000 acres of open space conserved as part of the Ranchwide Agreement. As a result, the Proposed TU MSHCP Alternative, in combination with other reasonably foreseeable projects described above, is not expected to result in substantial cumulative effects on special-status vegetation communities.

Cumulative effects on vegetation communities under the Condor Only HCP Alternative would be the same as for the Proposed TU MSHCP Alternative, as described above.

Cumulative effects on vegetation communities under the CCH Avoidance MSHCP Alternative would be greater than the No Action Alternative, but less than the Proposed TU MSHCP and Condor Only HCP Alternatives because the acreage of ground disturbance, and the resulting loss of vegetation, would be less (Table 4.1-1). Similarly the cumulative contribution to effects on vegetation communities would be greater under the Kern County General Plan Buildout Alternative compared to the No Action, Proposed TU MSHCP, Condor Only HCP, or CCH Avoidance MSHCP Alternatives because the acreage of ground disturbance would be greater. Nonetheless, given the open space that would be set aside and the BMPs and/or mitigation measures to reduce ground-disturbing effects anticipated to be part of the project-by-project approvals, it is not expected that the Kern County General Plan Buildout Alternative would result in a substantial cumulative effect on special-status vegetation communities.

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<sup>14</sup> As noted above, these estimates are speculative and do not take into account local, state, and Federal permitting processes and requirements designed to reduce potential effects on special-status vegetation communities (Section 4.1.1.1, Regulatory Setting).

#### 4.1.7.2 Wildlife and Plant Species

As described above, ground disturbance associated with Commercial and Residential Development Activities and Existing Ranch Uses/Plan-Wide Activities under each of the alternatives would result in direct (i.e., loss of habitat) and indirect (e.g., introduction of nonnative species, disturbance, exposure to microtrash) effects on wildlife and plant species. Cumulative effects on the Covered Species and wildlife movement are described below.

##### California Condor

Commercial and Residential Development Activities under the Proposed TU MSHCP Alternative have the potential to adversely affect the California condor and their habitat through loss of foraging habitat; habituation to human structures and activities; increased risk of collisions with power lines, communication towers, and other artificial structures; and ingestion of microtrash. Similarly, some Existing Ranch Uses/Plan-Wide Activities, such as filming, recreation, and limited utility construction, would have the potential to result in disturbance of roosting or feeding condors, generation of microtrash, or increased risk of collision, which could adversely affect condors. However, ongoing livestock grazing and hunting activities on the ranch would continue to provide a food source for condors, which would benefit the species. The following considers these effects in combination with similar effects associated with the other reasonably foreseeable projects in the cumulative effects analysis area.

Under the No Action Alternative, no development would occur and there would be no meaningful contribution to cumulative effects on condors from development. Although effects on condors could occur from Existing Ranch Uses (i.e., generation of microtrash in areas used by humans, disturbance of roosting condors), these effects would be reduced through implementation of the BMPs and use restrictions required pursuant to the Ranchwide Agreement, and would not contribute to a substantial cumulative effect on the species.

The Proposed TU MSHCP Alternative and Condor Only HCP Alternative would result in the direct loss of and indirect effects on 17,995 acres of suitable foraging habitat for the condor. Similarly, about 6,653 acres of suitable foraging habitat would be directly lost and indirectly affected under the CCH Avoidance MSHCP Alternative. The extent of effects on suitable foraging habitat under the Kern County General Plan Buildout Alternative cannot be determined because the location of the entire Development Envelope is unknown; however, it is likely that the effects would be greater than the other action alternatives given the larger Disturbance Area and the dispersed nature of the proposed development. For each of the alternatives, the Service considered food availability in the condor's range as part of the analysis of the loss of suitable foraging habitat and estimated that there is sufficient food resources from grazing, hunting, and native ungulate populations within the condors historic range to support not only the current population of condors, but also one of the two free-flying populations of 150 birds envisioned in the California Condor Recovery Plan. Consequently, even with the Commercial and Residential Development Activities proposed under the alternatives, given the estimated amount of foraging habitat that would remain on Tejon Ranch, and the estimated food for condors that would be produced from cattle, pig, and native ungulate carcasses on that foraging habitat, it is likely that the ranch would continue to function as an essential and viable foraging area for the expanding condor population.

From a cumulative perspective and with respect to the loss of foraging habitat, condors have been known to fly over the Centennial, Grapevine, and Tejon Ranch Commerce Center land areas,

although not as frequently as the study area (Johnson et. al. 2010, U.S. Fish and Wildlife Service 2011a). While some suitable grassland foraging habitat may be lost as a result of proposed development in these areas, the acreage of suitable foraging habitat that would be preserved under the alternatives (and, presumably, in some portion of the 137,093 acres of open space preserved as a result of the montane area projects [i.e., Proposed TU MSHCP Alternative, Frazier Park Estates, and Gorman Post Ranch] and valley/foothill area projects [i.e., Centennial, Tejon Ranch Commerce Center]), and the continued availability of adequate food supplies, would reduce the potential for a substantial adverse cumulative effect on food supplies for the condor. About 5,722 acres would be preserved in open space under Newhall Ranch development project, which would continue to provide suitable foraging habitat for condors in permanent conservation easements (USFWS 2011a). Similarly, about 23,300 acres would be preserved in open space under Panoche Valley Solar Farm project, and livestock grazing would continue to be allowed after the solar panels are installed. The wind energy projects listed above, as well as the northernmost reaches of the Tehachapi transmission line, would also be in areas considered suitable for condor foraging or general flyover movements (CPUC and USDA Forest Service, Final EIR/EIS Southern California Edison's Application for the Tehachapi Renewable Transmission Project, Application No A.07-06-031. SCH No. 2007081156). Although these projects could result in direct and indirect effects on suitable condor foraging habitat, they are not anticipated to substantially affect condors' ability to find food in the cumulative effects analysis area. The ongoing availability of open space and food resources in public and private lands within the historic range of the condor in California would further reduce any cumulative effect on suitable foraging habitat in the cumulative effects analysis area. Although there would be a cumulative loss of foraging habitat associated with each of the action alternatives when considered in combination with the other reasonably foreseeable projects, it is anticipated that the amount of foraging habitat conserved under the action alternatives and other reasonably foreseeable projects would reduce the effect. None of the proposed action alternatives would result in a cumulatively substantial effect on the population rangewide for a loss of foraging habitat.

The Service does not expect the alternatives to have an effect on condor nesting habitat (i.e., there are no known nesting sites in the study area or on Tejon Ranch), and, therefore, would not result in a cumulative effect. Condors would not be precluded from accessing existing nest sites and nesting habitat outside of the study area as a result of the Covered Activities.

From a cumulative perspective and with respect to habituation, both the Newhall Ranch Development Project and the oil and gas lease expansion in the Los Padres National Forest have the potential to result in habituation of condors (U.S. Fish and Wildlife Service 2011a, 2011b). The Service has exempted take (i.e., habituation) of one condor under each of these projects. These projects include measures to minimize adverse effects on the condor, and the associated biological opinions include measures to minimize the effects of the take (U.S. Fish and Wildlife Service 2011a, 2011b). Similarly, the Proposed TU MSHCP Alternative, Condor Only HCP Alternative, and CCH Avoidance MSHCP Alternative would include measures to reduce the potential for habituation of condors, including a provision that a dedicated, onsite Service-approved biologist respond to negative interactions between humans and condors quickly using Service-approved measures for hazing.

The habituation of four condors under the Proposed TU MSHCP Alternative over the term of the permit (as well as the other action alternatives), when considered in combination with the assumed habituation of two condors (total) under the Newhall Ranch Development Project and oil and lease expansion project in the Los Padres National Forest, have the potential to result in cumulative

adverse effect. However, the Service has determined that the habituation of up to six condors as a result of the proposed action alternatives, Newhall Ranch project, and Los Padres National Forest oil and gas lease expansion project would be reasonable, given the expanding condor population, and would not result in a substantial adverse effect on the population. This conclusion is based on the Service's experience with previous undesirable interactions between humans and condors (i.e., typically juvenile birds that are receptive to hazing efforts; the unlikely habituation of a breeding bird, which would have a more substantial effect on the population; the conservation measures proposed under the action alternatives to reduce the potential for habituation [e.g., removal of microtrash, ongoing monitoring by a Service approved biologist]; and the avoidance and minimization measures that would be provided to reduce the potential for habituation from the other reasonably foreseeable projects [e.g., development of aviation protection plans that include requirements for disposal of microtrash]). For these reasons, the potential for the permanent removal of condors from the wild as a result of habituation is low. Habituation of six of condors over 50 years would not substantially affect the condor population, or result in a substantial cumulative effect.

From a cumulative perspective and with respect to collisions, wind farms can pose a threat to condors as rotating blades can strike a condor in flight. Wind turbines tend to be placed in areas (i.e., ridgetops, upper elevation slopes) that are often attractive to condors; the same strong winds that drive the turbines are also a source of lift for these large birds. As described in the effects analysis above, transmission lines pose collision risks to condors in flight, as well as electrocution risks for condors that may perch on transmission poles and towers. While detailed avian protection plans are required for wind projects to reduce adverse effects from collisions, and would similarly be required for the Panoche Valley Solar Farm Project, some level of effect on condors is possible.

As stated above, no new high-voltage towers or aboveground transmission lines would be constructed anywhere in the study area under any of the proposed action alternatives (although two existing lines may be relocated within 1,000 feet of their current location in the lower elevation of the ranch), and no wind farms would be constructed anywhere in the study area. TRC would also preclude the development of wind farms on the adjacent Gorman-Post Ranch in perpetuity through a negative easement they hold over this property. Only individual wind turbines intended to serve individual sites would be allowed, and the siting and design of these turbines would be subject to review and approval by the Service. The new emergency communication tower(s) (discussed above) would be limited in height and number to minimize effects on condors. The exact locations are yet to be determined, but the general proposed locations are not on the highest ridges. Additional efforts to site these towers in areas that further reduce the potential for collisions would be implemented, considering that the final tower locations must provide suitable emergency radio communication coverage for Kern County. Requirements to comply with aviation protection plans (wind projects) and, to construct all transmission facilities, towers, poles, and lines to minimize avian electrocutions (Panoche Valley Solar Farm Project), would further reduce the potential for a cumulative effect.

Although there would be an increased potential for collisions with newly constructed infrastructure given the presence of additional towers (associated with the action alternatives), wind turbines (associated with reasonably foreseeable wind projects), and other transmission lines (associated with the Panoche Valley Solar Farm project), it is anticipated that the above minimization measures would reduce the potential for this cumulative effect so that it is not substantial.

Finally, an increase in human presence associated with development would be expected to increase the risk of microtrash occurring in areas currently not exposed to high levels of human activity. Conservation measures would be implemented under the Proposed TU MSHCP Alternative, Condor

Only Alternative, and CCH Avoidance MSHCP Alternative to minimize risks associated with the Covered Activities, including requirements that microtrash be removed from construction sites, recreational areas, outdoor filming projects, roads, and back-country areas where human presence occurs, and that education materials be provided to contractors, residents, and guests identifying the types of microtrash that could be ingested by condors. It is possible that similar measures would be required or implemented for the other reasonably foreseeable projects in the cumulative effects analysis area, although such measures could not be assured by the Service unless an ESA Section 7 or Section 10 process is required prior to project approval. In addition, although minimization measures would generally reduce the potential for condors to be exposed to microtrash, there would be an increased overall potential for microtrash to occur in the cumulative effects analysis area. Although there would be an increased potential for condors to be exposed to microtrash, it is anticipated that the above minimization measures would reduce the potential for this cumulative effect so that is not substantial.

These cumulative effects would be comparable under the Proposed TU MSHCP, Condor Only HCP, and CCH Avoidance MSHCP Alternatives, but would be greater under the Kern County General Plan Buildout Alternative because minimization measures would not be provided or guaranteed in a habitat conservation plan. Conversely, cumulative effects associated with loss of foraging habitat, habitation, collisions with infrastructure, and increased exposure of condors to microtrash would not occur under the No Action Alternative because development and increased use of the study area by humans would not occur.

### **Other Covered Species**

As described above, each of the alternatives would result in direct and indirect effects on the other Covered Species. Specifically, the Covered Activities could result in loss of modeled habitat as a result of development or ground-disturbing activities in open space; construction-related effects, such as generation of fugitive dust, construction noise and vibration, and degradation of water quality; operation-related effects, such as lighting, increased human activity, and presence of domestic pets; and erosion or compaction of vegetation and habitat as a result of grazing. Potential effects on wildlife movement are provided in the following Section 4.1.7.3, Wildlife Movement.

The discussion below analyzes whether the the alternatives, when considered in combination with the reasonably foreseeable projects in the cumulative effects analysis area, could result in substantial cumulative effects on the other Covered Species, depending on the habitat requirements of a particular species and the location of the other projects. Cumulative effects would be most likely for species most typical of montane habitats, given that effects associated with the alternatives would primarily occur in savannah and woodland habitats (see cumulative effects discussion for vegetation communities above). Nevertheless, because many species, such as birds, use a wide variety of habitat types, the discussion below considers the cumulative effects of the alternatives in combination with all the cumulative projects in the cumulative effects analysis area to capture potential cumulative effects that occur in a range of habitat types beyond montane communities.

### **Tehachapi Slender Salamander**

Of the cumulative projects considered in this analysis, only the Frazier Park Estates project could affect this species. That project would result in a minimal loss (0.55 acre) of suitable habitat for the Tehachapi slender salamander and would conserve 84% of the suitable habitat on site (Kern County 2009d). No Tehachapi slender salamanders have been documented at Frazier Park Estates. In

consideration of the conservation of suitable habitat in open space in Frazier Park Estates (84%), the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 96% and 98% of modeled habitat preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on the species, it is anticipated that cumulative effects on Tehachapi slender salamander would be minor, and would not substantially affect the species rangewide.

### **Western Spadefoot**

Of the cumulative projects listed, suitable habitat for foraging and dispersal (not breeding) of western spadefoot could exist at the Tejon Ranch Commerce Center and Grapevine (Kern County 2002). One adult western spadefoot was observed on the Tejon Ranch Commerce Center project site and another was observed on an adjacent parcel during surveys in 2000. However, sufficient water for reproduction does not occur on that site, and it is not known where the species is breeding locally. Therefore, it is likely this species only uses the Tejon Ranch Commerce Center for foraging and dispersal. Suitable foraging and dispersal habitat for the western spadefoot is being conserved in the 1,122-acre mitigation land that was set aside as a result of the ESA Section 7 biological opinion for that project. In addition, preconstruction surveys for western spadefoot are required for all projects proposed in the Tejon Ranch Commerce Center site and, if present, CDFG would be consulted to determine appropriate courses of action (e.g., translocation).

In consideration of the preservation and management of suitable habitat at the Tejon Ranch Commerce Center, the permitting and open space (3,300 acres per the Ranchwide Agreement) requirements that would apply to Grapevine when proposed, the preservation and management of modeled habitat under the alternatives (i.e., between 89% and 90% of modeled habitat preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on the species, it is anticipated that cumulative effects on western spadefoot would be minor, and would not substantially affect the species rangewide.

### **Yellow-Blotched Salamander**

Potential effects on yellow-blotched salamander habitat would be avoided on the Gorman Post Ranch project site. Yellow-blotched salamander was not observed on Centennial (BonTerra 2008); however, there is suitable habitat present in the heavily wooded drainage in the western portion of the site. The Centennial project could result in effects on approximately 122 acres, or 10%, of the mixed woodlands on site. There is also suitable habitat for this species on the Frazier Park Estates site, but the project's 348-acre nature preserve has been designed to protect special-status species on site, and no effects on yellow-blotched salamander were identified in the project's EIR (Kern County 2009d).

In consideration of the preservation and management of habitat occupied by yellow-blotched salamander on Gorman Post Ranch (Harmsworth Associates 2006), the limited effect (122 acres, 10%) on suitable habitat from the Centennial project (BonTerra 2008), the conservation and management of modeled habitat in the study area under the alternatives (i.e., between 89% and 98% of modeled habitat preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on the species, it is anticipated that cumulative effects on yellow-blotched salamander would be minor, and would not substantially affect the species rangewide.

### **American Peregrine Falcon**

Peregrine falcons have only been observed on one of the project sites considered in the cumulative effects analysis, Gorman Post Ranch (Harmsworth Associates 2009). There is no suitable breeding habitat for American peregrine falcons on any of the project sites. The Gorman Post Ranch project would result in the loss of 491 acres of suitable foraging habitat for the American peregrine falcon and would conserve 73% of the suitable foraging habitat for the falcon on site. Suitable foraging habitat exists on the Frazier Park Estates site, but the project's 348-acre nature preserve has been designed to protect special-status birds, and no effects on American peregrine falcon were identified in the project's EIR (Kern County 2009d). Wind projects proposed in the cumulative effects analysis area may also directly affect falcons if they are injured or killed by spinning turbine blades. While detailed avian protection plans are required for wind projects to avoid such effects, whether full avoidance can be achieved is unknown. These projects would not be expected to result in a substantial loss of foraging habitat, however, because of the small footprint of wind turbines on the landscape.

No wind farms would be constructed in the study area under any of the proposed action alternatives, and only individual wind turbine devices installed to serve electrical generation needs on site may be constructed in the study area, and only after review and approval by the Service. As a result, cumulative effects on American peregrine falcon from collisions with spinning blades would not be anticipated. In consideration of the habitat conserved on Gorman Post Ranch (73%) and Frazier Park Estates, the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 87% and 92% of modeled foraging habitat and 97% to 100% of modeled breeding habitat preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on the species, it is anticipated that cumulative effects on American peregrine falcon would be minor, and would not substantially affect the species rangewide.

### **Bald Eagle**

Bald eagle was observed foraging adjacent to the Centennial project site (BonTerra 2008), and it is anticipated that project would result in a minimal loss of suitable foraging and perching habitat for bald eagle. The Centennial project would also result in the loss of approximately 150 acres of riparian/wetland communities, although 67% (312 acres) of the riparian/wetlands communities on site would be conserved (BonTerra 2008).<sup>15</sup> Wind projects proposed in the cumulative effects analysis area may also directly affect bald eagle if they are injured or killed by spinning turbine blades. While detailed avian protection plans are required for wind projects to avoid such effects, whether full avoidance can be achieved is unknown. These projects would not be expected to result in a substantial loss of foraging habitat, however, because of the small footprint of wind turbines on the landscape.

As noted above, only individual wind turbine devices installed to serve electrical generation needs on site may be constructed in the study area under the proposed action alternatives, and only after review and approval by the Service. As a result, cumulative effects on bald eagle from collisions with spinning blades would not be anticipated. In consideration of the preservation of riparian/wetlands communities on the Centennial project site (a minimum of 67%, which does not account for

avoidance that would be achieved through wetlands permitting processes), the preservation and management of modeled foraging habitat in study area under the alternatives (i.e., 96% modeled foraging habitat preserved in open space), the management of the remaining wintering habitat around Castac Lake under the alternatives (i.e., between 42% and 63% of modeled winter roosting habitat), and the other conservation measures included for the alternatives to reduce potential effects on this species, it is anticipated that cumulative effects on bald eagle would be minor, and would not substantially affect the species rangewide.

### **Burrowing Owl**

As described in Section 3.1, Biological Resources, burrowing owl is found in many areas in California. On Centennial, potentially suitable foraging and nesting habitat exists throughout the site, but the species is expected to occur in low numbers based on its absence during focused burrowing owl surveys (BonTerra 2008). Similarly, no burrowing owls were observed on the Tejon Ranch Commerce Center project site at the time of project approval (Kern County 2002), although suitable burrowing owl habitat is being conserved in the 1,122-acre mitigation land that was set aside as a result of the ESA Section 7 biological opinion. In addition, preconstruction surveys for burrowing owl would be required for all projects proposed in the Tejon Ranch Commerce Center site and, if present, CDFG would be consulted to determine appropriate courses of action (e.g., avoidance during nesting season, translocation). Preconstruction surveys for burrowing owl would also be required for the Centennial project, and approximately 5,192 acres of grasslands considered suitable habitat for burrowing owl would be conserved and managed in open space (BonTerra 2008). Although the amount of suitable burrowing owl habitat at the Grapevine project site is not known, at least 3,300 acres of open space would be conserved and similar preconstruction surveys and measures would be required prior to construction.

Because of their use of ground burrows as nest sites, the construction/installation of wind turbine farms could affect existing active owl burrows. Once active, spinning turbine blades could also directly affect owls that may be flying in the same areas. However, potential effects on either nest burrows or individual owls would depend on the habitat in which the turbines are sited. Avoidance and minimization measures for burrowing owls have been identified in the draft CEQA documents for several wind projects (Alta-Oak Creek Mojave DEIR, Pacific Wind Energy DEIR, PdV Wind Energy Project DEIR), and would be expected to reduce project-specific effects on this species.

As noted above, only individual wind turbine devices installed to serve electrical generation needs on site may be constructed in the study area under the proposed action alternatives, and only after review and approval by the Service. As a result, cumulative effects on burrowing owl from collisions with spinning turbine blades would not be anticipated. Similarly, disturbance of active nests during construction of wind turbines in the study area would not be expected given the requirement for preconstruction surveys under all of the alternatives. In consideration of the preservation and management of suitable habitat at the Tejon Ranch Commerce Center site (1,122 acres of grassland) and Centennial project site (5,192 acres of grasslands), the conservation of 3,300 acres of open space associated with the Grapevine project, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 88% and 93% of modeled primary breeding/foraging habitat preserved in open space and between 92% and 94% of modeled

<sup>15</sup> These acreage estimates are conservative in that they do not account for additional avoidance and minimization measures expected to be required in conjunction with future Federal CWA Section 404 and California Fish and Game Code Section 1600 permitting processes.

secondary breeding/foraging habitat), the requirements for preconstruction surveys and avoidance and minimization measures that are relevant to all sites, and the conservation measures included for the alternatives to reduce potential effects on this species, it is anticipated that cumulative effects on burrowing owl would be minor, and would not substantially affect the species rangewide.

### **Golden Eagle**

Golden eagles are resident raptors in the cumulative effects analysis area, particularly in association with hilly terrain characterized by grasslands, oak savannahs, and oak woodlands. Golden eagles are not known to nest on the various project sites considered in this assessment; however, golden eagles were observed foraging on Gorman Post Ranch (Harmsworth Associates 2006). The Gorman Post Ranch project would result in the loss of approximately 717 acres of suitable foraging habitat for the golden eagle and would conserve approximately 2,000 acres (74%) of suitable foraging habitat for the species on site. Golden eagles were also observed foraging on the Centennial project site (BonTerra 2008). The Centennial project would conserve approximately 8,667 acres of natural areas suitable for golden eagles to forage, including 1,076 acres (90%) of suitable breeding habitat. Suitable roosting and foraging habitat also exists on the Frazier Park Estates site. The project's 348-acre nature preserve has been designed to protect special-status birds, and no effects on golden eagle were identified in the project's EIR (Kern County 2009a).

Similar to other bird species, golden eagles could potentially be directly affected by spinning turbine blades if flying or foraging in the same areas as active wind turbines. While detailed avian protection plans are required for wind projects to avoid such effects, whether full avoidance can be achieved is unknown. The potential for direct effects on individual golden eagles to occur would largely depend on the site-specific location of proposed wind turbines and associated habitat.

As noted above, only individual wind turbine devices installed to serve electrical generation needs on site may be constructed in the study area under the proposed action alternatives, and only after review and approval by the Service. As a result, cumulative effects on golden eagle from collisions with spinning blades would not be anticipated. Given the preservation and management of suitable foraging habitat on Gorman Post Ranch (2,000 acres), the Centennial project site (8,667 acres), and Frazier Park Estates; preservation and management of modeled habitat in the study area under the alternatives (i.e., between 89% and 93% of modeled foraging habitat, between 91% to 98% of modeled breeding/foraging habitat, and between 92% and 98% of modeled primary breeding habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species (including avoidance of all active nest sites, such that no breeding pairs would be disturbed), it is anticipated that cumulative effects on golden eagles would be minor, and would not substantially affect the species rangewide.

### **Least Bell's Vireo**

There is no additional suitable breeding habitat for least Bell's vireo on other project sites considered in the cumulative effects analysis, although suitable foraging habitat, comprised of riparian/wetland communities, is found on the Centennial site. A single migrant male was observed on site in 2006; however focused breeding survey results concluded that least Bell's vireos do not nest on Centennial (BonTerra 2008). The Centennial project could result in the loss of approximately 150 acres of riparian/wetland communities and would conserve 67% (312 acres) of the riparian/wetlands communities on site.

In consideration of the preservation of riparian/wetlands communities on the Centennial site (312 acres), the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 94% and 95% of modeled breeding/foraging habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, cumulative effects on least Bell's vireo would be minor, and would not substantially affect the species rangewide.

### **Little Willow Flycatcher**

Migrant willow flycatchers (unknown subspecies) have been observed on the Centennial project site (BonTerra 2008), which provides potentially suitable resting or stopover habitat for willow flycatcher in its wetlands/riparian communities. The Centennial project would result in the loss of approximately 150 acres of riparian/wetland communities on site, and would conserve 312 acres (67%). In consideration of the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 96% and 97% of modeled foraging/stopover habitat would be preserved in open space), and the preservation of the riparian/wetlands communities on the Centennial site (312 acres), cumulative effects on little willow flycatchers would be minor, and would not substantially affect the species rangewide.

### **Purple Martin**

Purple martin was observed and may nest in oak woodlands on the Centennial project site. Approximately 122 acres (10%) of potentially suitable breeding and foraging habitat for the species (oak woodlands on site) could be affected by construction of the Centennial project (BonTerra 2008). In addition, although not observed on site, suitable nesting and foraging habitat also exists on the Frazier Park Estates site (Kern County 2009d). However, the project's 348-acre nature preserve has been designed to protect special-status birds and no effects on purple martin were identified in the project's EIR (Kern County 2009d). In consideration of the effects on known occupied breeding habitat, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 92% and 98% of modeled breeding/foraging habitat would be preserved in open space), and the preservation open space under the Frazier Park Estates project, cumulative effects on the purple martin would be minor to moderate, but would not substantially affect the species rangewide.

### **Southwestern Willow Flycatcher**

As described for the little willow flycatcher above, migrant willow flycatchers (unknown subspecies) have been observed on the Centennial project site (BonTerra 2008), where approximately 150 acres of riparian/wetland communities would be lost, and 312 acres (67%) would be conserved. They have not been observed on other project sites within the cumulative effects analysis area.

In consideration of the preservation of the riparian/wetlands communities on the Centennial site (312 acres), the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 96% and 97% of modeled breeding/foraging habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, cumulative effects on southwestern willow flycatchers would be minor and would not substantially affect the species rangewide.

### **Tricolored Blackbird**

Tricolored blackbird has been observed foraging and nesting on the Centennial project site (BonTerra 2008). To avoid direct effects on the species, and to minimize indirect effects on nesting areas, the applicant has committed to establishing a 500-foot buffer around all nesting areas at this project site. There is no suitable nesting habitat for tricolored blackbird on Gorman Post Ranch and the majority of tricolored blackbird foraging habitat would be avoided by that project (Harmsworth Associates 2006). Frazier Park Estates contains marginal nesting habitat and suitable foraging habitat for the species; however, the project's 348-acre nature preserve has been designed to protect special-status birds, and no effects on tricolored blackbird were identified in the project's EIR (Kern County 2009d). Tricolored blackbird also may forage on the Tejon Ranch Commerce Center site (Kern County 2002).

In consideration of the potential effects on breeding and foraging habitat, preservation and management of 23,977 acres of grassland foraging habitat on the Centennial project site, Gorman Post Ranch, and in the study area, the preservation of nesting habitat for tricolored blackbird on the Centennial project site, the preservation of 312 acres of riparian/wetlands communities on the Centennial project site, the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 68% and 75% of modeled primary breeding habitat and between 92% and 95% of modeled foraging habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, cumulative effects on the tricolored blackbirds would be minor to moderate, but would not substantially affect the species rangewide.

### **Western Yellow-Billed Cuckoo**

There is no suitable breeding habitat for western yellow-billed cuckoo on any of the project sites considered in the cumulative effects analysis. BonTerra (2008) concluded that effects on western yellow-billed cuckoo were not expected to occur at Centennial because breeding was not documented on site during focused surveys. Western yellow-billed cuckoo may forage in riparian/wetland communities. The Centennial project would result in the loss of approximately 150 acres of riparian/wetland communities and would conserve 312 acres (67%) of the riparian/wetlands communities on site. In consideration of the preservation of riparian/wetlands communities on the Centennial site (312 acres), the preservation and management of modeled habitat under the alternatives (i.e., between 96% and 97% of modeled breeding/foraging habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, cumulative effects on western yellow-billed cuckoo would be minor and would not substantially affect the species rangewide.

### **White-Tailed Kite**

White-tailed kite are not known to nest on any of the project sites considered in this cumulative effects analysis, however effects on potential nesting habitat could occur at Frazier Park Estates and Gorman Post Ranch (Kern County 2009d, Harmsworth 2006). In addition, white-tailed kite was either observed foraging or presumed to be foraging on all of the project sites (BonTerra 2008; Harmsworth Associates 2006; Kern County 2002, 2009d). Effects on suitable foraging habitat for white-tailed kite would be avoided on the Gorman Post Ranch project site and potential effects from the Frazier Park Estates project would be mitigated through preconstruction nesting surveys and the establishment of no-disturbance buffers.

Similar to other bird species, white-tailed kite could potentially be directly affected by spinning turbine blades if flying or foraging in the same areas as active wind turbines. While detailed avian protection plans are required for wind projects to avoid such effects, whether full avoidance can be achieved is unknown. The potential for direct effects on individual white-tailed kite to occur would largely depend on the site-specific location of proposed wind turbines and associated habitat.

As noted above, only individual wind turbine devices installed to serve electrical generation needs on site may be constructed in the study area under the proposed action alternatives, and only after review and approval by the Service. As a result, cumulative effects on white-tailed kite from collisions with spinning blades would not be anticipated. In consideration of the preservation and management of approximately 26,583 acres of grasslands and riparian/wetlands communities on the Centennial site, Gorman Post Ranch, Tejon Ranch Commerce Center, and in the study area, the 3,300 acres of open space required as part of any future Grapevine project, the 348-acre nature preserve associated with the Frazier Park Estates development, preservation and management of modeled habitat under the alternatives (i.e., between 77% and 83% of modeled foraging habitat would be preserved in open space), the conservation measures included for the alternatives to reduce potential effects on this species, and because of the low number of kites expected to occur on these sites, cumulative effects on breeding and foraging white-tailed kites would be minor and would not substantially affect the species rangewide.

### **Yellow Warbler**

A single migrant yellow warbler was detected in the oak woodlands outside of Gorman Post Ranch (Harmsworth Associated 2006). However, it was found outside the area of anticipated disturbance, and no project-specific effects on the yellow warbler are anticipated under that project. On the Centennial project site, yellow warbler was observed as a common migrant, but none remained to breed (BonTerra 2008). Moreover, the majority of suitable nesting habitat for the species on Centennial (e.g., dense riparian areas of Oso Creek) would not be affected by the proposed project. Yellow warbler was also observed on the Frazier Park Estates site, and suitable nesting habitat occurs on site; however, the project's 348-acre nature preserve has been designed to protect special-status birds, and no effects on yellow warbler were identified in the project's EIR (Kern County 2009d).

Given the preservation and management of approximately 1,076 acres (90%) of the oak woodlands and 312 acres (67%) of the riparian/wetlands communities on the Centennial project site, the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 96% and 97% of modeled breeding/foraging habitat and between 92% and 98% of modeled secondary foraging habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, cumulative effects on yellow warbler would be minor and would not substantially affect the species rangewide.

### **Valley Elderberry Longhorn Beetle**

No effects on valley elderberry longhorn beetle have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 96% and 99% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species use of the cumulative effects analysis area.

### **Ringtail**

No effects on ringtail have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 89% and 96% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species use of the cumulative effects analysis area.

### **Tehachapi Pocket Mouse**

One individual Tehachapi pocket mouse was trapped on the Centennial project site, and suitable habitat is present in the western part of the site, in proposed open space (BonTerra 2008). Suitable habitat also exists on the Frazier Park Estates project site, although the project's 348-acre nature preserve has been designed to protect special-status mammals and their habitat, and no effects on Tehachapi pocket mouse were identified in the project's EIR (Kern County 2009d). Tehachapi pocket mouse was not observed on the Tejon Ranch Commerce Center project site (Kern County 2002), and the site is outside the range of the species.

Given the preservation and management of 5,192 acres of grasslands on the Centennial project and the preservation of suitable habitat on the Frazier Park Estates project site, the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 97% and 100% of modeled habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, including the requirement for preconstruction surveys and avoidance measures, it is anticipated cumulative effects on the Tehachapi pocket mouse would be moderate, but would not substantially affect the species rangewide.

### **Coast Horned Lizard**

Coast horned lizards were observed on Gorman Post Ranch, the Centennial project site, and Frazier Park Estates (BonTerra 2008, Harmsworth Associates 2006, Kern County 2009d). Pre-construction surveys and minimization measures to avoid direct effects on coast horned lizard would be implemented under the Centennial project (BonTerra 2008), as well as under each of the alternatives. As part of the Frazier Park Estates project, the applicant would create a 348-acre open space preserve for all unaffected onsite habitat suited to horned lizards, including 190 acres of big sagebrush/rabbit brush scrub community (Kern County 2009d). In consideration of the preservation of suitable habitat at Frazier Park Estates (190 acres), Gorman Post Ranch (2,000 acres), and the Centennial project site (8,667 acres of natural lands), the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 88% and 95% of modeled primary habitat and between 82% and 88% of modeled secondary habitat would be preserved in open space), and the conservation measures included for the alternatives to reduce potential effects on this species, including a requirement for preconstruction surveys, cumulative effects on coast horned lizard would be minor, and would not substantially affect the species rangewide.

### **Two-Striped Garter Snake**

No effects on two-striped garter snake have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 62% and

70% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species use of the cumulative effects analysis area.

#### **Fort Tejon Woolly Sunflower**

No effects on Fort Tejon woolly sunflower have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of suitable habitat in the study area under the alternatives (i.e., between 89% and 96% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species occurrence in the cumulative effects analysis area.

#### **Kusche's Sandwort**

No effects on Kusche's sandwort have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 90% and 99% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species occurrence in the cumulative effects analysis area.

#### **Round-Leaved Filaree**

Thirty-seven occurrences (27.8 acres) of round-leaved filaree would be affected by the Centennial project (BonTerra 2008). No effects on round-leaved filaree have been identified for the other cumulative projects in the cumulative effects analysis area (Harmsworth 2006, Kern County 2002, 2009d). For the Centennial project, a restoration plan that includes seed salvage and translocation prior to construction would be prepared for this species. Due to the preservation and management of 5,192 acres of grasslands on the Centennial project site, and the preservation and management of modeled habitat in the study area under the alternatives (i.e., between 89% and 99% of modeled habitat preserved in open space), as well as the conservation measures required by both the Centennial project and the proposed action alternative, cumulative effects on round-leaved filaree would be minor, and would not substantially affect the species.

#### **Striped Adobe Lily**

No effects on striped adobe lily have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of suitable habitat in the study area under the alternatives (i.e., between 89% and 98% of modeled habitat preserved in open space), would minimize the potential for a substantial reduction or restriction in the species occurrence in the cumulative effects analysis area.

#### **Tehachapi Buckwheat**

No effects on Tehachapi buckwheat have been identified for the other cumulative projects considered in this analysis. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 97% and 100% of modeled habitat preserved in open space) would minimize the potential for a substantial reduction or restriction in the species occurrence in the cumulative effects analysis area.

## Tejon Poppy

No effects on Tejon poppy have been identified for the other cumulative projects considered in this section. As such, cumulative effects are not anticipated. In general, preservation and management of modeled habitat in the study area under the alternatives (i.e., between 97% and 99% of modeled habitat preserved in open space) would minimize the potential for a substantial reduction or restriction in the species occurrence in the cumulative effects analysis area.

## Summary

As noted in the discussion above, several of the other Covered Species and/or their habitats occur in the study area and the other project sites considered in this analysis. Taken together, these projects would affect relatively small numbers of the other Covered Species or their habitats and, in turn, would generally provide for habitat preservation and management of large areas of suitable habitat for these species. Given the relatively minor effects and the benefits of avoidance and mitigation, substantial cumulative effects on other Covered Species are not expected to occur. In addition, it is anticipated that all other reasonably foreseeable development would be subject to further review and evaluation in compliance with other Federal, state, and local regulations, including the ESA, BGEPA, MBTA, CESA, relevant California Fish and Game Code provisions, the Kern County General Plan, and CEQA. Thus, it is anticipated that additional mitigation would be imposed on these projects as a result of local entitlement and approval processes. Moreover, substantial protected open space supporting the other Covered Species surrounds the study area, include the Bureau of Land Management lands to the north, the Los Padres National Forest and Wind Wolves Preserve to the west and Angeles National Forest to the south. Thus, in general, the alternatives, considered in combination with other reasonably foreseeable projects, are not expected to result in cumulative effects on other Covered species.

Under the No Action Alternative, no development would occur and there would be no contribution to cumulative effects on other Covered Species from development. Similarly, Existing Ranch Uses would have minimal effects on other Covered Species, and would not contribute to a cumulative effect.

The cumulative effects on other Covered Species under the Condor Only HCP Alternative would be similar to those for the Proposed TU MSHCP Alternative; however, there would be less protection for other Covered Species than under the Proposed TU MSHCP Alternative because the Condor Only HCP Alternative would focus only on the condor. As a result, cumulative effects on some other Covered Species could be greater than the Proposed TU MSHCP Alternative and the No Action Alternative.

Cumulative effects on other Covered Species under the CCH Avoidance MSHCP Alternative would also be similar to the Proposed TU MSHCP Alternative, although somewhat reduced given the smaller area of ground disturbance associated with development. As such, cumulative effects on other Covered Species could be greater than the Proposed TU MSHCP Alternative, and would be greater than the No Action Alternative.

Because project-specific effects on Covered Species would be greater under the Kern County General Plan Buildout Alternative compared to the other action alternatives, largely associated with more ground disturbance, the cumulative contribution to effects on Covered Species would generally be greater. Similarly, the cumulative effects of the Kern County General Plan Buildout Alternative would be greater than the No Action Alternative.

### 4.1.7.3 Wildlife Movement

As described in Section 3.1.5, Wildlife Habitat Linkages and Corridors, the study area is located in the Tehachapi Uplands, which are at the confluence of four ecoregions, including Great Central Valley, Mojave Desert, Sierra Nevada, and south Coast Ranges (Hickman 1996) and, as such, provide connectivity linkages for montane and desert species as well as species associated with foothills and grasslands. Closely related to habitat linkages is the concept of movement corridors and crossings. Most of the study area currently provides a relatively unrestricted landscape for the movement of wildlife (including flyover habitat for California condors) and dispersal of plants; however, I-5, various highway fences, and other significant linear infrastructure, such as the California Aqueduct, bisect the Tehachapi Mountains for terrestrial wildlife species to the west of the study area.

As noted at the beginning of the cumulative effects section, growth in the mountain communities is anticipated to occur in the Tehachapi Uplands region, including Frazier Park Estates and Gorman Post Ranch. In combination with the open space to be conserved in the study area under the alternatives and/or as part of the Ranchwide Agreement (which could result in conservation of approximately 240,000 acres of open space under the Proposed TU MSHCP Alternative) the known projects in these areas would be anticipated to maintain wildlife corridors. Frazier Park Estates would include large blocks of contiguous open space (about 350 acres) adjacent to other conserved open space, including the Los Padres National Forest on the western edge of the Frazier Park Estates project (Kern County 2009d). Preliminary plans for the Gorman Ranch project provide 2,000 acres of open space, including wildlife corridors greater than 1 mile wide between the development footprint and the southern border of the TMV Planning Area (Harmsworth Associates 2006).

Additionally, with respect to the valley and foothill development, while the Centennial project is not located in the Tehachapi Uplands, it would include preservation of approximately 8,667 acres of natural lands strategically located between the developed portions of site and adjoining open space, where regional movement is expected to occur, including the more mountainous areas to the northwest and southeast of the project's development areas (BonTerra 2008). Similarly, Grapevine would be primarily located in the San Joaquin Valley, but would include preservation of approximately 3,300 acres of land strategically located between the developed portions of Grapevine and open space adjacent to the TMV Planning Area. This would include the base of the Tehachapi foothills connecting to the Tehachapi Mountains to the south, and along drainages, resulting in an east-west landscape linkage approximately 1 to 2 miles wide (1 mile at its narrowest point) across the northern boundary of the TMV Planning Area. The Tejon Ranch Commerce Center project would include preservation in the western portion of the site, which is not linked to wildlife connectivity areas in the Tehachapi Uplands. That project is located in the San Joaquin Valley and is not considered to be an important part of wildlife connectivity in the Tehachapi Uplands (Kern County 2002).

Implementation of the Proposed TU MSHCP Alternative, together with other projects in the Tehachapi Uplands region (Frazier Park Estates and Gorman Post Ranch) and other projects in the valley regions (Grapevine, Centennial and Tejon Ranch Commerce Center) would result in a combined total of approximately 137,093 acres of permanent open space, preserving large, contiguous blocks of habitat for wildlife movement in both the Tehachapi Uplands landscape and the valley and foothills areas outside of the study area. Moreover, substantial habitat linkages would be maintained to provide connections to the Los Padres National Forest and Wind Wolves Preserve to the west, the Angeles National Forest to the south, and the Sequoia National Forest to the northeast. In addition, the Proposed TU MSHCP Alternative would include preservation of the approximately

37,000 acre Condor Study Area, which encapsulates the core of current and historic condor activity on the ranch and the northernmost ridges in the TMV Project, which also have been determined to be historically and currently heavily used by condors. These areas, when considered in combination, would conserve important flyover habitat that connects historic and current condor habitat further to the east in Tejon Ranch and to the northeast of Tejon Ranch (ultimately including historic habitat in the southern Sierra Nevada) with condor habitat associated with the Wind Wolves Preserve and open space lands to the west of Tejon Ranch.

In addition, it is anticipated that all other reasonably foreseeable development would be subject to review evaluation in compliance with other Federal, state and local regulatory processes, including the ESA, BGEPA, MBTA, CESA, relevant California Fish and Game Code provisions, the Kern County General Plan, and any CEQA mitigation imposed on these projects as a result of local entitlement and approval processes. Thus, the Proposed TU MSHCP Alternative, in combination with other reasonably foreseeable projects, is not expected to result in a substantial cumulative effect on wildlife movement.

Under the No Action Alternative, no development would occur and there would be no contribution to cumulative effects on wildlife movement from development. Similarly, Existing Ranch Uses would have a minimal effect on wildlife movement and would not contribute substantially towards cumulative effects.

Cumulative effects on wildlife movement under the Condor Only HCP Alternative would be the same as for the Proposed TU MSHCP Alternative and would be greater than those of the No Action Alternative.

Under the CCH Avoidance MSHCP Alternative, the urban-type development in the western portion of the study area around I-5 would be similar to the Proposed TU MSHCP Alternative but would have higher densities. This development would generally be a constraint to local wildlife movement. Although the habitat linkage along the northern boundary of the study area would be unconstrained under this alternative, wildlife movement and dispersal through habitat located between Castac Lake and the northern boundary of the development area may be more constrained under the CCH Avoidance MSHCP Alternative compared to the Proposed TU MSHCP and Condor Only HCP Alternatives due to higher density development. Although not likely to be substantial, the cumulative effects of the CCH Avoidance MSHCP Alternative would be greater than the No Action Alternative.

Cumulative effects on wildlife movement likely would be greater under the Kern County General Plan Buildout Alternative compared to the other action alternatives, largely due to more ground disturbance and a more dispersed pattern of development resulting in more habitat fragmentation. Therefore, the cumulative contribution of effects on wildlife movement from the Kern County General Plan Buildout Alternative would be greater than the other action alternatives, as well as the No Action Alternative.

## 4.1.8 Comparison of Alternatives

Effects on biological resources would vary among the alternatives primarily as a result of the varying acreages of ground disturbance associated with the Development Envelope/Disturbance Area for each alternative (Table 4.1-12), the species management regime (e.g., single-species

conservation plan or multiple-species conservation plan), and/or the project-by-project focus of management efforts.

**Table 4.1-12. Proposed Development and Open Space under Each Alternative**

	No Action Alternative	Proposed TU MSHCP/Condor Only HCP Alternatives	CCH Avoidance MSHCP Alternative	Kern County General Plan Buildout Alternative
Assumed Disturbance Area (acres)	0	5,533	4,496	12,142
Assumed Development Envelope (acres)	0	8,817	4,496	14,934
Cut-and-fill (cubic yards)	0	75 million	< 90 million	222 million
Population	0	11,441	9,957	22,800
Permanently preserved open space (acres) <sup>1</sup>	106,317 <sup>2</sup>	126,034	130,339	117,774 <sup>3</sup>

<sup>1</sup> Differences in the acreage of open space presented in this table, when compared to Table 2-6 in Chapter 2, Proposed TU MSHCP and Alternatives, are due to the greater Development Envelope area considered to assess biological effects. Please refer to Table 4.1-1.

<sup>2</sup> While conservation easements will be recorded over only 106,317 acres, existing uses will continue over the remaining Covered Lands (with no commercial or residential development).

<sup>3</sup> The Kern County General Plan Buildout Alternative includes both permanently preserved open space and Restricted Open Space.

Under the No Action Alternative, while no development is assumed to occur, there would be less open space permanently conserved than under the Proposed TU MSHCP Alternative, Condor Only HCP Alternative, and CCH Avoidance MSHCP Alternative (because the permanent protections in the TMV Planning Area would not be triggered), but more than would be permanently conserved under the Kern County General Plan Buildout Alternative. Additionally, because no development would occur under this alternative, the Tejon Ranch Conservancy may not receive full funding to implement permanent protection and management of the open space areas in perpetuity. Further, under the No Action Alternative, no GPS tracking, provision of trap and release sites or other recovery tasks would be funded under the TU MSHCP. Additionally, no monitoring, reporting or adaptive management actions would occur. Nevertheless, it is assumed that the No Action Alternative would result in no new commercial or residential development and Existing Ranch Uses would continue to occur as they do under existing conditions. Therefore, there would be only minor effects on biological resources as compared to existing conditions, and the No Action Alternative would have the least adverse effect on biological resources of any of the alternatives. The No Action Alternative would not substantially degrade unique or sensitive habitats; exceed a standard or criteria provided under another Federal, state or local statute; or substantially affect a Covered Species, special-status species, and/or their habitat, including critical habitat, either within the study area or within their range.

The remaining proposed action alternatives would all include Commercial and Residential Development Activities and Existing Ranch Uses / Plan-Wide Activities that could result in potential effects on biological resources, including California condors (i.e., loss of foraging habitat, habituation to human structures and activities, risk of collisions with power lines, communication towers, and other artificial structures, and ingestion of microtrash) and vegetation communities and special-

status species, including the other Covered Species (i.e., through direct effects (e.g., permanent ground disturbance, trampling by cattle, mortality from construction-equipment) and indirect effects (e.g., water quality degradation, noise, increased human presence, introduction of nonnative species), including constraints to wildlife movement). It is anticipated that the conservation measures incorporated in the habitat conservation plans anticipated under the Proposed TU MSHCP Alternative, Condor Only HCP Alternative, and CCH Avoidance MSHCP Alternative would reduce these effects. Additionally, food sources for the California condor are expected to be available throughout the range sufficient to support a recovering population, and avoidance and minimization measures to reduce the potential for habituation, disturbance, and exposure to microtrash would be included in the conservation plan.

Potential effects on vegetation communities and all Covered Species and other special-status species would be less under the CCH Avoidance MSHCP Alternative in comparison to the Proposed TU MSHCP and Condor Only HCP Alternatives because less acreage would be developed; however, effects would be greater with respect to wildlife connectivity under this alternative given the more intense development pattern allowing for less landscape permeability, especially around Castac Lake. Effects would be slightly higher for some of other Covered Species and other special-status species under the Condor Only HCP Alternative due to the absence of specific goals and objectives and monitoring and adaptive management for those species under the Condor Only HCP Alternative.

With respect to the Kern County General Plan Buildout Alternative, although food sources for California condors are expected to be available throughout their range sufficient to support a recovering population, and effects to the California condor and other Covered Species would likely be minimized through conditions imposed by Kern County as part of the project-by-project review and approval process, the more limited extent of open space anticipated under that alternative, along with potential habitat fragmentation and degradation effects associated with development activities and rural residential uses extending across the majority of the study area, would result in greater effects on biological resources than would occur under any of the other alternatives.

Overall, none of the action alternatives would result in the substantial degradation of unique or sensitive habitats; exceed a standard or criteria provided under another Federal, state or local statute; or substantially affect a Covered Species, special-status species, and/or their habitat, including critical habitat, either within the study area or within their range.