

Master Response 1E

California Condor Loss of Foraging Habitat

Table MR1E-1. Comments Addressed in Master Response 1E

Comment	Commenter
I293-23	Clendenen, David A., Janet A. Hamber, Allen Mee, Vicky J. Meretsky, Anthony Prieto, Fred C. Sibley, Dr. Noel F.R. Snyder, William D. Toone
I293-24	Clendenen, David A., Janet A. Hamber, Allen Mee, Vicky J. Meretsky, Anthony Prieto, Fred C. Sibley, Dr. Noel F.R. Snyder, William D. Toone
I293-25	Clendenen, David A., Janet A. Hamber, Allen Mee, Vicky J. Meretsky, Anthony Prieto, Fred C. Sibley, Dr. Noel F.R. Snyder, William D. Toone
I293-29	Clendenen, David A., Janet A. Hamber, Allen Mee, Vicky J. Meretsky, Anthony Prieto, Fred C. Sibley, Dr. Noel F.R. Snyder, William D. Toone
I293-42	Clendenen, David A., Janet A. Hamber, Allen Mee, Vicky J. Meretsky, Anthony Prieto, Fred C. Sibley, Dr. Noel F.R. Snyder, William D. Toone
I948-19	Manning, Jeffrey A
I948-25	Manning, Jeffrey A
I948-27	Manning, Jeffrey A
O4-95	Center for Biological Diversity (Keats, Adam)
O4-96	Center for Biological Diversity (Keats, Adam)
O4-97	Center for Biological Diversity (Keats, Adam)
O4-98	Center for Biological Diversity (Keats, Adam)
O4-98A	Center for Biological Diversity (Keats, Adam)
O4-99	Center for Biological Diversity (Keats, Adam)
O4-100	Center for Biological Diversity (Keats, Adam)
O4-111	Center for Biological Diversity (Keats, Adam)
O4-112	Center for Biological Diversity (Keats, Adam)
O4-114	Center for Biological Diversity (Keats, Adam)
O4-117	Center for Biological Diversity (Keats, Adam)
	Defenders of Wildlife (Flick, Pamela)
	Forster, Peggy
	Hamber, Robert
	Hamber, Robert
	Hamber, Robert

1E.1 Summary of Substantive Comments

The following summarizes the substantive comments received on the Draft EIS and Draft TU MSHCP related to loss of foraging habitat for the California condor. Table MR1E-1 provides a list of the commenters and a reference to the individual comment, as summarized below. The parenthetical reference after each summary bullet indicates where a response to that comment is provided.

- The TU MSHCP and Draft EIS misstate the importance of the loss of foraging habitat for the California condor and its recovery. (Response provided in Section 1E.2.1, Significance of Foraging Habitat.)
- The estimates of the available foraging habitat and the habitat that would be lost as identified in the TU MSHCP and Draft EIS are misleading and the statements regarding the physical characteristics of foraging habitat are not scientifically valid. The analysis of available habitat should assess the habitat qualities of all potential habitat, historic use patterns, historic ranges, and individual observer experience. (Response provided in Section 1E.2.2, Evaluation of Extent of Foraging Habitat.)
- The analysis of viable foraging habitat fails to account for the effects of natural processes and management practices, such as wildfire or the cessation of hunting and grazing. In addition, the exact areas where hunting and grazing would be excluded are not addressed in the TU MSHCP and Draft EIS. (Response provided in Section 1E.2.3, Management Practices and Natural Processes.)
- The amount of suitable foraging habitat that would be lost from development, the cessation of grazing and hunting and habituation from human structures is misleadingly stated or inaccurately estimated. In addition, scientifically determined buffers used in evaluating indirect effects of development must be large enough to account for condors sensitivity to disturbance while feeding. (Response provided in Section 1E.2.4, Evaluation of Loss of Foraging Habitat.)
- Evaluation of the effects of any habitat loss must consider the needs of a fully recovered condor population and ensure that the habitat on Tejon Ranch remains viable for the California condor. (Response provided in Section 1E.2.5, Implications of Loss of Foraging Habitat for Condor Populations and Recovery.)
- The loss of Tejon Ranch as a foraging area may result in increased fragmentation of the southern and northern portions of the species' range because flight distances between foraging areas may become too great. (Response provided in Section 1E.2.6, Fragmentation.)

1E.2 Responses to Substantive Comments

1E.2.1 Significance of Foraging Habitat

Comments asserted that foraging habitat will be an important factor for recovery of the condor. Another commenter suggested that the TU MSHCP misstates the importance of foraging habitat in the California Condor Recovery Plan.

Comments suggested that habitat loss is identified in the California Condor Recovery Plan (U.S. Fish and Wildlife Service 1996) as an important aspect in the recovery of the California condor. Although habitat loss is not specifically identified as a threat in the recovery plan (1996), the Service does consider habitat loss to be of concern and its absence from the Recovery Plan should not be

interpreted otherwise. While historically habitat loss was not considered as one of the primary reasons for the decline of the condor, this does not mean that loss of foraging habitat is not an important factor affecting its recovery. Condors are currently reoccupying portions of their historic range including Tejon Ranch. As the condor population continues to expand, if foraging habitat throughout the condor's range is converted to land uses not conducive to livestock grazing, hunting, or conservation of native ungulate populations (the primary food sources for the California condor), the loss of foraging habitat may become one of the primary management issues affecting the recovery of the species. As such, the Service considers the potential loss of foraging habitat one of the ongoing threats to the species.

1E.2.2 Evaluation of Extent of Foraging Habitat

Comments suggested that the methods used to estimate the amount of foraging habitat on Tejon Ranch are not scientifically valid and rule out large areas of Tejon Ranch as suitable habitat. Comments also suggested that there have been observations of condors foraging outside of habitats modeled in the Draft TU MSHCP as suitable habitat.

The Service has revised the model of foraging habitat for the California condor in this Supplemental Draft EIS. The following summarizes the methods used in the revised model. Based on the TMV Planning Area/Oso Canyon Development Envelope, it is estimated that approximately 6,656 acres of suitable foraging habitat would be lost and 11,339 acres would be indirectly affected under the TU MSHCP, for a total of 17,995 acres. The Service assumes the actual amount of suitable foraging habitat lost and indirectly affected under the TU MSHCP would be less because the actual disturbance footprint in the TMV Planning Area would be limited to 5,533 acres.

Although historically the characterization of condor foraging habitat has been based on observations of condors foraging and feeding, the Service has also used habitat modeling to characterize the extent of condor foraging habitat on Tejon Ranch. As identified in the comments, observational data exhibit a bias toward areas more easily accessed by humans. More recently, the use of global positioning system (GPS) technology has allowed field biologists to more easily locate stationary condors to document more of the nonproffered carcasses condors are feeding on, providing a better understanding of where condors are finding food and successfully feeding. The GPS data on nonproffered feeding events indicates condors found and fed on carcasses in various areas of the ranch, primarily in relatively open vegetation. The Service has also used observational and GPS data to model the extent of suitable habitat types. In an attempt to more accurately characterize suitable foraging habitat for the California condor, and subsequently to quantify the amount of suitable foraging that would be directly lost and indirectly affected by the TU MSHCP and alternatives, the Service used the Tejon Ranch vegetation composite geographic information system (GIS) layer (Dudek 2009) included in the Draft TU MSHCP to identify vegetation communities condors have been documented feeding in (U.S. Fish and Wildlife Service unpublished data). These include the grassland and oak savannah vegetation communities that have traditionally been associated with condors feeding and foraging (U.S. Fish and Wildlife Service 1976, 1996, Wilbur 1978, Koford 1953) and that the Service has recently documented condors feeding in (U.S. Fish and Wildlife Service unpublished field notes, Brandt pers. comm.). Other vegetation communities, such as chaparral, are also known to support condors foraging and feeding when they contain potreros (areas of open grassland). Large areas of chaparral occur on portions of Tejon Ranch, but do not include large, open potreros like those in Los Padres National Forest lands that have supported condor foraging (U.S. Fish and Wildlife Service 1996). Additional vegetation communities on Tejon Ranch (i.e., scrub) may also provide some potential foraging and feeding opportunities, while others may not, due primarily to the dense structure of the vegetation, which can negatively affect the species' ability to access food. Thick, dense, vegetation with very little, or no open area between the vegetation would make it difficult for condors to move very easily, due to their large body size and wingspan (up to 9 feet).

Their large, fragile wings could easily be damaged if entangled in branches. Difficulty in moving quickly through branches and undergrowth would also make the condor more vulnerable to predators, especially if they were to become entangled in branches. This is not to say that condors never feed anywhere but wide open areas, but the Service believes condors are not likely to frequent areas which are difficult to access and locate food sources.

As the comments state, the Service is also aware that condors are able to locate carrion and feed under the canopy of trees (J. Grantham pers. comm. 2010). Both oak woodlands and oak savannahs include canopy cover, under which condors would be able to locate carrion, particularly if they are alerted to carcasses hidden from view by ravens or other scavengers. The difference between oak woodland and oak savannah in the Tejon Ranch Vegetation Composite GIS layer is based on the amount of canopy cover (i.e., less than 40% canopy cover is considered oak savannah and 40% and greater canopy is considered oak woodland)(Dudek 2009).

Although the Service knows that condors can access and successfully feed under some amount of vegetation canopy, the Service is not aware of any information in the published literature, or elsewhere, that suggests a specific amount of canopy cover that would restrict condors from foraging and feeding. Therefore, vegetation communities on Tejon Ranch with greater than or equal to 40% canopy cover (i.e., woodlands), as well as other vegetation types that traditionally have not been considered foraging habitat for condors (i.e., scrub, chaparral [excluding *poteros* in chaparral], conifer forest) were identified.¹ These GIS layers were overlaid with aerial imagery of Tejon Ranch to compare the relative density of the vegetative canopy to open ground. A field site visit was then conducted to assess the density, thickness, and extent of the vegetative understory in these vegetation communities, and to assess the potential for condors to access food and/or facilitate escape from potential predators.

The Service recognizes that the structure of the vegetated understory associated with oak woodland vegetation communities is not likely to be entirely uniform across the Covered Lands due to the natural variation associated with localized growing conditions. Due to the large expanse of oak woodlands on Tejon Ranch, as identified in the GIS mapping (Dudek 2009), the Service assumes there may be some areas in these oak woodland vegetation communities where the understory vegetation structure might nevertheless allow condors to access a carcass. However, based on the vegetation mapping and aerial imagery used by the Service, and ground-truthing and vegetative understory assessment, the Service concluded that the areas identified in the GIS mapping as oak woodlands were generally not open enough under the tree canopy to allow condors to access food. Although the possibility of condors finding food in the more densely vegetated, wooded portions of the ranch cannot be ruled out, the Service believes such activity is likely to happen infrequently, if at all. Instead, condors are more likely to locate and access food in areas that are more accessible to them (i.e., grassland and oak savannah). The Service believes the potential for patches of suitable foraging habitat to occur in woodland vegetation types across the ranch is probably low, and does not think it is appropriate to consider these vegetation communities (e.g., oak woodland, conifer, scrub, chaparral) as suitable foraging habitat for California condors because the additional acreage they represent greatly overestimates the amount of habitat, both in the TMV Planning Area, as well as the proposed TU Mitigation Lands and other conservation lands on the ranch, where condors are likely to be able to consistently find and access food.

The Service is also aware that condors can access food sources on the lower elevations of the ranch where the topography is less severe than in the Covered Lands. For example, the Service documented condors feeding on a non-proffered cow carcass near the Old Headquarters area of the ranch on the San Joaquin Valley Floor (U.S. Fish and Wildlife Service no date), indicating additional

¹ A list of the vegetation communities in the Tejon Ranch Vegetation Composite geographic GIS layer is provided in Section 4.1, Biological Resources, in Volume I of this Supplemental Draft EIS.

foraging habitat is available to condors outside of the Covered Lands. Opportunistic foraging and feeding will occur wherever condors locate and are able to safely access food. Some areas of the ranch may more consistently provide opportunities for condors to locate food if hunting and grazing regularly occur there.

The foraging habitat model provides a mechanism to assess the location and extent of suitable foraging habitat on Tejon Ranch, instead of treating all conserved areas as equally valuable to the condor. For example, 13,000 acres of suitable foraging habitat, comprised of oak savannah and grasslands, would provide consistent feeding opportunities for condors due to the presence of carrion, appropriate vegetation structure to enable condors to access that carrion to feed, and, therefore, more opportunity for successful feeding attempts. As a result, these areas would have more value to condors as foraging habitat than a larger amount of woodland habitat that provides limited opportunities for successful feeding, given the majority of the vegetation structure would make it too difficult and dangerous for condors to find and access food in such habitat. When comparing the amount of foraging habitat lost as a result of the proposed development versus the amount conserved under the proposed TU MSHCP and existing Ranchwide Agreement, the Service believes it is appropriate to consider the suitability of foraging habitat as areas where condors are likely to consistently find and access food.

Based on this analysis, the Service has determined that grasslands and oak savannahs are the vegetation communities on Tejon Ranch where condors are the most able to consistently find and access food, and therefore constitute the vast majority of the suitable foraging habitat in the Covered Lands. This conclusion is based on, and reflected in, the Service's revised habitat suitability model for the condor, which is provided as Appendix D, Habitat Suitability Criteria Methods, of this EIS. The Service also included some additional vegetation communities (e.g., riparian woodland) in the habitat model where the vegetative understory is sparse enough to allow condors to access to the area under the tree canopy. In the absence of supporting literature, the Service has determined not to use the other parameters included in the initial version of the condor foraging habitat model (i.e., percent slope or distance from the centerline of a ridge) as restrictive to condor foraging or feeding.

1E.2.3 Management Practices and Natural Processes

Comments suggested that changes in management practices, such as hunting, grazing, and wildfire management may reduce the value of existing foraging habitat. Other comments point to the positive effects of hunting and grazing on condor populations. Comments also suggested that the Draft EIS and Draft TU MSHCP do not specify where hunting will occur, that the restrictions on hunting may affect the available foraging lands and that restrictions on the disposal of gut piles may be an attempt to manipulate condor foraging patterns.

While the Service agrees with comments suggesting that natural processes, such as wildfires, may increase the value of condor foraging habitat, fire and other natural processes were not factored into the revised model of condor foraging habitat. The Service anticipates wildfire, particularly where it would threaten human life and property, would be controlled to the extent possible. Any potential foraging habitat created or enhanced as a result of fire would be a benefit for condors if located more than 0.5 mile from development (see discussion of indirect effects associated with development proposed under the TU MSHCP in Section 1E.2.4, Evaluation of Loss of Foraging Habitat, below). However, as fire is currently controlled and managed to the extent feasible, and would continue to be in the future, it is not practical to try to factor such processes into a model of foraging habitat or the effects analysis when considering loss and conservation of foraging habitat.

Traditional ranching practices, such as grazing and hunting, would continue under the TU MSHCP. These activities are known to be beneficial to the California condor (U.S. Fish and Wildlife Service 1974, 1996, Wilbur 1978) because they provide a necessary source of carrion for condors to feed on.

The continuation of these practices on Tejon Ranch is especially important for condors because the ranch historically has been a focal point for condors, particularly in the fall (probably due to the consistent availability of food). As recent condor GPS and field observations indicate, Tejon Ranch is once again a key component in the home ranges of nearly all of the free flying condors currently occupying southern California (Johnson et al. 2010) (Appendix I).

Although hunting is not a Covered Activity under the TU MSHCP, it is anticipated that hunting would continue both in the large block open space areas of the TMV Planning Area as well as in the open space areas of the rest of the Covered Lands (and outside the Covered Lands) on Tejon Ranch. The current hunting program on Tejon Ranch operates under a plan that is reviewed and approved by the California Department of Fish and Game (CDFG). Under the Private Land Management Plan, hunters are issued licenses and hunting area maps, and are subject to restrictions designed to protect wildlife. These restrictions would be revised to include a requirement that gut piles be removed from the TMV Planning Area when less than 0.5 mile from the Development Envelope, which would reduce the potential for habituation of condors by limiting foraging opportunities near human structures. West of Gegasus Ridge, most of the TMV Planning Area is restricted to guided hunting only, and the disposal of carcasses and/or gut piles is not allowed in that area. The Tejon Ranch hunting maps also indicate that gut piles and carcasses must not be disposed of on or near Gegasus Ridge. Managed hunting would continue in the open space areas of TMV Planning Area, which may include recreational hunting under the supervision of an authorized hunting guide. However, as discussed below, the Service is only considering the blocks of suitable foraging habitat in the TU MSHCP open space areas as likely to provide feeding opportunities for condors if they are 0.5 mile or more from the proposed TMV Specific Plan and Oso Canyon Development Envelopes (Table 2-1, in Chapter 2, Proposed TU MSHCP and Alternatives, Volume 1 of this Supplemental Draft EIS).

The Service anticipates that hunting would continue to serve as a primary food source for condors outside the TMV Planning Area, given the amount of suitable foraging habitat present in the TU MSHCP Mitigation Lands and other conserved ranch lands. Tejon Ranch operates a successful commercial hunting program on the ranch. The Service fully expects that program will continue in the 90% of the ranch that would be permanently conserved under the TU MSHCP and/or Ranchwide Agreement. However, restrictions on carcass and /or gut-pile disposal in the TMV Planning Area, combined with the direct loss of suitable foraging habitat and indirect effects associated with development, suggest that any foraging opportunities in the TMV Planning Area would be limited to cattle mortality or hunter-killed carcasses that are improperly abandoned by hunters, notwithstanding the prohibition on carcass and/or gut-pile disposal in this area. The Service has revised this Supplemental Draft EIS, and the applicant has revised the Draft TU MSHCP, with additional details regarding the hunting program in relation to the development proposed under the TU MSHCP, as well as the cumulative effects of additional projects proposed in critical habitat.

The Service does not anticipate that the overall value of foraging habitat outside the TMV Planning Area would be affected by continued public access to lands conserved under the TU MSHCP. Even accounting for additional public access on the conservation lands, in the form of passive recreation activities (e.g., hiking, wildlife viewing, photography, etc.) that would be allowed under the TU MSHCP, the Service assumes that the large size of the TU MSHCP Mitigation Lands (116,523 acres), including 66,117 acres of suitable foraging habitat that would be conserved in this area, in addition to up to 240,000 acres of conservation lands under the Ranchwide Agreement, including an additional 83,818 acres of foraging habitat conserved outside of the Covered Lands under the Ranchwide Agreement, would accommodate both condors and visitors without negative interactions. The protective measures included in the Draft TU MSHCP and proposed conservation easements covering the TU MSHCP Mitigation Lands are designed to minimize negative interactions between condors and humans. The extent and types of public access into the conservation lands would be limited and controlled, and public use would generally be restricted to specific trails and

existing roads to minimize disturbance to feeding or roosting condors. Most importantly, the TU MSHCP requires development of a public access plan to govern public access to the TU MSHCP Mitigation Lands and requires that the plan and future revisions or amendments thereto, be approved by the Service to ensure any public use of the TU MSHCP Mitigation Lands is compatible with conservation of the condor. The requirement to obtain Service review and approval of future public access plans is permanent, notwithstanding the 50-year term of the incidental take permit (ITP).

Other uses of the TU MSHCP Mitigation Lands would also be strictly regulated to protect condors using the Covered Lands. For example, residential and commercial development would not occur in TU MSHCP Mitigation Lands, although Plan-Wide Activities, including ongoing ranch uses, would continue. However, explosions (louder than gunshots) or other abnormally loud noises associated with film production or other activities would be prohibited in the Condor Study Area. Outside of the Condor Study Area, but within the TU MSHCP Mitigation Lands, explosions (louder than gunshots), or other abnormally loud noises would be prohibited unless the Service-approved TRC Staff Biologist determines, in consultation with the Service, that no condors are present or would be otherwise adversely affected by such explosions and/or noise. Roosting condors are readily disturbed by noise or movement and, if it occurs late in the day, may disturb condors away from the roost site that night (Koford 1953). The avoidance of disturbance to condors occupying traditional roost sites is particularly important. Wilbur (1978) noted that some traditional roosts had been used continuously for 35 years. Thirty-three years later, condors are using these same sites on Tejon Ranch. Based on the historic and contemporary use of the Winters Ridge and Bear Canyon roost sites, the Service assume these specific locations must offer something special to condors that is not available elsewhere on the ranch. If condors are easily disturbed from roost sites as Koford (1953) indicates, and the condors are once again using the same sites they did prior to their previous extirpation from the wild (U.S. Fish and Wildlife Service 1996, Snyder and Snyder 2000), it is logical to assume these roost sites are located in an area where condors are free from disturbance and safe from predators. The reoccupation of the site by condors despite current levels of use of a ranch road in the vicinity of the Winters Ridge roost suggests this level of activity is compatible with use of the site by condors. Thus, this level of traffic should be permissible, while increased use of this road beyond the current ranchwide use is subject to strict regulation under the proposed TU MSHCP to avoid disturbance to condors.

Under the TU MSHCP, a Service-approved biologist would monitor condor activities prior to and during the Covered Activities, in order to ensure avoidance and minimization of any disturbance. The public access plan that would be reviewed and approved by the Service would also ensure that any increased public activity is implemented in a way that disturbance to condors is avoided and minimized. The Service anticipates that the level of potential effect on condors from passive recreation would be low under the TU MSHCP, and similar to or (pursuant to the Ranchwide Agreement provisions regarding public access restrictions and requirements) more restrictive than what has occurred in other areas in the historic range. For example, people recreating in the TU MSHCP Mitigation Lands could intersect with a feeding group of condors which may, or may not, result in condors abandoning the carcass depending on the distance and activities involved. Given the large size of the TU MSHCP Mitigation Lands and other lands conserved under the Ranchwide Agreement, the random occurrence of carrion that condors use for food, the low impact, passive recreation activities proposed and regulation of those activities, as well as restrictions on the location and types of organized events, the Service anticipates that the TU Mitigation Lands and conservation lands on the ranch would continue to provide foraging, feeding, and roosting opportunities for condors.

1E.2.4 Evaluation of Loss of Foraging Habitat

Comments suggested that the loss of foraging habitat is underestimated in the Draft EIS and Draft TU MSHCP, in part because the estimate of what areas constitute suitable habitat are too narrow. Another comment questioned the small area of lost foraging habitat, given the size of the project and the lack of estimates of indirect effects within a buffer. Several commenters objected to the use of supplemental feeding to offset the loss of foraging habitat in the TMV Planning Area. Comments also expressed concerns that large areas of currently used foraging habitat would be permanently lost to development and cannot be substituted for by conserving other lands or moving food sources.

Based on the Service's revised model of foraging habitat, and assuming disturbance of the entire TMV Specific Plan and Oso Canyon Development Envelopes (8,366 acres within the TMV Planning Area), approximately 6,656 acres of suitable foraging habitat would be directly lost and 11,339 acres of suitable foraging habitat would be indirectly affected, for a total of 17,995 acres of suitable foraging habitat potentially affected under the TU MSHCP. However, the actual amount of suitable foraging habitat directly and indirectly affected would be less because the Disturbance Area in these Development Envelopes would be limited to 5,533 acres. Because the exact location of actual development footprints within the Development Envelope is unknown at this time, the Service analyzed the direct and indirect effects associated with the larger Development Envelope in this Supplemental Draft EIS. Please refer to Master Response 1B, California Condor Critical Habitat, for additional detailed discussion of the modeling approach used to assess direct and indirect effects on condor foraging habitat.

As noted above, the Service agrees that, in addition to the direct loss of foraging habitat in the TMV Specific Plan Area/Oso Canyon Development Envelope, there would be additional indirect effects on California condors that would contribute to the overall amount of foraging habitat that would be lost or adversely affected in the TMV Planning Area portion of the Covered Lands. The Service considered the effects of disturbance on condors that may be actively feeding on, or perched near, a carcass in proximity to development, or on condors that may locate a food source, but not land and feed due to the location of the carcass in relation to the development and associated disturbance. To calculate and estimate this area of indirect effects, the Service assumed that a distance of approximately 0.5 mile extending from the edge of the TMV Specific Plan Area/Oso Canyon Development Envelope would encompass potential disturbance to feeding condors. Although the Service is aware that a 0.5-mile distance between feeding condors and human activity has not been used as a measure to minimize human influence on feeding condors in the past, this distance is an appropriate conservative approximation of the distance necessary to reduce or eliminate the disturbance to foraging and feeding condors, given the exact reactions condors may have to different noise or activities cannot be predicted. Koford (1953) noted that condors normally feed in relatively isolated areas and usually leave if approached within about 1,000 feet (approximately 0.18 mile); he also recorded condors feeding within 500 yards of an active ranch house. Wilbur (1978) documents condors feeding within 1,000 feet of well-traveled roads.

Although the Service cannot rule out the possibility of a carcass occurring in suitable foraging habitat in open space associated with the TMV Planning Area, it is reasonable to assume that, based on the general configuration of about half of the TMV Planning Area Open Space into relatively small conserved open space areas that are interspersed with, and adjacent to, development, and the unknown fate of any carcasses in these areas (i.e., carcasses may be removed if too close to residential or commercial areas, or may be too close to human disturbance to enable condors to feed on them), most of the suitable foraging habitat in the TMV Planning Area Open Space would not consistently provide feeding opportunities for condors. However, the Service assumes that the larger blocks of suitable foraging habitat in the TMV Planning Area Open Space would still function as foraging habitat (e.g., the eastern end of Gegasus Ridge and the area north of Grapevine Peak) when more than 0.5 mile away from development. Based on this assessment, the Service calculates

that approximately 2,637 acres of suitable foraging habitat would be functional in the TMV Planning Area Open Space.

For clarification, the density of the proposed TMV Project would be highest in the lower elevations of the TMV Planning Area, particularly around Castac Lake where commercial and resort residential development is proposed. The density of development would decrease in the higher elevations. The Service anticipates that this development scenario would result in relatively low condor use of most of the TMV Planning Area as a result of direct habitat loss to development and indirect effects within 0.5 mile of the proposed Development Envelope. Additionally, the Service notes that the traditional condor roost site in the Winters Ridge area of the Condor Study Area would be more than 5 miles from the nearest proposed development, and would be naturally buffered from the proposed development by topography. Restrictions on public access to the Condor Study Area and the specific activities that would be allowed there are identified in the public access plan included in the Interim Ranch-Wide Management Plan (Tejon Ranch Company 2009). The Implementing Agreement provides for submittal of subsequent public access plans (to be reviewed and approved by the Service to ensure that such use is compatible with maintaining the area's conservation value to the California condor and compliant with the ESA. The Service believes that the proposed TU MSHCP, including development proposed under the TU MSHCP, would not be a limiting factor in the ability of condors to use the portions of the ranch that would remain undeveloped.

Several commenters objected to the use of supplemental feeding to offset the loss of foraging habitat in the TMV Planning Area. Supplemental feeding may occur on the Covered Lands as deemed necessary by the Service for specific management needs, and is not proposed as mitigation to offset the loss of foraging habitat under the TU MSHCP. Please refer to Master Response 1H, California Condor Supplemental Feeding, for a more detailed discussion of the supplemental feeding program.

1E.2.5 Implications of Loss of Foraging Habitat for Condor Populations and Recovery

Several comments questioned the overall conclusions regarding the effect of the loss of foraging habitat on the condor. One comment suggested it is unclear how the significance of habitat loss was determined. Other comments suggested that the effect of the loss of habitat on the condor must be evaluated against the needs of a fully recovered population, especially in light of habitat losses elsewhere.

The effect of the loss of foraging habitat from development proposed under the TU MSHCP was determined by comparing the amount of suitable foraging habitat lost in the areas proposed for development in the TU MSHCP to the amount conserved on TU MSHCP Mitigation Lands and on conserved lands under the Ranchwide Agreement, and then evaluating the overall ability of the TU MSHCP Mitigation Lands to function as foraging habitat for a recovering population of condors. The Service considered the amount and type of habitats that would be conserved to determine if the TU MSHCP Mitigation Lands would provide a sufficient amount of foraging habitat and potential food sources (i.e. cattle, feral pigs, and native ungulates) to enable a recovering population of condors to continue to use the ranch as foraging habitat. The conservation of traditional roost sites historically and currently used by condors also factored into the Service's determination of the significance of the amount and type of habitat loss that would occur under the TU MSHCP.

While 17,995 acres of suitable foraging habitat in the TMV Planning Area would be directly and indirectly affected by Commercial and Residential Development Activities, it is anticipated that the remaining Covered Lands (i.e., TU MSHCP Mitigation Lands and Existing Conservation Easement Areas) and other conserved ranch lands would continue to provide conservation value to condors in the form of foraging and roosting habitat. In addition, grazing is anticipated to continue at the current level of 14,500 head of cattle on the Covered Lands, as well as on other ranch conserved

lands, and hunting would also continue on large areas of suitable foraging habitat in the Condor Study Area, other TU MSHCP Mitigation Lands, and other conserved lands on the ranch. Along with wild carrion, these activities would continue to provide important food resources for condors using the ranch in the proposed TU MSHCP Mitigation Lands, including the Condor Study Area, in open space areas in the TMV Planning Area situated more than 0.5- mile from the proposed development footprint, and in other ranch lands conserved pursuant to the Ranchwide Agreement. As described above, hunting and grazing would continue on these lands and provide important food sources, and the condor's traditional roost sites on the ranch, which are located more than 5 miles from the proposed TMV Project, would be preserved in perpetuity. These essential condor habitats would remain intact and functional if the TU MSHCP is implemented.

As discussed in Master Response 1B, California Condor Critical Habitat, the Service believes that even with the development proposed in the TU MSHCP, there would be sufficient foraging habitat remaining on Tejon Ranch, including sufficient food from wild and domestic carrion on the ranch, to support condors that currently feed on the ranch, as well as increased numbers of condors expected to forage there as the population expands. Approximately 79% of suitable foraging habitat in the Covered Lands, and 82% of suitable foraging habitat ranchwide, would remain available for condors with implementation of the TU MSHCP and the Ranchwide Agreement.

Some commenters expressed concern that habitat modeling should consider a fully recovered population "free of the current limitations to the species, like food subsidies and captive breeding." The suitable foraging habitat model for the condor is intended to characterize and quantify suitable foraging habitat for condors on Tejon Ranch. Mortality rates in the wild are averaging 20% to 25% and exceed the rate of natural reproduction in the wild. To address a "fully recovered population" of condors, as suggested, ongoing threats to the population, particularly lead poisoning, must first be addressed. The California Condor Recovery Plan (U.S. Fish and Wildlife Service 1996) does not attempt to define full recovery for the California condor, and the Service does not attempt to do so here. The captive breeding program is still necessary, and will likely continue to be necessary in the reasonably foreseeable future (50 to 100 years). The Service does not anticipate reaching the down-listing criteria until the threat of lead poisoning is adequately addressed. Further information about recovered population considerations is included in Master Response 1B, California Condor Critical Habitat.

Current threats to the condor notwithstanding, the Service estimates a sufficient food base currently occurs within the range of the condors in California including the southern California subpopulation, to support one of the two separate, reproductively self-sufficient populations of wild, free-flying condors which the recovery plan identified as one of the criteria related to down listing the species to a federally threatened status. This estimate is based on the reported cattle and sheep numbers reported from San Luis Obispo County to the southern Sierra Nevada portion of the range, the average mortality rate for cattle and sheep, and the approximate amount of carrion a population of 150 condors would need to support them for a year (Wilbur 1978) (Master Response 1B, California Condor Critical Habitat, for a more in depth discussion of this issue). Potential food resources available in central California, north of Monterey and San Benito Counties, would be in addition to the amount of potential food sources used in the Service's food availability analysis. The conserved lands on Tejon Ranch, as managed under the proposed TU MSHCP and Ranchwide Agreement, would contribute to the foraging habitat and carrion required to support a population of 150 condors in southern California and in the broader California region.

The Service is also aware of land conversions in other areas of condor habitat statewide. The cumulative effects associated with these land conversions are considered in the individual resources sections in Chapter 4, Environmental Consequences, of this Supplemental Draft EIS.

1E.2.6 Fragmentation

Comments suggested that the TU MSHCP would affect the condors' ability to use their entire historic range and additional critical habitat units by fragmenting their habitat.

The Service does not agree that development proposed under the TU MSHCP would preclude condors from reaching the remaining portion of the Tejon critical habitat unit, or other critical habitat units, and other suitable foraging habitat in the northern portions of the Tehachapi and Southern Sierra portions of their historic range. Condors regularly fly over other developed areas in Southern and Central California, as well as in Arizona. Based on GPS data, condors are currently flying over developments, including the communities of Frazier Park, Lebec, Pine Mountain Club, Stallion Springs, Big Sur, King City. Condors are also regularly traveling between Hopper Mountain National Wildlife Refuge and the Sespe Condor Sanctuary, south and west of Tejon Ranch, as well as through the Tehachapi Mountains into the northeast portion of their historic range. Condors can fly long distances in a single day, including over developments similar in size to the proposed TMV Project. Based on these patterns, the Service does not anticipate that the development proposed under the TU MSHCP would restrict condor movements or affect their use of their historic range as a result of habitat fragmentation. Please refer to Master Response 1G, California Condor Overflight Habitat Connectivity, for a more detailed discussion of this topic.