Comments on Tehachapi Multi-species Habitat Conservation Plan and Draft Environmental Impact Statement

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General Summary of Comments

As former, and in one case ongoing, direct participants in the California Condor conservation program, we have special concerns about the impacts of the Tehachapi Upland Multi-species Habitat Conservation Plan on condors, and in the following remarks we limit ourselves to condor issues. Our overall conclusion is that the proposed actions appreciably reduce the likelihood of recovery of the California Condor and adversely modify critical habitat and are thus enjoined under the language of the Endangered Species Act.

The major ultimate goal of recovery efforts for the endangered California Condor, as identified in the Recovery Plan, is achievement of multiple large and self-sustaining wild populations of the species. Truly wild and self-sustaining populations are not ones that are maintained by constant releases of captives to the wild or by intensive life-support management efforts. Also intrinsic to full recovery of the species is achievement of populations occupying habitats that have been determined to be critical for the species, and populations that are behaving in a manner typical of the species, including normal reproductive and foraging behavior. To the extent possible, management should ensure that condors can fend for themselves. Management intervention involving matters such as provisioning of food should occur only when self-sustaining scenarios are impossible. This strategy maximizes the resilience of the condor populations and minimizes the financial costs and risks of management.

Unfortunately, the Tejon MSHCP proposes actions that will greatly reduce natural food supplies in a very important portion of condor Critical Habitat, and will strongly inhibit condor use of the same area through multiple effects of urbanization. The proposal to mitigate these effects mainly by establishing feeding stations in areas outside Tejon Mountain Village (TMV) is not consistent with ultimate recovery goals of the conservation effort. Experience with the release program so far gives evidence that feeding stations adversely affect condor foraging behavior and movements and result in detrimental tendencies toward microtrash ingestion and human habituation (see Mee et al. 2007, Snyder 2007, Mee and Snyder 2007). Feeding programs further presuppose a perpetual and expensive, but ultimately unnecessary, obligation to provide a food supply for the birds – an obligation that can be expected to be difficult to maintain continuously in the long term in the face of inherent instability in human institutions. Clearly a population dependent on a long-term feeding program is not a truly self-sustaining population and cannot be considered a fully-recovered population.

In studying the MSHCP and accompanying DEIS we find that both documents consistently favor nonconservative interpretations of data.When endangered species Critical Habitat is affected by a development proposal, the U.S. Fish and Wildlife Service is obliged to ensure that if mistakes are made in judgments, they will favor the species by minimizing risks of adverse impacts. These documents fail to meet that precautionary standard in a number of crucial respects. A more realistic assessment of impacts suggests

that the development plans proposed will cause harm to condors by significantly reducing the amount of high-quality foraging habitat and by introducing a suite of negative factors to an important portion of condor habitat hitherto free of such impacts. Development may also alter movement patterns of the species, increasing flight times and energetic costs of moving among various important use areas in the species' range. As a result we strongly recommend rejection of these documents.

A. Importance of Condor Critical Habitat on Tejon, and more specifically, the Importance of the Tejon Mountain Village (TMV) region to Condors.

Critical Habitat was established for condors on Tejon Ranch in 1976 to ensure long-term viability of foraging and roosting sites that were known to have been heavily used by condors from many years of historical records. This designation reflects some unique qualities of the ranch that cannot be fully matched by other portions of the species' range. The components most critical to condor use of Tejon Critical Habitat are:

1. An abundant food supply of carrion created by traditional livestock grazing operations, by high populations of native ungulates such as deer, and by recreational hunting activities for ungulates such as deer and feral pigs.
2. Strong and reliable winds coming up out of the San Joaquin Valley that interact with the specific topography of the region to support highly efficient foraging movements of the birds.
3. Strong populations of other scavengers such as Common Ravens and Golden Eagles that the condors make use of in locating food efficiently.
4. A unique geographic position of the ranch rendering it a central crossroads for condor movements between other important use areas within historic condor range as a whole, for example between the Sespe Sanctuary and the southern Sierra Nevada, and between the Coast Range and the Sierra Nevada.
5. A long history of isolation and freedom from various detrimental human influences associated with urbanization.
6. Availability of suitable overnight roosting locations.

The importance of the lands involved has been repeatedly affirmed over the years by US Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) public statements (see our Appendix 1). Data accumulated more recently, much of it through radio telemetry and most recently by GPS satellite telemetry, have clearly confirmed the heavy use of this region by condors and indicate that the lands included in Tejon Critical Habitat were indeed appropriately identified in the official designation (see our Appendix 2), including the areas proposed for TMV within Critical Habitat.

Although the MSHCP and DEIS do not deny the importance of condor Critical Habitat on Tejon, they misrepresent the importance of TMV lands in particular to condors and provide no plausible arguments or evidence for their conclusion that conversion of TMV lands to residential development, together with mitigation

actions, will lead to net benefits for condors, justifying approval of the MSHCP. We suggest instead that from our experience on TMV lands and other Tejon lands, and from examination of other available records on use of these lands by condors, TMV lands are indeed some of the most important areas for condors within Critical Habitat and that conversion of these lands to residential use will have major negative effects on the viability and value of Critical Habitat, with or without the proposed mitigation measures.

A number of data sets have been assembled showing condor usage of Tejon Ranch, both by proponents of the development proposals and by others. In Appendix 2 we present a summary recently prepared by C.B. Cogan of important data sets. These range from the McBee Card assembly of visual reports (1890-1984) to telemetry records from the 1980s, and most recently to GPS condor locations of the USFWS in the release program initiated in the 1990s. Accurate data gained by various means on condor locations throughout the species' range between 1982 and 1987 were earlier analyzed and summarized by Meretsky and Snyder (1992), and serve as a comparison for analyses of data limited to Tejon.

All the data sets in our Appendix 2 have some bias, although bias varies from set to set. Nevertheless, all data sets show considerable similarity to one another in the general patterns of use of various regions by condors and show substantial use of the TMV planning area. Evidently, condor use of Critical Habitat areas on Tejon has been exceedingly stable over a very long period of time.

The earlier data sets (both visual and ground-based telemetric), which are dependent on line-of-sight detections and near line-of-sight detections of birds (in the case of telemetry) are biased both by variable blockage by topographic features and by nonuniform coverage of the ranch by observers, especially in the sense that ranch roads are found only in portions of the ranch and condor observers have traditionally favored these areas (e.g., Winter's Ridge) in seeking condors. The observer bias effect is largely neutralized in the satellite-based GPS position data of the most recent years, although this data set cannot be said to be fully free of potential bias, since it covered only a portion of the released population and for relatively few years. Nevertheless, because it does involve a fair number of birds and greatly reduces error resulting from observer position bias, this is one of the more useful data sets in informing us of the location of at least some of the important portions of Critical Habitat on Tejon.

The full GPS point-data set available from USFWS (see Cogan Fig 6, our Appendix 2) indicates that the TMV planning region has been one of the most heavily used portions of condor Critical Habitat in recent years. Yet for reasons that are not clearly presented in the MSHCP (section 4.4.3.1.1), the TMV Planning Area has been excluded, as habitat unimportant for condors, from the CSA (the Condor Study Area to be left free of development). As condor records within the TMV are numerous and as we have personally seen condors engaged in activities such as feeding within the TMV, we believe that the boundaries of the

CSA are inappropriate and exclude much of the important habitat for condors within Critical habitat. The boundaries of the CSA, although they may be convenient for allowing development in TMV, are unsupported in any rigorous or defensible way by analysis of available condor locations.

In fact, when a half-mile buffer is provided around each GPS data point, as seen in Cogan's Figure 14 (our Appendix 2), the great majority of the TMV planning area is covered. How much buffer should be indicated around each data point is a matter that can be debated and may vary with the sort of use of an area made by condors and by humans, but we note that the MSHCP and DEIS do not provide any consideration of buffers around condor location points in their various analyses, which is not a conservative way to view the data. With respect to the known sensitivity of historic condors to disturbance when feeding on carcasses, a half-mile buffer may well be too limited with respect to long-term sustained use. Buffers that have been suggested in past documents have ranged from .5 miles for roosting and bathing sites to .8 to 2.3 miles for nesting sites (see Text Box 1 following Figure 14 of our Appendix 2).

Significantly, while the full GPS point-data set available from USFWS is presented in the Cogan report (our Appendix 2, Figs. 6, 14), the most recent GPS data set (May 1, 2008 to December 31, 2008) is not included in the MSHCP and DEIS documents, and many of the condor positions during this period are within the TMV Planning Area, suggesting heavy use of the area. Further, interpretation of the significance of the location records in these documents is difficult for the reader because the boundaries of Critical Habitat are not presented in the same figures. The absence of the most recent GPS data set from these documents is not explained but tends to underestimate use of the TMV area by condors. Even the full GPS data set, because of its limitations, cannot be assumed to capture all locations on Tejon important to full condor recovery in the long term.

The MSHCP statement that only 3% of GPS locations of adults and subadults from April 2002 to June 2008 pertain to Tejon gives an unrealistic feel for importance of the ranch to condors, as it ignores the context of the GPS data. Condor movements during most of 2002-2008 were strongly influenced by the location of feeding stations near release areas and on Bitter Creek NWR that were far from Tejon, and many of the released birds had not yet discovered Tejon. The Tejon Ranch specifically sued the USFWs in the mid 1990s to prevent releases near or on the ranch, and for much of the period of GPS records, many of the birds monitored were still closely tied to release areas and had not yet developed anything approaching normal ranging behavior.

Thus the percent of GPS records that came from the ranch during this period cannot be considered representative of what can be expected in the long term and is highly misleading. Indeed, the point of most importance is not what percent of past GPS records pertain to Tejon, but the fact that many birds in the condor population with no prior experience on Tejon have begun to use Tejon Ranch in

very recent years with no encouragement from the release program or Tejon. The recent reoccupancy of Tejon by released birds is one of the most powerful indications of the importance of the ranch to recovery of the species, and condor use of the ranch can be expected to reach and maintain high levels in the years ahead if the ranch is not degraded by development or other detrimental changes in management policies. Indeed, by June 2009 all GPS monitored birds in the southern California population were being documented using Tejon (J. Grantham, USFWS, pers. comm.), even though June has not been a peak month for use of Tejon in historical data sets (see Meretsky and Snyder 1992). The heavy use of Tejon in data for 2008 and 2009 is consistent with increasing importance of Tejon relative to other foraging areas, due in part to the continuing loss of other foraging areas to development.

For the reasons stated at the beginning of this section, Critical Habitat on Tejon is high-quality foraging habitat for condors, and clearly all areas within condor range are not equal in the eyes of condors. Recovery efforts need to work within established condor use patterns, not against them, and should not attempt to establish new patterns that are likely to be less efficient and less sustainable than those the birds have historically followed. The heavy historic and recent use of Critical Habitat on Tejon Ranch by condors appears to be no accident, and with the ongoing major losses of other foraging areas to development, it remains crucial not to degrade specific important areas on the ranch if full recovery of the species is to be achieved.

The MSHCP makes much of the general conclusion of condor researchers (including ourselves) that decline of the historic condor population was not due primarily to habitat loss but to various mortality factors (see MSHCP pages 4-33. 4-44, 4-48). Nevertheless, all informed condor biologists to our knowledge fully expect that foraging habitat will become an important limiting factor as mortality factors are brought under control and the condor population recovers (see Snyder 2007), especially because of the progressive losses of foraging habitat to urbanization and other forces that have been occurring in recent decades. The importance of Tejon Critical Habitat to the future of the condor has been becoming steadily more crucial, and, if anything, the areas of Tejon that have been designated Critical Habitat are too conservative in view of the data in Appendix 2. Indeed the location records in Appendix 2 suggest that eastern portions of the township to the west of the southernmost township within critical habitat have had enough condor use to justify their inclusion. Notably, these areas also coincide with TMV development.

Losses of condor foraging habitat in recent decades have been massive. We note in particular, the recent and prospective losses of condor foraging habitat in the Simi Valley, San Fernando Valley, and Santa Clara Valley (Newhall Ranch slated for 21,000 new homes) and the Hathaway Ranch (6000 acres for sale for potential development adjacent to the Hopper Mountain National Wildlife Refuge). These areas have not been officially identified as Critical Habitat, but they are important

historic foraging areas for the species, and their progressive loss to development makes the few foraging areas that have been identified as Critical Habitat all the more crucial to future recovery of the species.

On page 39 of Appendix C, the MSHCP misrepresents the Recovery Plan by stating that "the loss of foraging and [sic?] habitat is not considered an important factor with respect to the recovery of the condor (FWS 1996)." Actually, what the Recovery Plan states on this subject (page 27) is "An important factor in the establishment of wild condor subpopulations is the existence of suitable habitat."

B. Negative Impacts of the MSHCP on California Condor Critical Habitat

One of the surest ways to degrade condor habitat so that it will not be viable for long-term use by the species is to develop the lands in question for urban or suburban living areas. The historical record is clear in indicating that the original wild condor population did not occupy or utilize urban or suburban areas. The reasons for this surely include, but are not limited to, various forms of molestation of birds by humans, limited food supplies, collisions with overhead objects and wires, microtrash ingestion by the birds, sensitivity of the birds to human disturbance when feeding on carcasses, and exposure of birds to environmental pollutants. Many of the problems that have been encountered in condor releases so far, some of them lethal, trace to released birds being overly attracted to humans and civilization, in part because of their captive experience (Mee et al. 2007). Major efforts are currently being made, both before and after release, to ensure that released birds have as little contact as possible with civilization and people and that the birds interacting with people and civilization receive negative reinforcement for such behavior.

Thus, placing a major housing development in the midst of the most important historic foraging area known for condors cannot be viewed as anything other than a major threat to recovery of the species. We view the proposed TMV development as clearly representing a "take" of California condors and "adverse modification" of Critical Habitat that has grave implications for recovery of the wild population.

The MSHCP states that the TMV Planning Area consists of 19,091 acres of Condor Critical Habitat (14.5% of Critical Habitat on Tejon), yet claims the actual area of impact will be only 1,337 acres (Appendix C, page 38). This remarkable assertion is based on reasoning and calculations that are not fully presented and presume unrealistic habitat specificity in the condor. The assertion lacks credibility, especially in view of the amount of acreage that will be withdrawn from hunting (presumably at least the full TMV as stated tangentially on page 43 of Appendix C). Indeed, in our view one of the most important impacts of TMV will be the incompatibility of home developments with continued hunting (hence eliminating a dispersed food supply for condors – see following paragraphs).

Hunting will necessarily be proscribed in the region because of the risk of stray bullets to people, objectionable noise pollution, and desires of residents for viewing wildlife species. As stated in Appendix C (page 43), hunting will not continue in TMV, and in fact it is only reasonable to assume that hunting restrictions will have to extend far beyond the 2-acre impact zone projected for each residence, thus leading to a much greater impact area represented by TMV than claimed, simply on the basis of this one issue alone. Other features of the MSHCP may also affect much more acreage, as will be discussed below.

Inexplicably, the positive importance of hunting to condor conservation and recovery, and the exact areas that will be excluded from hunting are not presented in the MSHCP and DEIS (see MSHCP section 2, page 8). Yet loss of a dispersed hunting-created food supply for condors in the TMV region is one of the most important negative effects of the development proposal. Similarly, the exact areas that will be excluded from grazing within and adjacent to TMV and the amount of grazing that will continue on other lands are not specified in the documents, yet reductions in the spatial and absolute levels of grazing likewise must be considered major negative impacts because the presence of cattle herds also is a source of dispersed carcasses. We suggest that there is no justifiable basis for omitting consideration of these matters, and their omission renders the entire MSHCP and DEIS documents highly incomplete and defective in recognizing and evaluating negative impacts.

Natural condor foraging behavior depends on the existence of a dispersed food supply, necessitating large time investments of the birds in searching for food. When provided with reliable food subsidy at predictable sites, the birds tend to greatly reduce their foraging activities, and have much time available for maladaptive behaviors such as trash ingestion, and interactions with humans and human structures (see Mee et al. 2007). Because of such problems, recent efforts have been made to move condor feeding stations to locations much more distant from nesting areas, and this has resulted in some reduction in maladaptive behaviors, although still not complete disappearance of such behaviors (J. Grantham, USFWS, pers. comm.). Unlike the earlier situation, the released birds are now faced with lengthy commutes from nests to food which occupy a much larger fraction of their time budgets than before.

The ideal foraging situation, from a behavioral standpoint, is a fully dispersed and unpredictable carcass supply, and now that lead ammunitions have been banned from condor range by the state of California, the principal short-term reason for feeding stations (a reliably uncontaminated food supply) is on the way to becoming obsolete. Once compliance with no-lead ammunitions becomes fully effective, there will be no need for feeding stations, provided dispersed hunting continues as an established activity in condor range. In fact, feeding stations become an undesirable practice overall because of their behavioral disadvantages (see Snyder 2007, Mee and Snyder 2007). They also represent a basically risky conservation approach in the long term from the standpoints of (1) ensuring

continuity of supply in the face of unknown future administrative and fiscal restraints, and (2) potential dietary difficulties for the condors inherent in reliance on limited food supplies such as the stillborn dairy cows that have typically been used in feeding programs. Much more preferable is a more diverse and more natural food supply that does not demand constant administrative attention.

The multiple inherent problems with feeding programs are enough to disqualify them as providing effective mitigation for the loss of dispersed foraging habitat represented by the TMV development. More important, however, is the fact that feeding stations are in reality an obstacle to the long-term recovery of condors, whereas the dispersed foraging afforded by the present grazing and hunting regime on Tejon supports long-term recovery. Condor populations supported by feeding stations are, by definition, not self-sustaining, and to suggest feeding stations as a long-term alternative to the foraging currently afforded on Tejon clearly defeats the recovery purpose of the Endangered Species Act.

We note that the most recent recovery plan for the condor (USFWS 1996) recognized a possibility that feeding stations might be necessary on a long-term basis (because of the threat of lead contamination in hunter-shot carcasses).However, this plan must now be recognized as obsolete on this subject, as it was written before alternative nonlead bullet ammunitions were well developed, before the negative effects of feeding stations on condor behavior were well understood, and before there were any expectations that banning lead ammunitions might prove politically viable. With the recent regulation changes regarding ammunitions in condor range made by the California Fish and Game Commission, the need for feeding stations can be expected to disappear from future planning documents and be replaced with policies favoring dispersed nonsubsidy food supplies. Thus, the MSHCP emphasis on feeding stations, and the loss of hunter-provided dispersed food supplies in the TMV planning area, are directly contrary to long-term conservation goals for the condor.

In addition to underestimating impacts with respect to areas available for hunting and grazing, the MSHCP proposal also adopts a less than cautious viewpoint on other impacts. One important concern is that disturbances intrinsic to development of the TMV planning area may sufficiently reduce condor use in other adjacent areas, such as the proposed Condor Study Area, that they too become lost to use, even though they may appear to lie outside the directly impacted area. If the areas of greatest condor use on Tejon are greatly modified (by disturbance and the removal of food supplies) or become a source of obvious disturbance to condors (through increased traffic, construction, recreation, noise, etc.), overall use of the entire Tejon Ranch by condors may be greatly reduced.

The MSHCP does not specify how much additional human use (either by residents or by the public at large) of non-TMV areas will be created by TMV development, stating only that use will be carefully regulated. Unfortunately, the multiple negative impacts represented by greatly increased numbers of people in

TMV areas cannot be expected to be confined to the immediate surroundings of TMV residence areas, and effective regulation of the many activities of residents poses inherent difficulties. The ranch, for example, will be faced with demands for recreational use of surrounding undeveloped lands once development takes place and may well find it impractical to regulate such use effectively. Once residents are scattered throughout the region, controlling what they do at all times becomes highly problematic and indeed efforts at control may well be perceived as oppressive and may be widely ignored by residents. The highly dispersed and strung-out nature of proposed housing development of TMV guarantees (1) a maximum of environmental impacts relating to edge effects of developed areas and (2) maximum difficulty in regulating such effects. Such effects are not recognized in the MSHCP and DEIS, but can be appreciated from Figure 15 of our Appendix 2.

In addition, we note that the Tejon Ranch has always constituted a geographic bottleneck in the movements of condors among various important portions of its range, as can be seen in the map of condor range in our Appendix 2, figure 1. Essentially all birds commuting between the southern Sierras, the Sespe Sanctuary, and western regions of importance, such as the Bitter Creek NWR and nesting areas in Santa Barbara county have to funnel through the Tejon Ranch because of the unsuitability of other routes of travel due to deficiencies in wind conditions and topographic relief. The birds have clearly avoided flying across the San Joaquin Valley itself and have characteristically moved through Tejon to travel to and from the most heavily-used regions within condor range, including Tejon itself.

The extent to which condor use of traditional foraging areas in the Sierra Nevada north of Tejon Ranch (including three Critical Habitat areas) may depend on some sort of “stepping stone” use of Tejon itself is not surely known, but if Tejon should for any reason be lost as an important foraging area, it seems plausible that the increased fragmentation of remaining foraging areas may prevent birds from southern portions of the range from developing or maintaining foraging traditions involving more northerly regions – the travel distances between remaining viable foraging areas may simply become too great. In the release program so far, no sustained use of these northerly areas has yet developed, suggesting some difficulties in achieving this aspect of recovery even without loss of Tejon Ranch as a foraging zone. If Tejon becomes lost as a major foraging area, this goal of recovery may well become much more difficult. Thus, for birds released in southern portions of the historic range, degrading Tejon Critical Habitat poses a risk of eliminating or interfering with use of three other portions of Condor Critical Habitat (Blue Ridge, Kern County Rangelands, and Tulare County Rangelands) by a recovering population, and preventing occupancy of the full range known for the historic population of the 1980s. Likewise, any birds potentially released in the future in nesting areas of the southern Sierra Nevada may never develop movements to areas of Critical Habitat south and west of the Tejon Ranch.

We have earlier noted that the MSHCP unrealistically minimizes the importance of Tejon for condor foraging. It also unrealistically minimizes the importance of Tejon for condor movements. Specifically, the map shown of condor range in Figure 1 of Appendix C of the MSHCP (also given on page 66 of Section 4) is extraordinarily inaccurate in the region of Tejon and shows huge areas of the San Joaquin Valley up to Bakersfield and beyond as part of condor range and presumably available for condor movements, thus diminishing the relative importance of Tejon itself as a travel conduit for condors. The map given in our Appendix 2 (Figure 1), as prepared by Cogan, is very similar to the map in the Recovery Plan and shows condor range much more accurately. In text, the MSHCP recognizes that condors have not used the floor of the San Joaquin Valley to any significant extent (MSHCP page 4-9) but the maps provided in the same plan contradict the text. In reality, condors moving between use areas in the Sierras and the Sespe and other southern areas have always been effectively obligated to pass through Tejon, and they have never been well documented using much of the valley area presented in the MSHCP as condor range.

C. Inadequacy of Proposed Mitigation Measures

The MSHCP proposes that the direct impacts of development of TMV might be successfully mitigated by offering the birds a continuing feeding program in some other location. There are several objections to this suggestion, as discussed in preceding sections. Two of these are especially important. First, because it presumes a potentially perpetual food subsidy program, this suggestion implies continued negative behavioral pressures on the condor population and precludes the development of a fully recovered population involving free-living birds foraging for dispersed unpredictable carcasses and otherwise behaving in as natural a way as possible. A population maintained on subsidy is effectively an “outdoor zoo” population that is neither necessary nor desirable. Second it presumes a perpetual and very expensive obligation to maintain a food subsidy program. All human institutions are subject to problems in maintaining administrative continuity in the long term, yet no lapses in providing a food supply for birds would be tolerable for a population dependent on subsidy.

Also proposed as mitigation has been the use of lead-free ammunition for hunting on the ranch. Use of lead-free ammunition is now accepted as an essential component of condor conservation, but compliance with lead-free ammunition is now state law in condor range, so it does not qualify as a mitigation action taken by the ranch that might balance the negative aspects of development.

Other mitigation measures proposed, including maintenance of habitat quality in areas outside TMV through various means, avoidance of development of above-ground towers or power or phone lines, measures to reduce micro-trash buildup in areas accessible to condors, and maintenance of grazing and hunting practices in

non TMV lands are either practices already in place under pre-existing management practices or are efforts to minimize new negative impacts. As such, they cannot be invoked to imply an improvement of the situation for condors. They simply represent an effort to maintain the status quo. Yet these efforts will probably fail to maintain even the status quo in many respects (e.g., hunting and grazing will presumably be greatly reduced, if not abolished in TMV, and an increase in microtrash of some extent probably cannot be avoided). The benefits of establishing a permanent condor biologist position on the ranch are highly speculative and cannot be expected to begin to compensate for the negative aspects of development.

The MSHCP makes much of the willingness of the ranch to modify its first proposal on TMV and forego some of the development on Geghus Ridge. This hardly qualifies as meaningful mitigation, as it only reduces the area of residential TMV development by 2,385 acres (compared with the more than 19,000 acres still in the proposal). While Geghus Ridge is indeed a place of importance to condors, location data in our Appendix 2 indicate that most portions of TMV within Critical Habitat also have importance to condors, and in our own experience, for example, condor feeding events on Tejon have hardly been limited to ridgetops, or to open grassy locations for that matter, making the habitat acreage analyses offered in the proposal unpersuasive. While condors may be most commonly observed feeding in open grassy areas (perhaps in substantial part because they are most visible from a distance in such locations), we have also seen them feeding in forested portions of the ranch under the canopy of trees on multiple occasions (in particular, in portions of the TMV erroneously not considered important to condors in the MSHCP).

Thus the statement on Page 4-6 of the MSHCP that condors require “fairly open spaces” for feeding is simply incorrect, and as a result the entire Habitat Suitability methodology presented on page D-17 of Appendix D of the MSHCP lacks plausibility.

In sum, the proposed mitigation measures in the MSHCP fail to provide adequate compensation for the many negative impacts of the plan on condors. Potentially, the only way the negative aspects of TMV development on condors can be successfully mitigated is either to drop these development plans altogether or to change the sites of developments to a region (or regions) that lies outside Condor Critical Habitat and receives no significant use by condors. The Tejon Ranch has many lands that lie outside Condor Critical Habitat and that have not received significant condor use historically. Development of these lands presumably would not impact the condor significantly, at least in a direct sense, although there may well be other environmental reasons not to develop some of these lands. In any event, no compelling arguments have been presented for why any Critical Habitat lands must be developed.

Approval of the MSHCP for Tejon Ranch would set a most unfortunate precedent for disregarding Critical Habitat protection not only for the condor, but for all other endangered species, based in essence on nothing more than unpersuasive claims that (1) substantial residential development of Critical Habitat will have no adverse impacts on the condor or may even be beneficial for the species, (2) maintenance of the status quo in major management policies of other Critical Habitat lands or tolerating limited degradation of major management policies of these lands might somehow qualify as mitigation for negative impacts of proposed development, and (3) major negative impacts of development can be mitigated by initiation of other ultimately negative impacts (feeding programs). All these arguments are defective, and we emphasize instead that development of lands for urban or suburban purposes has never proved compatible with condor conservation in the past, and is highly unlikely to prove compatible in the future.

D. Some General Remarks on the DEIS

It is surprising to see that the alternatives to proposed MSHCP development considered in the DEIS do not include a real "no action" alternative. All are development proposals of one sort or another, including the alternative labeled "No Action/ No MSHCP." Yet surely for an area including critical habitat for an endangered species, one of the alternatives considered should be one of continuing management policies of the past that have proved beneficial for the species in question without making risky changes in management procedures. In the case of Tejon, a real "No Action" alternative that involves no residential or commercial development in Critical Habitat and a continuation of grazing and hunting practices, without increased recreational development would come close to maximizing benefits for the species and is a real alternative. The fact that no such alternative is considered and that an alternative involving substantial development is labeled "No Action" invalidates the entire exercise. Tejon Ranch is under no obligation to develop its lands, nor is the federal government under any obligation to assume that the only alternatives to MSHCP development are other kinds of development. Failure to consider a real "No Action" alternative is inconsistent with the requirements of the policies implementing NEPA.

The present DEIS is too badly flawed, legally and scientifically, to permit careful scrutiny of the impacts of proposed action – the purpose of an environmental impact analysis. The same scientific limitations are present in the MSHCP. Condors are the final arbiters of what areas are important to them, and they have spoken clearly. Their present use of Tejon, especially the areas proposed for development in TMV, despite the fact that no releases have been conducted anywhere nearby, provides compelling evidence for the enduring importance of these areas to the species, and a presumption must be recognized that substantial development of high use areas in Critical Habitat poses significant and unacceptable impacts on recovery of the species, as condors have never demonstrated long-term use of urban and suburban areas. The materials presented

in the MSHCP and DEIS do nothing to dispel that presumption. The analyses provided of habitat use are based on faulty assumptions, major negative impacts are unaddressed in these documents, and the mitigation actions proposed are inadequate to compensate for reasonably anticipated impacts. In part, the mitigation actions proposed offer long-term negative influences of their own that are incompatible with full recovery of the species.

In our considered judgment, we find the proposed Tehachapi Upland Multi-species Habitat Conservation Plan to be incompatible with recovery of the California Condor and to represent significant adverse modification to Critical Habitat for the species.

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U.S. Fish and Wildlife Service. 1996. California Condor recovery plan, 3d rev., Portland, Oregon, 62 pp.

F. Qualifications and experience of authors of these comments

David A. Clendenen – condor field biologist, Condor Research Center (1982-1994, lead biologist for USFWS in charge of condor field studies, (1994-1997), Condor Recovery Team member (1995-2000).

Janet A. Hamber – condor biologist at the Santa Barbara Museum of Natural History (1976-present); cooperator with USFWS in condor nesting and telemetry studies (1980-present); archivist and manager of Condor Information System (1988-present).

Dr. Allen Mee – post-doctoral fellow (2001-2006) for the Zoological Society of San Diego, research on condor breeding in California and Arizona, convenor of symposium on condor at AOU 2005 conference, Santa Barbara; senior editor of *California Condors in the 21st Century* (2007); currently manager of White-tailed Sea Eagle Reintroduction Program in Ireland.

Dr. Vicky J. Meretsky – field biologist Condor Research Center in charge of telemetry interpretations (1984-1986); senior author of *Range Use and Movements of California Condors* (1992); senior author of *Demography of the California Condor* (2000); associate professor of environmental science, adjunct appointment to the Department of Biology and affiliated faculty at the Maurer School of Law, Indiana University, 1997 - present

Anthony Prieto – co-founder of Project Gutpile (1999-present).

Fred C. Sibley – former field leader of condor research program for USFWS (1966-1969); author of *Effects of the Sespe Creek Project on the California Condor* (1969).

Dr. Noel F.R. Snyder – former field leader of condor research program for USFWS (1980-1986); former member of Condor Recovery Team (1980-1986); senior author of *The California Condor, a saga of natural history and conservation (*2000); senior author of *Introduction to the California Condor* (2005); recipient of William Brewster Award of American Ornithologists' Union for research and conservation work with the California Condor and Puerto Rican Parrot, 1989.

William D. Toone – Condor Recovery Team member (1986-1992); Curator of Birds, Zoological Society of San Diego (1983-1993); Director of Applied

Conservation, Zoological Society of San Diego (1993-2003); Founding trustee and Executive Director of the ECOLIFE foundation (2003-present)

Appendix 1: Sample Statements of the U.S. Fish and Wildlife Service and the California Department of Fish and Game on the Importance of Critical Habitat for Condors on Tejon Ranch.

It is the opinion of the recovery team that the condor's survival would be severely jeopardized by any major change in the use and/or management of the core portion of the Tejon Ranch (U.S. Fish and Wildlife Service 1979).

The condor will not survive without Tejon (in litt., U.S. Fish and Wildlife Service, November 10, 1971.

…the ranch is one of the most important links in the preservation of this endangered species (in litt., California Department of Fish and Game, May 21, 1979).

[Tejon Ranch] … *is essential to condor survival and without it value of the Sespe area would be questionable* (U.S. Fish and Wildlife Service 1972).

The future of the California condor could hinge on maintaining the Tejon Ranch habitat (U.S. Fish and Wildlife Service 1972).

It would be disastrous to have any major new developments very far inside the red line [central portion of the Tehachapi Mountains] (in litt., U.S. Fish and Wildlife Service, June 7, 1979).

I am mainly concerned about permanent or long term disturbances, or major changes in the level of human activities. Homesites or ongoing mining activities, for example, I feel would be incompatible with proper condor management (in litt., U.S. Fish and Wildlife Service, June 7, 1979).

Appendix 2 – Condor Location data assembled by Cogan

California Condor Activity in the Tejon Ranch Region

A summary of California condor habitat use patterns in conjunction with designated critical habitat and proposed developments on Tejon Ranch, CA

Christopher B. Cogan, PhD

12 June 2009

A CENTER for BIOLOGICAL DIVERSITY REPORT

California Condor Activity in the Tejon Ranch Region

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Published by the Center for Biological Diversity
12 June 2009

Front Cover:
Adult condor "AC-6" on Tejon Ranch
Photograph by Christopher B. Cogan, 18 March 1986

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The Center for Biological Diversity is a national nonprofit conservation organization with more than 200,000 members and online activists dedicated to protecting endangered species and wild places. We work through science, law, and creative media to secure a future for all species, great or small, hovering on the brink of extinction.

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Introduction

To determine the significance of the Tejon Ranch as habitat for California condors, this report combines and analyzes all available condor data from multiple datasets over the period from the late 1800's to the present. Data sources include:

Visual condor sightings from the McBee records: 1890 – 1984
Visual condor sightings from USFWS and Audubon researchers: 1982 – 1987
Visual flightlines from USFWS/Audubon pilots: 1982 – 1987
Condor Nest location records. 111 records from pre-1900 – 1986

USFWS (Ventana):
CACO_VWS_GPSDATA_1-65535.xls
CACO_VWS_GPSDATA_65536-77250.xls
- VentGPS03_06_Merge
- 77,250 records (Only includes: Date, Time, Lat, Lon. Condor ID's were not provided) from 17 July 2003 – 3 June 2006

USFWS non-visual point locations from Satellite radio transmitters (select Fix = 3)
XY_MergeFix3_WGS84
29,595 records from: Dec 23, 2001 – June 17, 2008

USFWS non-visual point locations from Satellite radio transmitters
XYSatelliteDataTable
3,923 records from: 1 Jan 2007 – 19 June 2008

USFWS non-visual GPS tag point data:
XYGPSDataTable
37,521 records from 1 Jan 2007 – 19 June 2008

USFWS non-visual GPS tag point data:
XYGPSDataTable
38,405 records from 1 May 2008 – 31 Dec 2008

World Wildlife Fund terrestrial ecoregions
Tejon Ranch proposed development boundaries from the Center for Biological Diversity (CBD)
Tejon Ranch property boundaries (from CBD)
Condor ESA critical habitat designation from http://criticalhabitat.fws.gov/ (10 polygons).

Spatial Analysis of Tejon Ranch as California Condor Habitat

A series of 15 geographic information system (GIS) maps (Figures 1-15 below) summarize and illustrate the various types of condor activity in the Tejon Ranch area. Each of these map figures are presented in color. Black and white copies of this report will not provide sufficient information.

Figure 1. Locator Map. Historic California condor range, ESA designated critical habitat zones, Tejon Ranch property, and proposed Tejon Ranch development area.

This map identifies the position of Tejon Ranch and the Tejon Ranch proposed development areas within the historic condor range. The condor range boundaries were drafted in consultation with USFWS and National Audubon condor biologists in the 1980's providing a generalized outline of condor habitat areas. Of particular interest is the Tejon Ranch location at a four-fold ecoregion "choke point" between the transverse range and the Sierra Nevada Mountains.

Figure 2. WWF Ecoregions. The original condor range map from Figure 1 was drafted as a general consensus by condor researchers. Figure 2 brings in an independent data set, the World Wildlife Fund for Nature terrestrial ecoregions (see also Hickman 1993, for the Jepson ecoregion version). Condors tend (with some exceptions) to avoid the California Central Valley and the Mojave Desert. This map provides further explanation for the constriction of the condor range in the Tejon Area, and highlights the uniqueness and importance of the region.

Another habitat property illustrated in Figure 2 is the division of the Tejon Ranch Proposed Development area into four major ecoregions, in particular the California interior chaparral and woodlands vs. the California montane chaparral and woodland types (yellow and purple in the map). Following general ecological principles, any consideration of habitat impacts or endangered species impact needs to treat each ecoregion separately. This is particularly important when considering how condors use habitats in multiple ecoregions and how a species such as the condor can act as an umbrella species.

Figure 3. McBee Records. The historic McBee records reflect visual condor sightings, with a total of 7,341 records included in the data base. The records run from 1890 until 1984. Approximately 1,342 sightings are from the Tejon Ranch area, with records from the 1930's through 1984. These Tejon area data include 1178 Airborne records, 102 perched records, and 51 feeding records. The McBee data are an important record of past condor habitat. What is particularly striking is the consistency of condor use in this area from our earliest records through present times. Recent condor captures, releases, or feeding programs have not significantly attracted nor deterred condors from the Tejon Ranch area. Pastoria Creek and Winters Ridge are prime examples of long-standing condor habitat areas.

Figure 4. Visual Records. The visual sighting data represented in Figure 4 are based on data collected by field researchers. From 1982 through 1987 there were 10,294 records collected, with approximately 1,800 in the Tejon Ranch area. Corresponding condor ID's (CID) include 11 individuals (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 97). CID code 97 indicates "unknown adult condor". Note how the spatial patterns of habitat use are consistent with the earlier McBee records.

Figure 5. Flight Lines. From the period 1982 – 1986 condor biologists in light aircraft used radio telemetry to locate tagged condors, then observe the birds visually and follow them in flight. While flying, the pilots drafted their course on county-scale maps, which were later digitized and compiled in GIS format. The flight data are unique, because they provide a consistent visual record of bird movements over large areas for a five-year period. Though the wild population was very small in these years, the Tejon area data include records from six individual birds (condor ID's 1, 2, 5, 6, 8, and 9). Please note that these data are intended as a general indication of flight routes, not as spatially precise as other data types such as the GPS data. In spite of the spatially coarse nature of the maps, the flight data add yet another important form of evidence identifying Tejon Ranch as critical condor habitat.

Figure 6. GPS Records. The GPS satellite telemetry data on condor locations represents a true breakthrough in data collection technology. The massive data volumes and quality of data offer critical insights to condor habitat use. The GPS locations plotted in figure 6 are from three USFWS data sets:

1) GPS data collected from 17 July 2003 – 3 June 2006 77,250 records with approximately 400 in the Tejon Ranch area. Approximately 80% of the records from this data set were located in the Ventana / Pinnacles region. Condor ID's were not provided with this data so a summary of the number of individual birds in the Tejon area is not presented here.
2) GPS data collected from 1 January 2007 – 19 June 2008 37,521 records, with approximately 1,300 in the Tejon Ranch area. All of the 17 birds from this data set have recorded locations in the Tejon area.
3) GPS data collected from 1 May 2008 – 31 Dec 2008 38,405 records, with approximately 1,500 in the Tejon Ranch area. Of the 17 birds represented in this data set, 14 have recorded locations in the Tejon area.

Of particular note with all of the Figure 6 records is the spatial correlation of the high accuracy GPS data with the older visual data sets, including the flight line data.

Figure 7. Pastoria Creek Map. Figure 7 is an enlargement of Figure 6, providing detail for key condor activity areas along Bear Trap Canyon and Pastoria Creek within the Tejon Ranch, and specifically within the proposed "Tejon Mountain Village" development area.

Figure 8. Perched Activity. To determine different types of condor activity within the Tejon Ranch area, the 1982 – 1987 visual data (10,294 records) were reduced to show perched activity only (2,901 records). These data included approximately 600 records in the Tejon Ranch area. Many of the perched records occur in the upland areas above Bear Trap and Tunis Creeks, and in the Winters Ridge area.

Figure 9. Feeding Activity. Of the 1982 – 1987 visual data records, 777 were coded as feeding records. This figure includes approximately 200 records of feeding condors within Tejon Ranch. Note how most of the feeding locations are well apart from the 5 kilometer buffers around nest locations. Also note how the flight lines that pass over the proposed development areas identify critical habitat which acts to connect the feeding areas with nesting areas. Based on the ecoregion patterns in Figure 2, this figure highlights multiple activities (nesting, flying, and feeding) within the California montane chaparral and woodland ecoregion. This figure also suggests how impacts in the Tejon area could also impact (for example) nesting areas 40 km to the south.

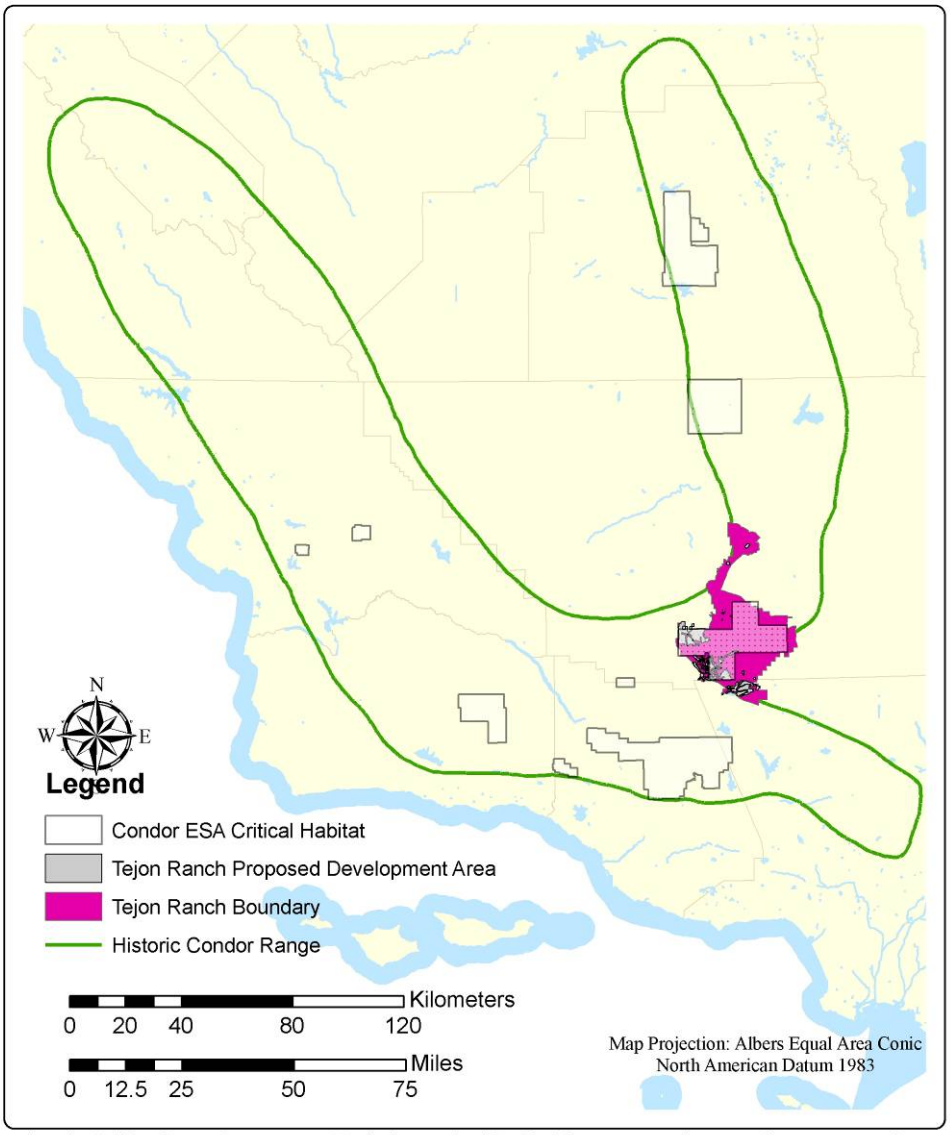
Figures 10 – 12. Perspective views of selected condor data within the proposed Tejon Ranch development areas. Please see figure legends for more information.

Figure 13. Koford Map. Historic 1953 map from Carl Koford with transition routes from Ventura to Tejon.

Figure 14. GPS-measured Condor Positions with ½ mile buffer. See figure legend for additional description and discussion.

Figure 15. Proposed Tejon Ranch development areas with 400 meter (1/2 mile, shown in blue) and 800 meter (1 mile, in green) buffer extensions. See figure legend for additional description and discussion.

Locator Map with Historic Condor Range and Designated Critical Habitat Zones

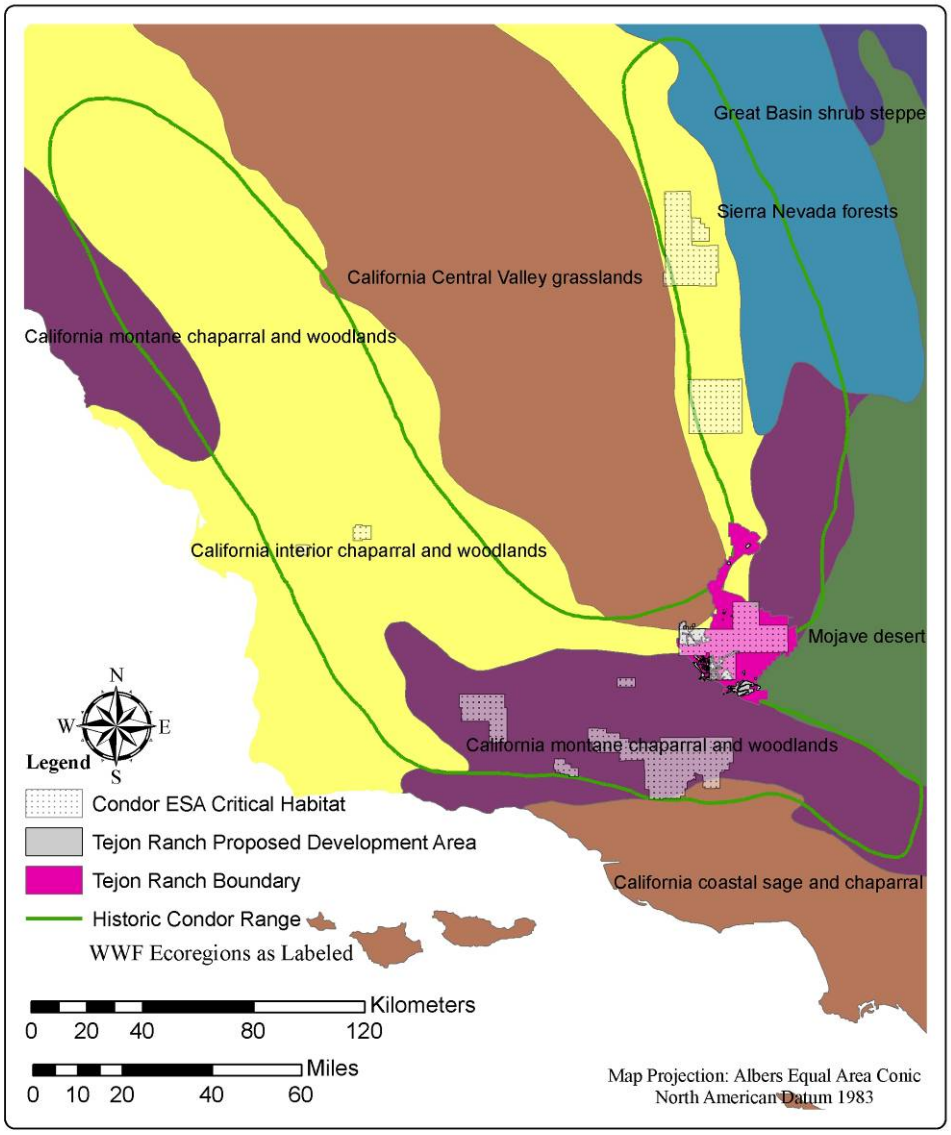


Historic California condor range, ESA designated critical habitat zones, Tejon Ranch property, and proposed Tejon Ranch development area.

GIS Analysis:
Center for Biological Diversity
1 May 2009

Figure 1. Locator.

Locator Map with World Wildlife Fund Terrestrial Ecoregions and Proposed Tejon Ranch Development Zones

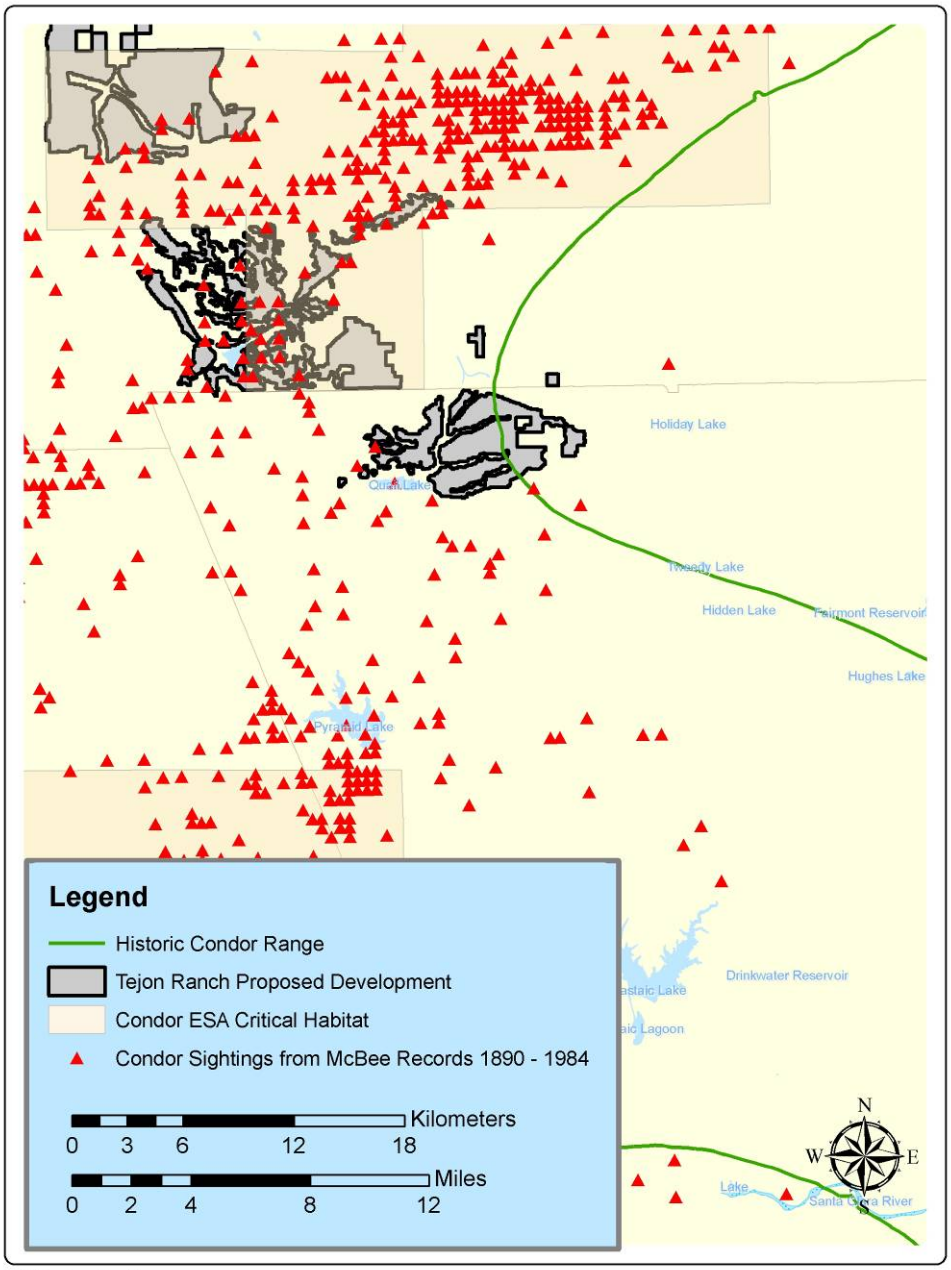


Historic California condor range with proposed Tejon Ranch development area and World Wildlife Fund terrestrial ecoregions.

GIS Analysis:
Center for Biological Diversity, 1 May 2009

Figure 2. WWF.

Condor Sightings from McBee Records 1890 - 1984



GIS Analysis:
Center for Biological Diversity, 1 May 2009

Figure 3. McBee.

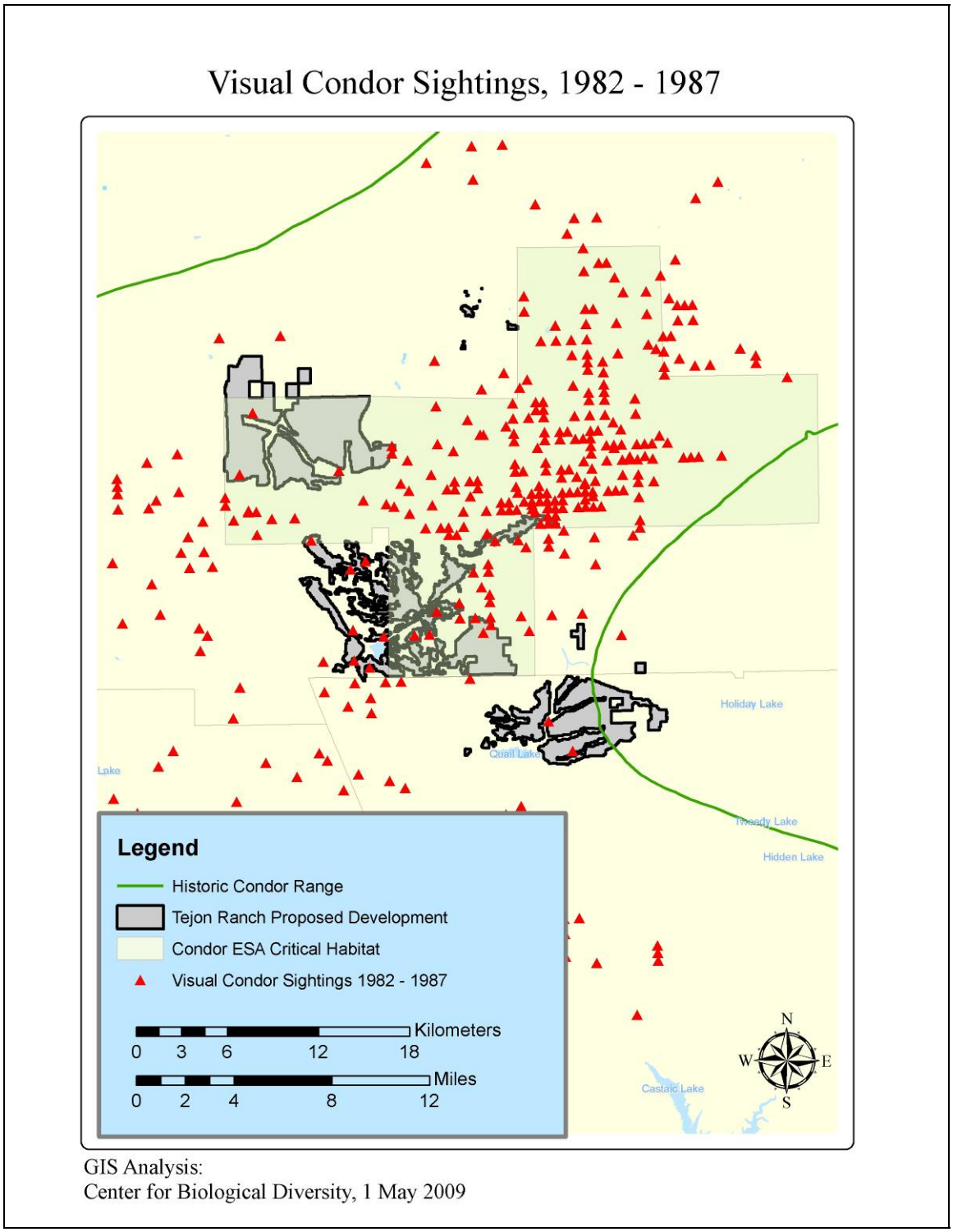


Figure 4. Visual.

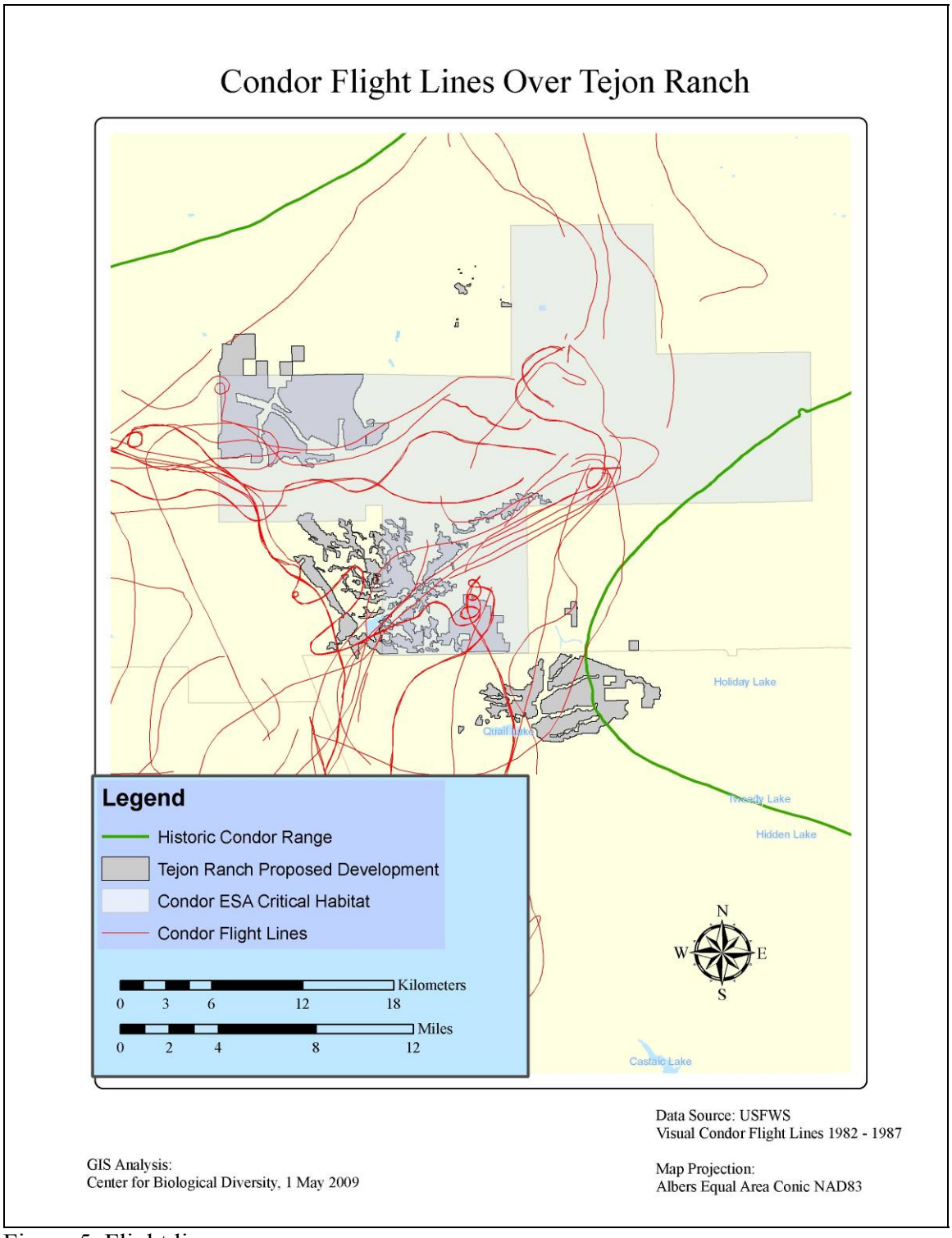
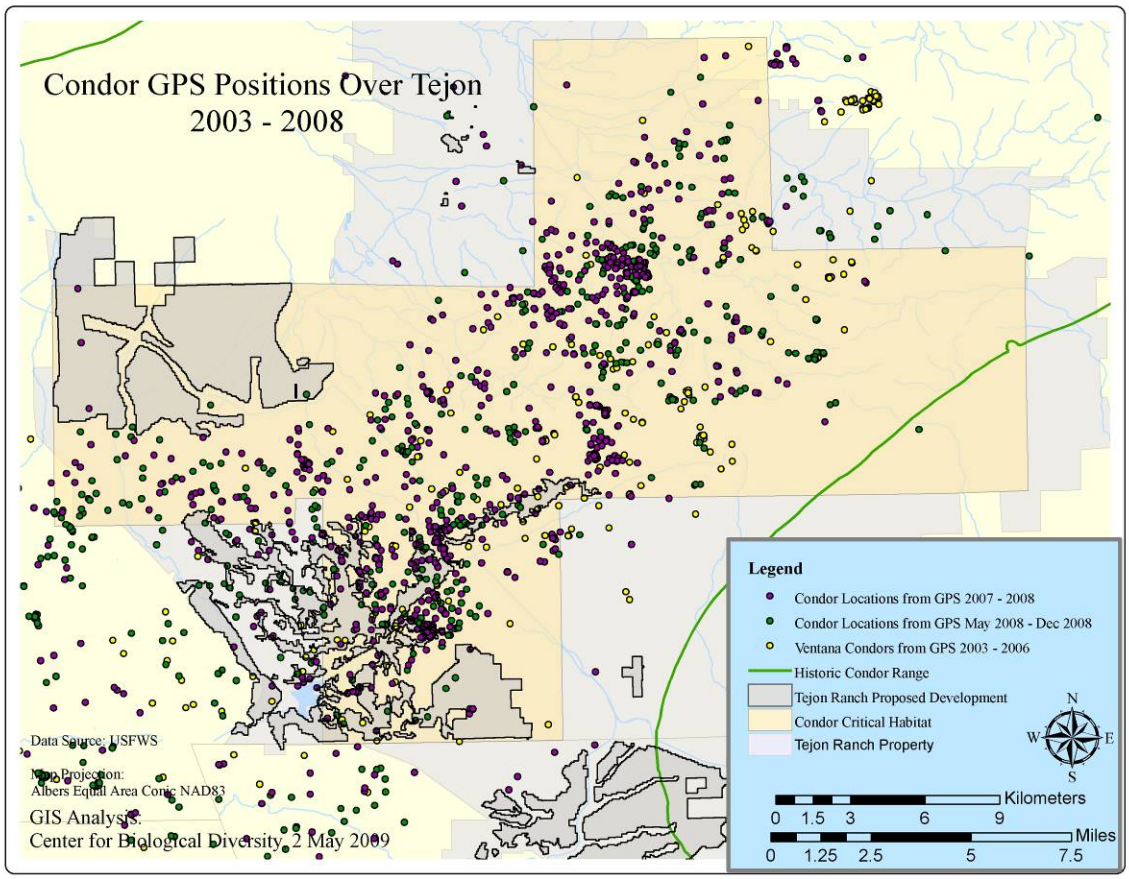


Figure 5. Flight lines.


Condor GPS Positions Over Tejon
2003 - 2008
Legend
Condor Locations from GPS 2007 - 2008
Condor Locations from GPS May 2008 - Dec 2008
Ventana Condors from GPS 2003 - 2006
Historic Condor Range
Tejon Ranch Proposed Development
Condor Critical Habitat
Tejon Ranch Property
N
W
E
S
Kilometers
0 1.5 3 6 9
Miles
0 1.25 2.5 5 7.5
Data Source: USFWS
Albers Equal Area Conic NAD83
GIS Analysis:
Center for Biological Diversity, 2 May 2009
Figure 6. GPS.

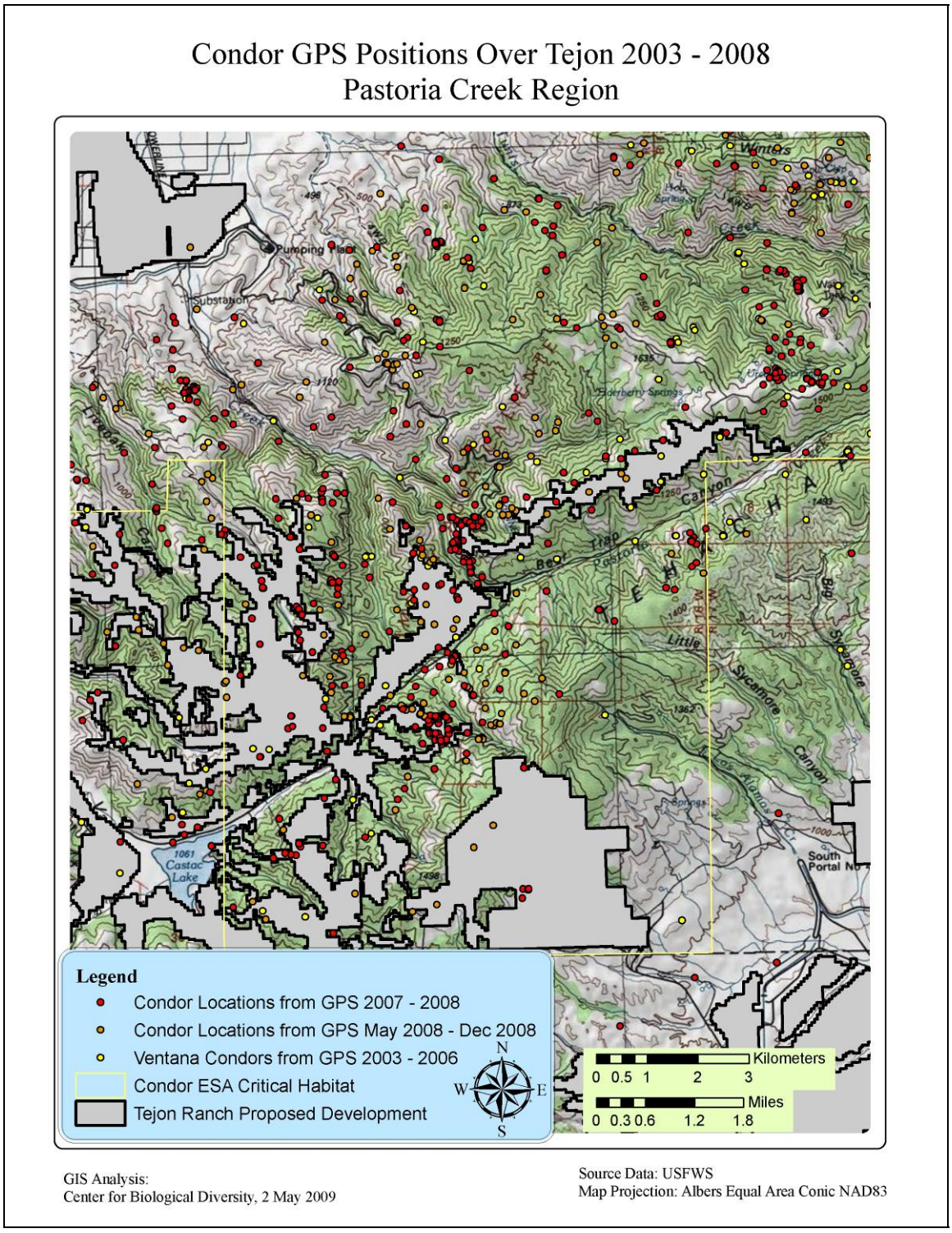


Figure 7. Pastoria Creek.

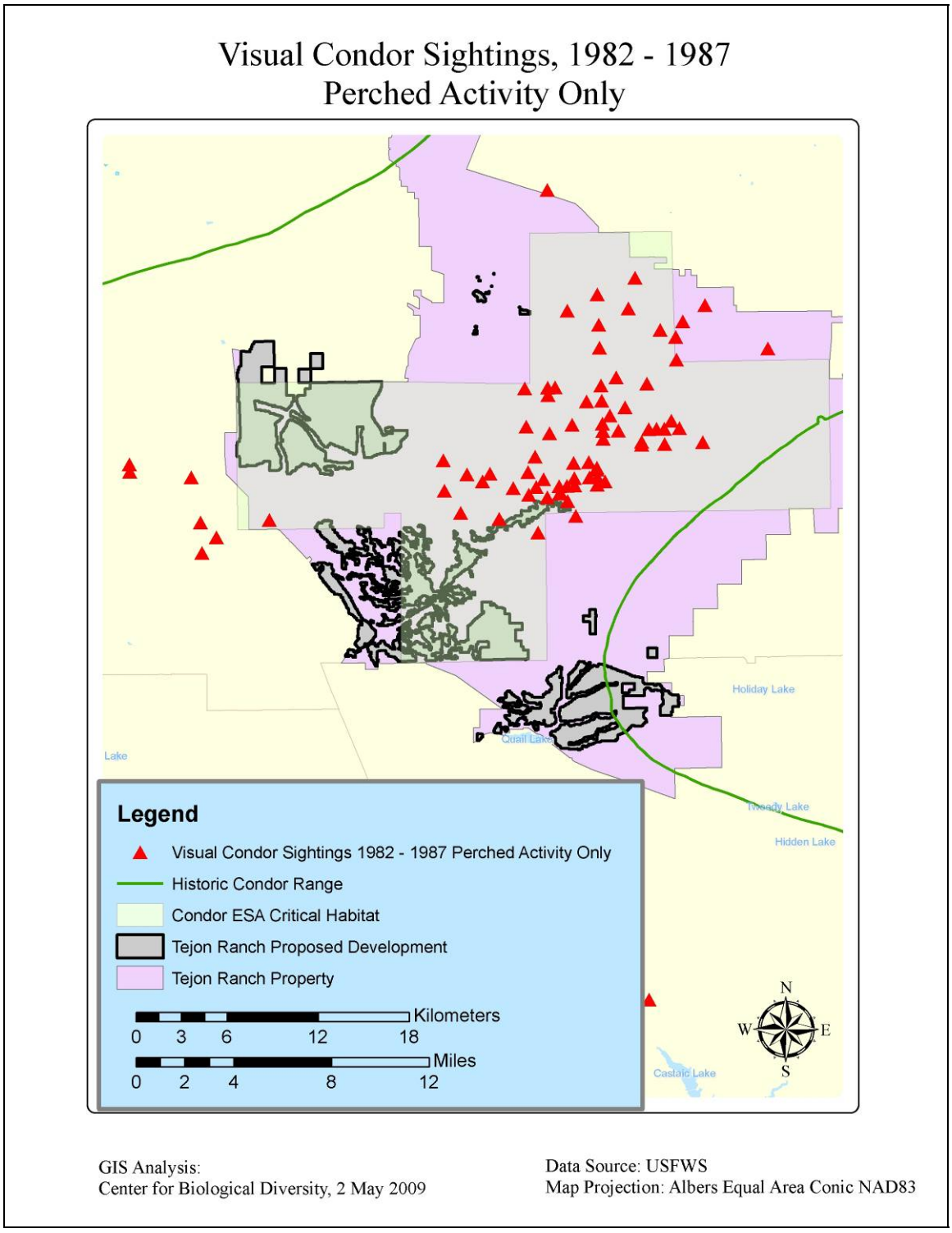


Figure 8. Perched.

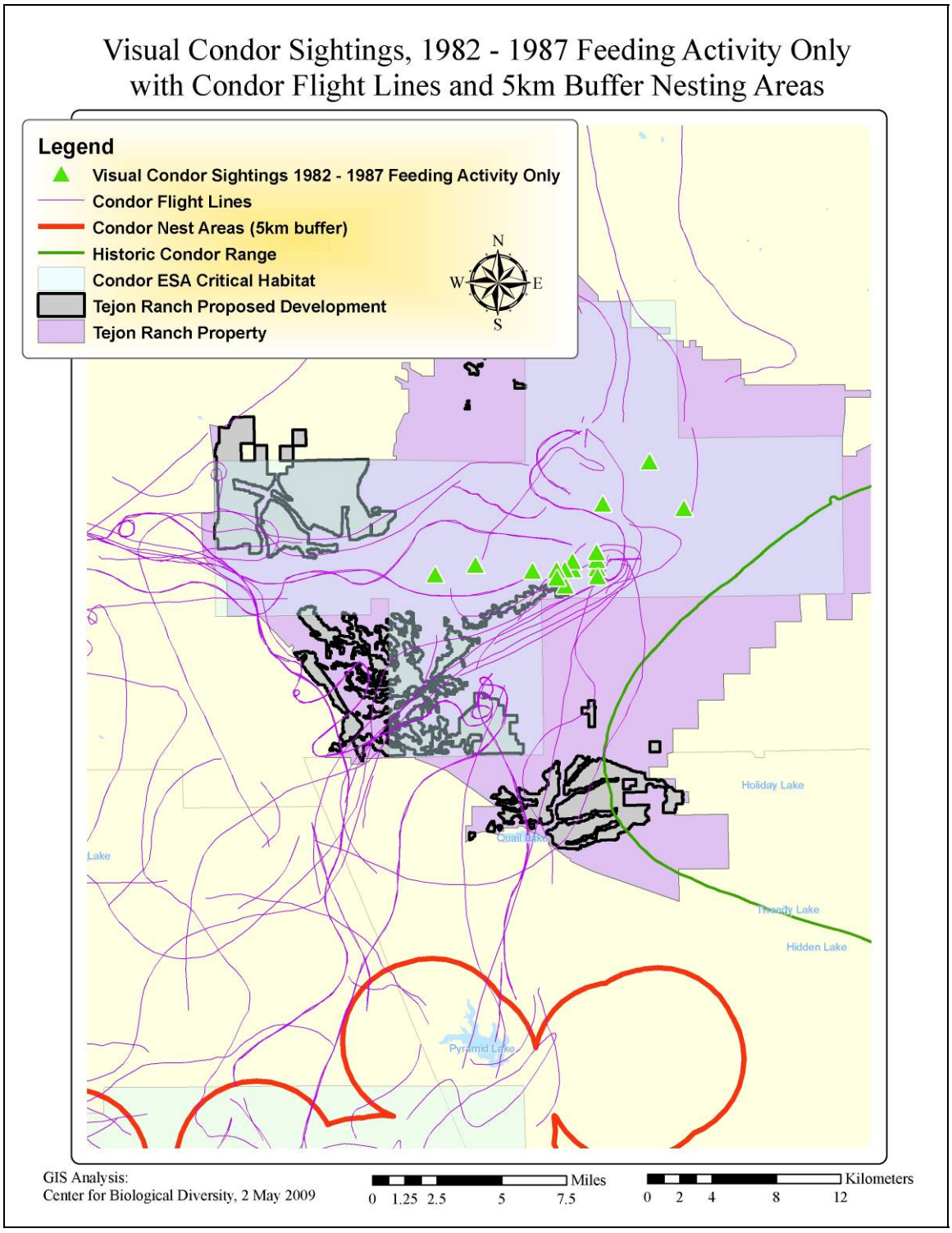


Figure 9. Feeding.

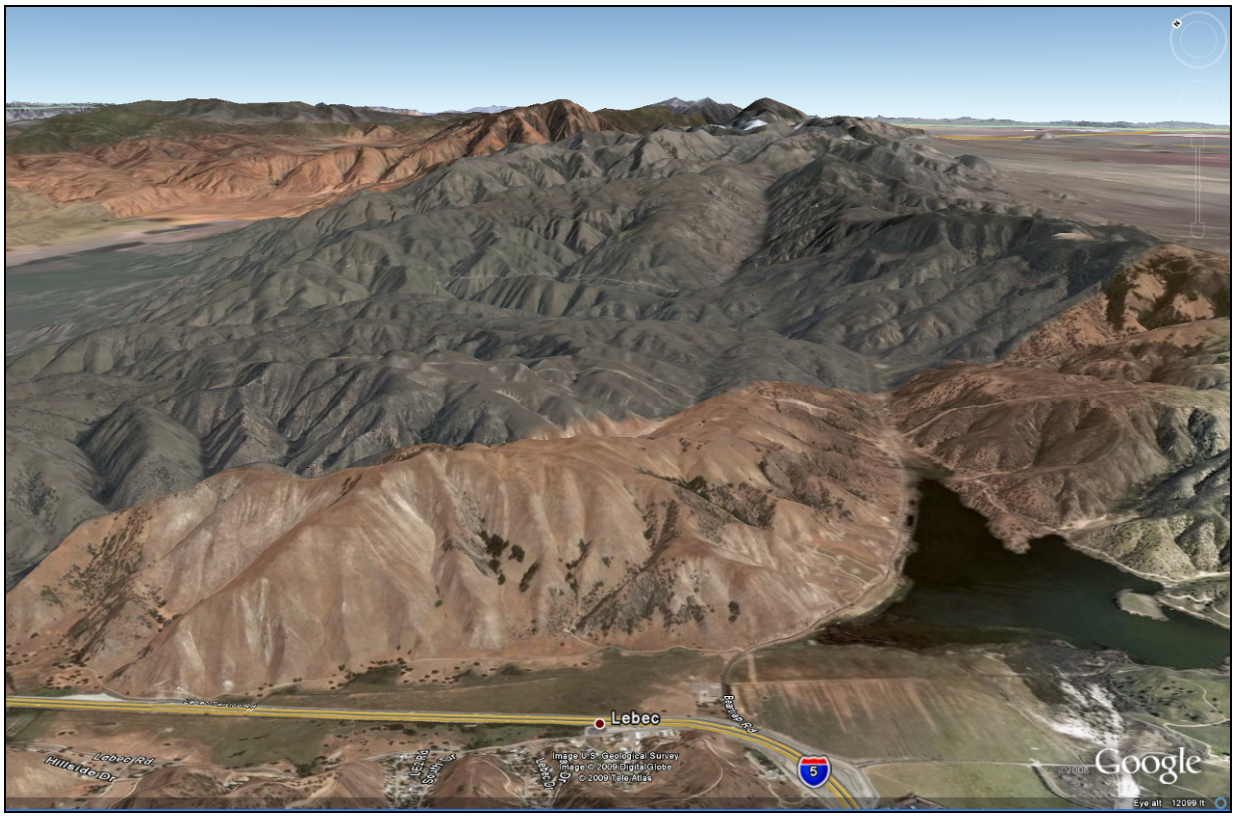


Figure 10. Perspective view looking north-east up Bear Trap Canyon from Castac Lake and Lebec.

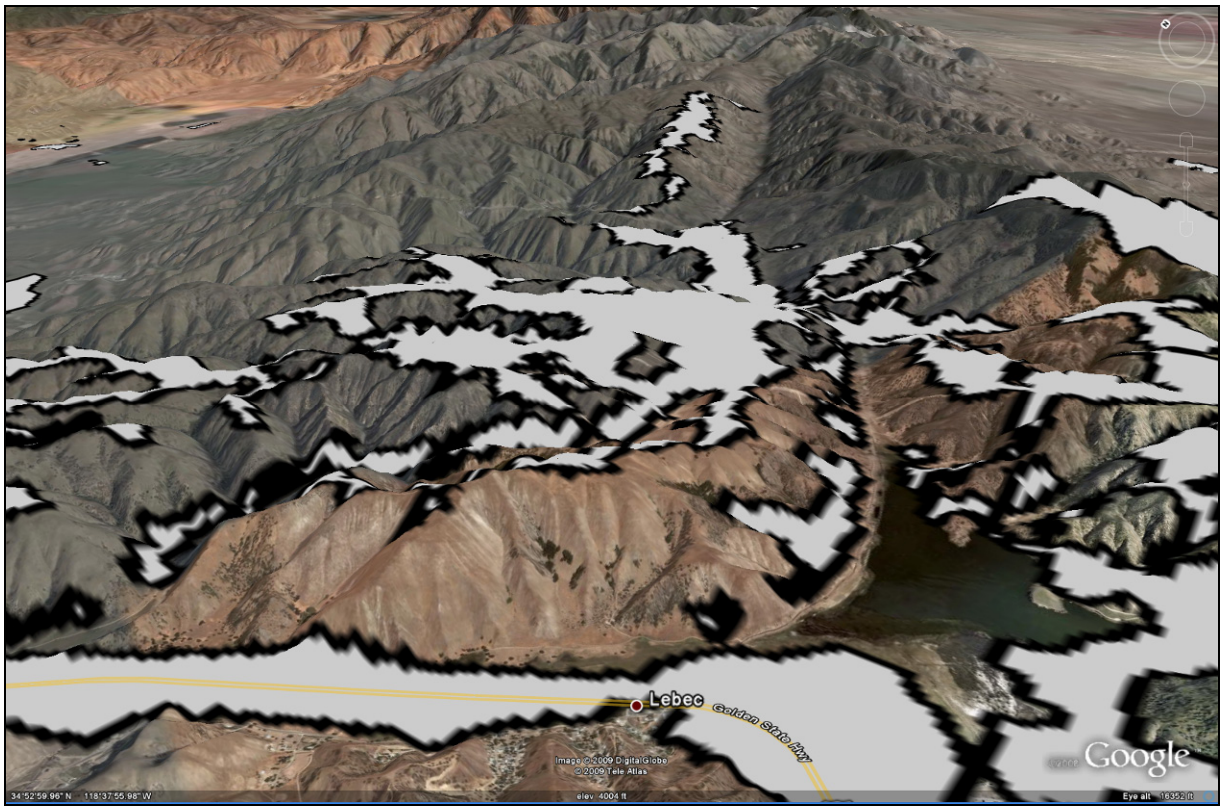


Figure 11. Perspective view looking north-east up Bear Trap Canyon from Castac Lake and Lebec with proposed Tejon Developments indicated by the grey overlay. From this perspective, the combined proposals for the "Grapevine Development", the "Tejon Mountain Village", and the "Centennial Development" present a significant intrusion and connectivity barrier to this habitat area and transition zone flyway.

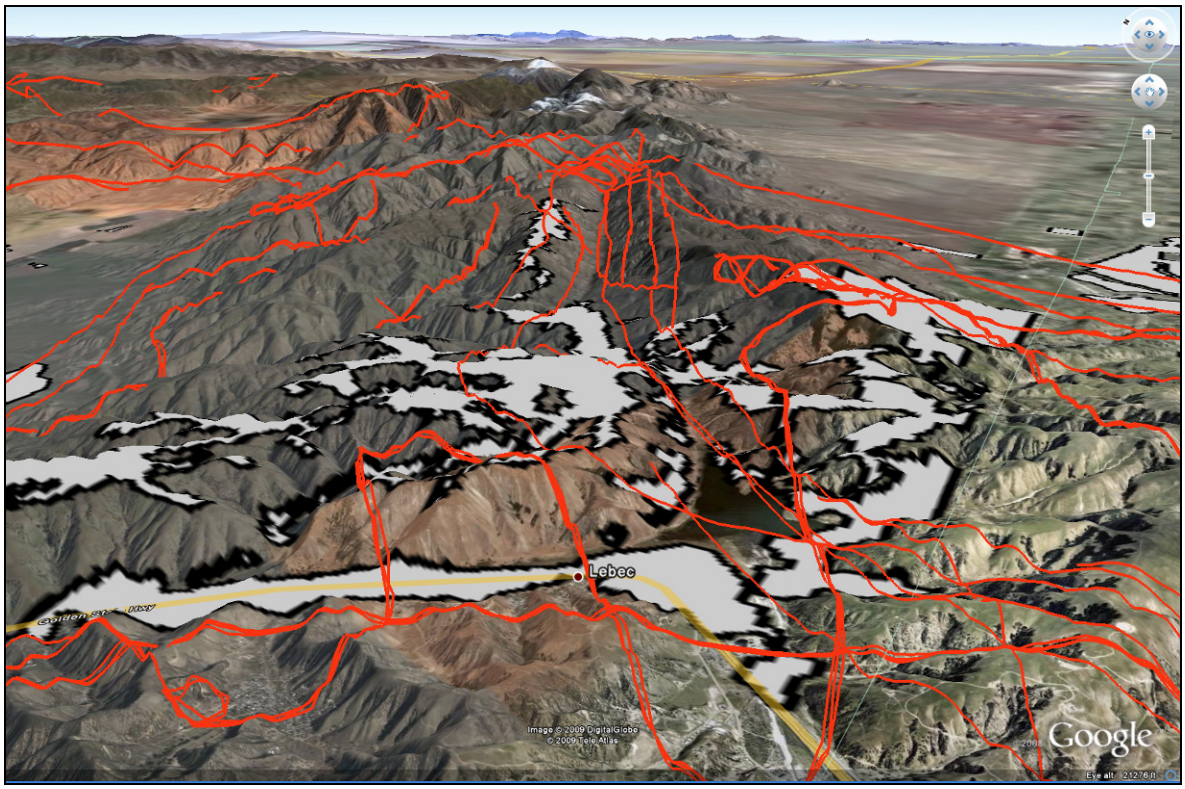


Figure 12. Perspective view looking north-east up Bear Trap Canyon from Castac Lake and Lebec with proposed Tejon Developments in grey and condor flight lines in red. As noted in the accompanying text for Figure 5, the red flight lines are general indications of flight routes, not precise locations. More precise location data is represented in Figure 7, GPS positions over Tejon.

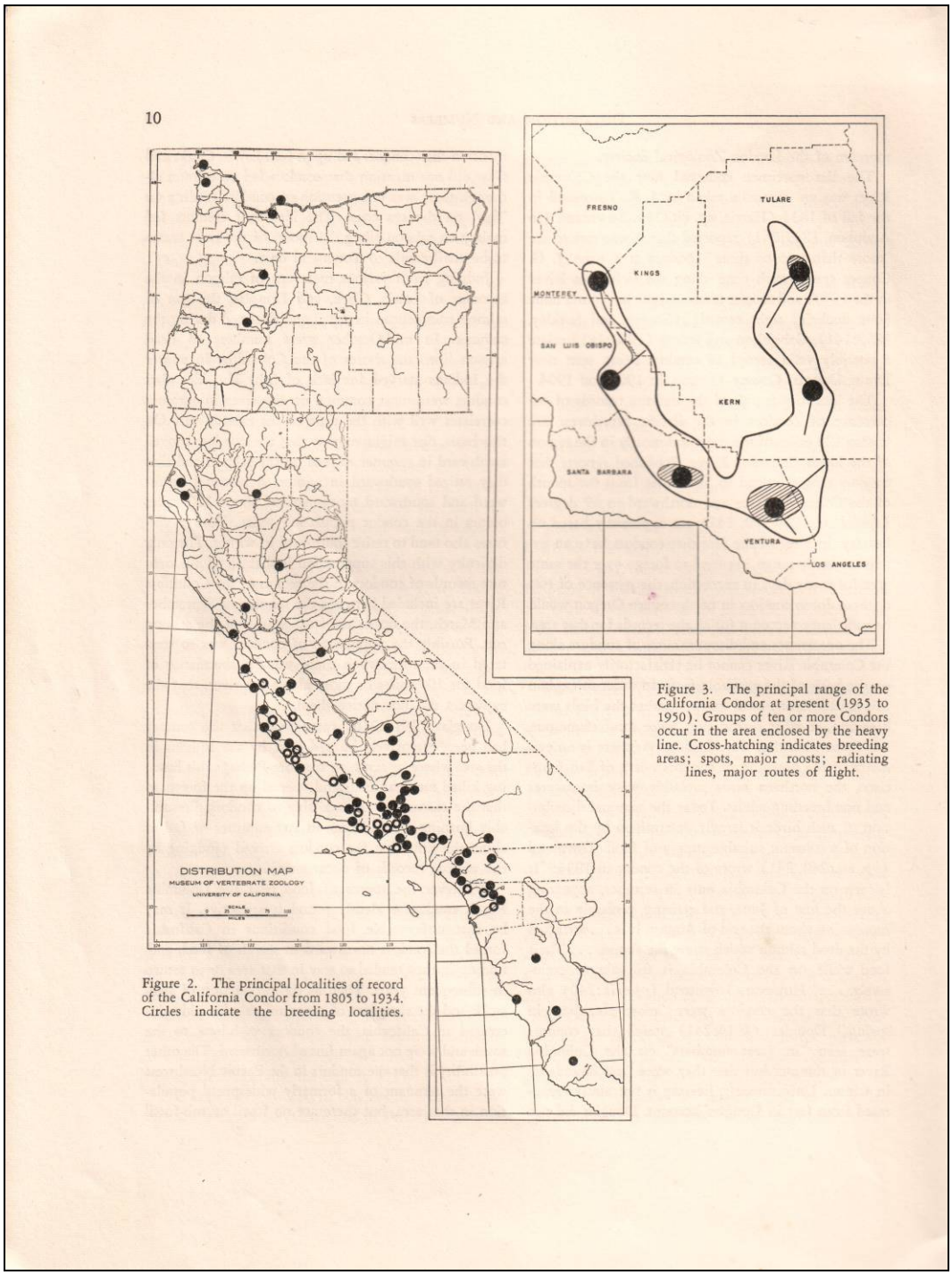


Figure 13. Condor map from Carl Koford's notes (1953, page 10). Note the general trend for flight lines to extend north-east from the Ventura nesting area to the Tejon feeding and roosting area shown in the inset map. The Tejon area flight patterns and habitat use is consistent with the flight line data (Figure 5) and the most recent GPS data (Figure 6).

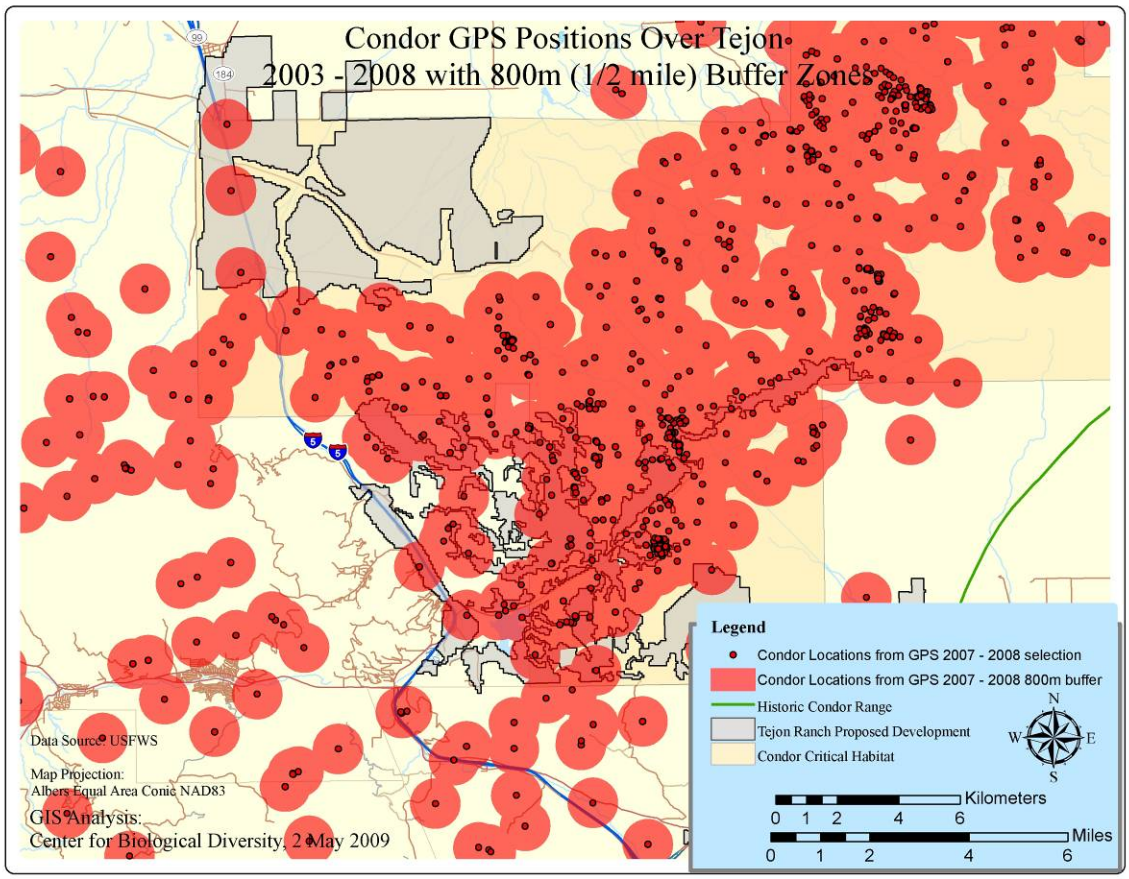


Figure 14. Condor Positions with ½ mile buffer. The high-accuracy GPS positions have been buffered with an 800 meter (1/2 mile) radius in this figure. There is longstanding precedence to protect nesting and other condor activity areas by areas ranging from 500 yards (0.28 miles) to 2.3 miles (see Text Box 1 for citations). While the exact buffer distances required in this case will require further study, the importance of the buffer concept is well documented.

Text Box 1. Human Disturbance and Protective Buffer Distances for California Condors as Recommended by Various Researchers and Agencies

Koford's statements on closures to protect nesting and roosting sites are found on pp 136-137 of his Audubon Research Report #4. 1953.
His most famous statement about the effects of disturbance by humans on nesting condors is found on p. 109.

"One man can keep a pair of condors from the egg all night or prevent the feeding of a chick for an entire day merely by exposing himself within 500 yards of a nest for a few minutes at one or two critical times of the day. Loud noises can alarm condors at distances of over one mile. Individuals or groups of persons moving about must keep at least one-half mile from condor nests in order to void disturbance of the parent birds."

Some of the documents relating to Forest Service closures in the Condor Information System:

00893CON
CARRIER, W.D. 1971.
HABITAT MANAGEMENT PLAN FOR THE CALIFORNIA CONDOR.
U.S. FOREST SERVICE, LOS PADRES NATIONAL FOREST, GOLETA, CALIFORNIA. 53 PP.
Procedures mentioned: Eliminate human activity within ½ mile of roosting and bathing sites.

01827CON
MULDOWNEY, B.K. 1977.
FOREST SERVICE PARTICIPATION IN SAVING THE CONDOR HABITAT.
IN: CALIFORNIA CONDOR--1977. P.P. SCHAEFFER AND S.M. EHLERS (EDS.). NATIONAL AUDUBON SOCIETY, TIBURON, CALIFORNIA. PP. 13-19.
Mentions closing or relocating 36 miles of trails or roads to protect condor habitat. No oil field activities within 1 ½ miles of a condor nest site. Mentions earlier ½ mile closure. Reports that was inadequate.

03080CON
U.S. FOREST SERVICE. 1976.
FOREST SERVICE ROAD USE REGULATIONS [CLOSING THE SLIDE MOUNTAIN ROAD TO ALL PUBLIC MOTOR VEHICLE TRAFFIC.]
DECLARATION NO. 53-1, DATED MARCH 25, 1976. 1 P.
One reason given for closure is "the necessity to protect Condor nesting sites from disturbance"

03083CON
U.S. FOREST SERVICE. 1977.
CONDOR SANCTUARY CLOSURES, LOS PADRES NATIONAL FOREST.

03101CON
U.S. FOREST SERVICE. 1980.
ORDER NO. 01-80-1. WILDLIFE HABITAT AREA CLOSURE. ANGELES NATIONAL FOREST [CONDOR NEST SITE].
SIGNED BY W.T. DRESSER, FOREST SUPERVISOR, ANGELES NATIONAL FOREST, AND DATED APRIL 6, 1980. PASADENA, CALIFORNIA. 2 PP.
This refers to the trail closure for the Red Rock nest site.

Sibley and Wilbur on Disturbance as found in:

03352CON
WILBUR, S.R. 1978.
CALIFORNIA CONDOR, 1966-76: A LOOK AT ITS PAST AND FUTURE.
N. AMER. FAUNA, NO. 72. U.S. FISH AND WILDLIFE SERVICE, WASHINGTON, D.C.136 PP.

Notes on disturbance by humans are found on pp. 34-39. Topics covered are: Flying condors; Roosting Birds; Feeding Birds; Nesting Condors.
Sibley's plotting of the location of active condor nest sites in relation to roads, trails and oil field activity and came up with (condensed) the following minimum distances:
0.8 miles from lightly used dirt roads; 1.2 miles from regularly used dirt roads; 2.2 miles from paved roads; 1.2 miles from oil wells shielded by sight and sound; 2.3 miles from oil wells in view.

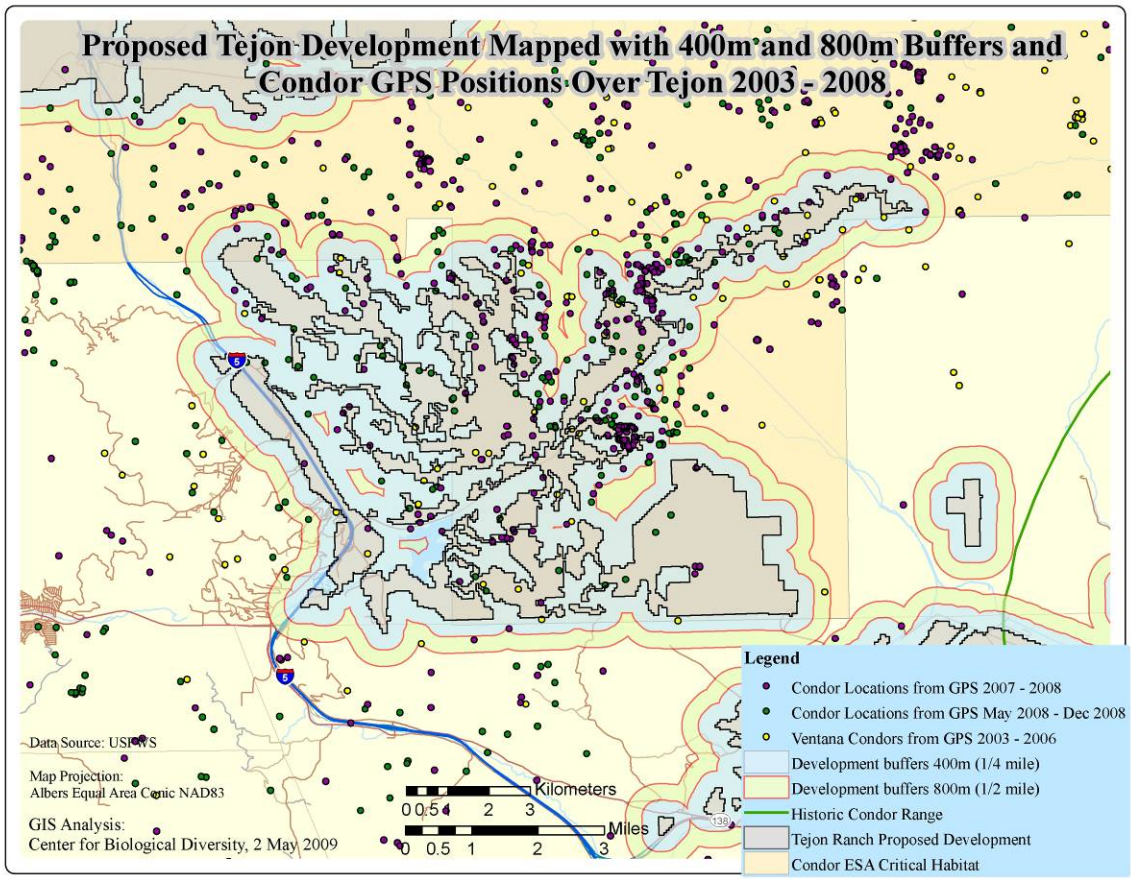


Figure 15. Proposed Tejon Ranch development areas with 400 meter (1/2 mile, shown in blue) and 800 meter (1 mile, in green) buffer extensions. The basic premise represented is the effect that a house and garden patch has a much larger ecological footprint than would be measured from the property lines alone.

Notes:

1) Far more of the condor ESA critical habitat is impacted when buffers are taken into account. The fragmented design of the proposed developments (i.e. linear areas with intermediate "open space") results in a deceivingly low impact when measured by area alone. In such cases, proposed development perimeter length may also be a good indicator of habitat impact.

2) The three proposed Tejon development areas begin to merge when buffers are taken into account, forming a more complete barrier across the WWF ecoregions, the transverse range, and the habitat corridor between nesting and feeding/roosting areas.

3) The number of conflicts between designated critical habitat and condor data points is increased when environmental buffers are taken into account. In this figure the condor data points are represented as simple points for visual clarity, however these points should also be buffered into circles (as in Figure 14) to more accurately quantify impacts associated with development in critical habitat.