July 10, 2019

VIA EMAIL & CERTIFIED MAIL, RETURN RECEIPT REQUESTED

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Ms. Margaret Everson
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RE: Sixty-Day Notice of Intent to Sue for Violations of the Endangered Species Act; Tecuya Project, Los Padres National Forest

Dear Madam and Sirs,

The United States Forest Service ("USFS") and U.S. Fish and Wildlife Service ("USFWS") are hereby notified that Los Padres ForestWatch, John Muir Project of Earth Island Institute, and the Center for Biological Diversity intend to file suit, pursuant to the citizen suit provision of the Endangered Species Act ("ESA"), 16 U.S.C. § 1540(g), and the Administrative Procedure Act ("APA"), to challenge the agencies' violations of the ESA in connection with the Tecuya Project in the Los Padres National Forest. The Project entails commercial removal of trees, including large trees and snags, at and around roosting sites that are critical for the survival of endangered California condors. The agencies failed to use the best available science in considering the impacts to condors, failed to rationally conclude that the Project was not likely to adversely affect the condor, failed to ensure against jeopardizing the continued existence of the condor, and

failed to reinitiate consultation in light of new information.

California condors rely on roost sites throughout their range for overnight resting after long-distance flights across the landscape, and for protection during inclement weather. Roosting sites are often located near important foraging grounds and breeding areas, and condors often return to the same roost sites year after year. California condors often spend the majority of their time perched at a roost, preening and conducting other maintenance activities. Roosts may also serve an important social function, as condors usually roost in groups.

A condor seen from Tecuya Ridge.

A condor roosting in the Los Padres National Forest.

I. Identity of the Organizations Giving Notice:

The name, address, and phone number of the organizations giving notice of intent to sue under the ESA are:

Los Padres ForestWatch
PO Box 831
Santa Barbara, CA 93102

John Muir Project of Earth Island Institute
PO Box 897
Big Bear City, CA 92314

Center for Biological Diversity
1212 Broadway St., #800
Oakland, CA 94612

II. Requirements of the ESA

Section 7 of the ESA requires each federal agency, in consultation with USFWS, to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or

adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2). "Action" is broadly defined to include actions that may directly or indirectly cause modifications to the land, water, or air; and actions that are intended to conserve listed species or their habitat. 50 C.F.R. § 402.02.

For each federal action, the federal agency must request from USFWS whether any listed or proposed species may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed species may be present, the federal agency must prepare a "biological assessment" to determine whether the listed species may be affected by the proposed action. *Id*. If the agency determines that its proposed action may affect any listed species or critical habitat, the agency must engage in "formal consultation" with USFWS. 50 C.F.R. § 402.14. To complete formal consultation, USFWS must provide the action agency with a "biological opinion" explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.

If USFWS concludes that the proposed action "will jeopardize the continued existence" of a listed species, the biological opinion must outline "reasonable and prudent alternatives." 16 U.S.C. § 1536(b)(3)(A). If the biological opinion concludes that the action is not likely to jeopardize the continued existence of a listed species, and will not result in the destruction or adverse modification of critical habitat, USFWS must provide an "incidental take statement," specifying the amount or extent of such incidental taking on the species, any "reasonable and prudent measures" that USFWS considers necessary or appropriate to minimize such impact, and setting forth the "terms and conditions" that must be complied with by the agency to implement those measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

Agencies must also reinitiate consultation on agency actions over which the federal agency retains, or is authorized to exercise, discretionary involvement or control . . "(b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered . . . ." 50 C.F.R. § 402.16.

After the initiation or reinitiation of consultation, the federal agency is prohibited from making any irreversible or irretrievable commitment of resources with respect to the agency action. 16 U.S.C. § 1536(d).

In fulfilling its obligation to ensure that its actions do not jeopardize the continued existence of any endangered species or destroy or adversely modify its critical habitat, the federal agency is required to use the best scientific and commercial data available. 16 U.S.C. § 1536(a)(2).

In addition, Section 9 of the ESA and its implementing regulations prohibit the unauthorized "take" of any endangered species of fish or wildlife. 16 U.S.C. § 1538(a)(1); 16 U.S.C. § 1533(d); 50 C.F.R. § 17.31. "Take" is defined broadly under the ESA to include harming, harassing, trapping, capturing, wounding or killing a protected species either directly or by degrading its habitat. *See* 16 U.S.C. § 1532(19).

III. Description of Forest Service and USFWS Action

The Forest Service approved the Tecuya Project ("the Project") on April 9, 2019, to authorize the logging and removal of trees and other vegetation across 1,626 acres of mixed-conifer and pinyon-juniper forest. Decision Memo ("DM") at 1, attached as Exhibit A. Tree and vegetation removal would be accomplished using a variety of techniques, including commercial logging. *Id*. at 6. The Project area extends deep into the forest, and two-thirds of it will occur in the rugged Antimony Inventoried Roadless Area far from human communities. *Id*. at 13.

The U.S. Forest Service produced a Biological Assessment for the Project, concluding that the Project may affect, but is not likely to adversely affect, California condors. Tecuya Biological Assessment ("BA") at 12, attached as Exhibit B. With respect to condor roosting habitat in the Project area, the BA states: "In general condors are active in the action area flying over it fairly often and roosting nearby occasionally" (BA at 11); "individual condors might roost relatively infrequently in the action area" (BA at 11); and "there are currently no known condor roosting sites within the action area." (BA at 12). With this information, the Forest Service initiated consultation with USFWS and that ESA consultation process concluded on January 28, 2019, with the USFWS issuing a letter of concurrence finding that the Tecuya Project is "not likely to adversely affect California condors" but only stating, with regard to roosting habitat: "California condor activity along the Tecuya Mountain ridgeline includes frequent fly-overs with the occasional stopover for temporary roosting." USFWS Tecuya Concurrence Letter at 2, 1, attached as Exhibit C.

In the Decision Memo, issued in April 2019, the USFS concludes that "[i]ndividual condors might roost relatively infrequently in the action area," that condor roosting in the project area is an "unlikely event," that "there are currently no known condor roosting sites within the action area," and that "all known roosting/nesting sites are approximately 20 miles away." DM at 9.

IV. The Forest Service And USFWS Did Not Address The Available Information Demonstrating The Importance Of Tecuya Ridge For Condor Roosting

The USFS and USFWS documents discussed above contrast starkly with the best available science which shows the presence of numerous condor roosting sites in the Project area.[1] As discussed in the April 19, 2018; September 10, 2018; and April 16, 2019, comment letters[2] from the undersigned organizations, as well as here, the groups signing this letter used the 2012 Cogan et al. study,[3] and USFWS data, to identify scores of roosting sites in the Project area, information that neither agency acknowledged, analyzed, or responded to. The USFWS is aware of this data—multiple USFWS staff are co-authors of the Cogan et al. study and the GPS data is in a

[1] A map of the roosting sites is attached as Exhibit D, and a Table of the roosting sites is attached as Exhibit E.

[2] Attached as Exhibits F, G, and H respectively

[3] Attached as Exhibit I

USFWS repository.[4] Moreover, "Joseph [Brandt, USFWS] provided the science base link to proofed gps data to the F[orest] S[ervice] biologist [for the Tecuya Project] in February [2018]." *See* USFWS email dated April 23, 2018, attached as Exhibit K.

Specifically, we described in our scoping comments how Cogan et al. (2012)—a study conducted in part by the USFWS to develop a method for delineating condor roosts using GPS tracking data—provides a pseudocode that can be used to develop a Python script that analyzes large GPS tracking datasets and identifies roost sites based on various criteria. These criteria are the following: a GPS record for a particular bird in the evening of one day and the next record for that particular bird occurring the next morning, both within 40 meters of each other, and the bird's logged ground speed must be less than 10 kilometers per hour. The location data provided with the first record of the second day was considered an approximate location of the roost site itself. Our Python script identified these roosts as a "Tier 1" roost.

We also included additional criteria regarding this pseudocode, such as its sensitivity to the accuracy of location data for the first GPS record for the second day of a roost event or the beginning of a roost event slightly after midnight. For example, the first record of the second day may have been slightly farther than 40 meters from the last record of the previous day, despite subsequent records being within this distance. Similarly, GPS data points may meet the ground speed requirement for four consecutive hours between midnight and 7:00 AM despite the last record of the previous day occurring outside of the 40-meter radius. This indicated a likely roost, but one that started just after rather than before midnight. Our modified Python script accounted for these rare anomalies, and any roosts delineated under these circumstances were categorized as a "Tier 2" roost (only three roosts were delineated under these circumstances).

Other cases involved outlier GPS records that were physically impossible given the time and distance difference between two records. For example, one GPS record occurred several kilometers from the previous GPS record, but the time difference between the records was only minutes. The following GPS record would then be located within proximity to the first record only minutes later. We used the maximum condor flight speed obtained from all datasets available to us to determine whether this difference in location was possible between those consecutive times. If it was not possible, the outlier record—presumably due to a temporary issue with the GPS tracker—was removed. If all other Tier 1 or Tier 2 criteria were met between GPS records, then the Python script would delineate this as a "Tier 3" roost.

Using the methods described above, we described in our scoping comments how condor tracking data provided by the USFWS indicate the presence of 40 roosts within the Project area or within 0.5 miles[5] of the Project area between December 2013 and June 2018. *See* Exhibits F and G. Furthermore, the same analysis of condor tracking data from July 2018 to December 2018

[4] Available at https://www.sciencebase.gov/catalog/item/53a1d33ae4b0403a441545c7 and https://www.sciencebase.gov/catalog/item/546f5ec5e4b0b935bc7586e0?community=California+Condor; see also Exhibit J, March 2019 USFWS Biological Assessment relying on same data

[5] We used "within 0.5 miles" to correspond with Standard 28 from the Forest Plan: "S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts."

delineated 10 additional roosts within the Project area or within 0.5 miles of the Project area. *See* Exhibit H. Finally, we used these methods to analyze the condor tracking dataset covering January 2019 to March 2019—the most recent dataset that has been made available to us by the USFWS[6]—the results of which include seven additional roosts within the proposed Project area or within 0.5 miles of the Project area. In total, we delineated 57 roosts within the proposed Project area or within 0.5 miles of the Project area between December 2013 and March 2019. *See* Exhibit E. Forty-six of these roosts met the Tier 1 criteria which were identical to the criteria used in Cogan et al. (2012).

Neither the Forest Service nor the USFWS mention, let alone address or analyze, these best available roost data.

Moreover, when evaluating the Antimony Inventoried Roadless Area in 2012, the U.S. Forest Service pointed out that the area was used "extensively" for condor travel and roosting. *See* Antimony IRA Evaluation at 138, attached as Exhibit L. Specifically, the U.S. Forest Service acknowledged: "The California condor (*Gymnogyps californianus*) uses Antimony extensively for travel and roosting as they soar on uplifted winds along the southern boundary of the San Joaquin Valley." *Id*. In addition, the Forest Service remarked: "Of particular importance in the Antimony unit are the high density of California condors and their regular flights from east to west along the north facing slopes of this mountain range. Reliable strong winds are crucial to condor movements and the winds blowing southward from the San Joaquin Valley that are lifted up by the San Emigdio Mountains provide excellent soaring conditions for the condor and are the reason this is an important historic condor area." *Id*. at 142. The BA and USFWS Concurrence ignore the Forest Service's prior conclusions, which are supported by more recent roosting data. They also ignore the USFWS' statement in the April 23, 2018, email that "all places condor roost must be completely avoided." *See* Exhibit K.

V. The Forest Service's And USFWS' Violations of the ESA And APA

Neither the Forest Service nor the USFWS properly account for the scientific information showing the presence of numerous condor roosting sites in, or within 0.5 mile of, the Project area. Consequently, the Forest Service's Biological Assessment and Decision Memo, as well as the USFWS' concurrence letter, are not based on the best available scientific information, do not offer rationally based conclusions regarding Project harm to condors/condor habitat, and thereby fail to ensure the protection of important condor roosting sites/habitat in the Project area. The USFS and USFWS decisions and conclusions with respect to the Project's impacts to condors thus violate the ESA, and are arbitrary and capricious under the APA. Further, the ESA requires reinitiation of consultation when, as here, "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered"; not only have the USFS and USFWS ignored the 2018 and previous condor data as to the Project area, they are also ignoring the new 2019 condor data showing the presence of condor roosting habitat in or near the Project area.

[6] This data was not available to us until after the DM was issued.

1. The agencies failed to use the best available science in considering the Project's impacts to condors

The roosting data we submitted with our comments is the best available science regarding roosting sites in the Project area. It is even based on the USFWS' own GPS tracking data. Yet neither the USFS nor the USFWS acknowledge or account for this data and thus are in violation of the ESA's best available science mandate.

2. The agencies failed to rationally conclude that the Project was not likely to adversely affect the condor

Research shows that condor roosting sites are highly susceptible to human disturbance, and even just human presence. As condor expert Carl Koford noted[7]:

> The amount of disturbance which a condor will tolerate before flushing decreases rapidly late in the day. For example, I stationed myself below a roost cliff at 4:10 p.m. when 18 condors were there. Six soon departed. The other remained until 5:30 p.m., but by 5:55 p.m. only seven remained and only two condors roosted there. On previous days more than a dozen roosted there. Many other times I had a similar experience. Mild disturbances which will not prevent condors from perching or even from drinking may prevent them from roosting. The disturbance threshold for roosting seems to be lower than that for any other daily activity of condors…. One man, by disturbing the birds at critical places late in the day, can prevent roosting over an area of several square miles.

Koford at 39, attached as Exhibit M.

Moreover, even according to the U.S. Forest Service: "Road building, use of heavy equipment, blasting, fracturing of oil wells, and increased human activity have had a major effect on condor disturbance within the range of sound and/or sight. Condors are quite susceptible to disturbance by loud noise, and construction noise travels long distances."[8]

Condor sensitivity to disturbance is why the USFWS stated in April 2018, with respect to the Tecuya Project, that "all places condor roost must be completely avoided." *See* Exhibit K.

Here, while the Forest Service acknowledges its Forest Plan Standard 28 that requires a 0.5 mile buffer around known condor roosting sites to protect the sites from disturbance, the Biological Assessment and Decision Memo incorrectly state that there are no known roosting sites within the Project area. The USFWS concurrence letter commits the same error. As described above, however, based on U.S. Fish & Wildlife Service data, 57 condor roosting sites occur in, or within 0.5 mile of, the Project area. The agencies' failure to account for theses roosting sites and then protect them shows that they have no rational basis to conclude that the Project is not likely to

[7] Koford, C. B. 1953. The California condor. Natl. Audubon Soc., Washington DC. Res. Rep. No. 4. 154 p.

[8] U.S. Forest Service, 1971. Habitat Management Plan for the California Condor, at 30.

adversely affect the condor.

Furthermore, the agencies acknowledge, but do nothing to account for, the harm caused by the Project's logging of snags, which are well known to serve as important condor roosting habitat. For example, as the U.S. Forest Service's Species Account for the condor states: "Potential threats to California condors from resource management activities on National Forest System lands include modification or loss of habitat or habitat components (primarily large trees) . . . ."[9] The agencies failure to address habitat destruction caused by logging of snags and large trees is particularly egregious here because the Project allows snags to be removed at the discretion of the logging operator, making it unclear whether any snags at all will remain in the Project area. ("Large snags would be retained…however, safety at the discretion of the operator, may limit retention of snags." DM at 9).

Finally, while the Project documents speak generically to a diameter limit of 21 inches for live trees, that limit is not absolute, and there are contradictory statements within the Project documents suggesting that this limit may not be a limit at all.[10] Thus, not only can small and medium trees that are important to condors be logged, so too can large snags and large live trees, leading to the loss of roosting sites and/or roosting habitat. Importantly as well, even if a roosting tree itself does not get logged, it is harmful to log the surrounding area (such as medium and small trees) because the integrity of the roost site as a whole will be lost, and as noted above, the mere presence of logging/human activities can render a roosting site useless. The agencies' failure to account for these harms to the ignored roosting sites again shows that they have no rational basis to conclude that the Project is not likely to adversely affect the condor.

3. The agencies failed to ensure against jeopardizing the continued existence of the condor

The Forest Service and USFWS failure to procced appropriately under the ESA and APA also means they have failed to obtain a required biological opinion and thereby failed to insure that the Project is not likely to jeopardize the continued existence of condors. Because USFWS has failed to provide the Forest Service with a legally valid Biological Opinion, and failed to issue a valid "not likely to adversely affect" finding/concurrence, the Forest Service has failed to comply with Section 7 of the ESA. Furthermore, because formal consultation on the Project has not been completed, the Forest Service is in violation of Section 7(d) of the ESA for making irreversible and irretrievable commitments of resources through its Decision Memo implementing the Project.

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[9] Species Account, attached as Exhibit N

[10] For example, the DM contains the following contradictory statements: (1) "A part of the project is within the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule, generally only smaller trees (21 inches diameter breast height or less) would be cut or removed within the IRA. Larger trees may be cut or removed within the IRA for safety or operability reasons." (2) "The project overlaps 66 percent of the project area with the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule and the Forest Plan only smaller trees (21 inches diameter breast height or less) would be cut or removed for safety or operability reason." (3) "Trees would be removed throughout all diameter classes and would include the removal of commercial trees."

4. The agencies failed to reinitiate consultation in light of new information

As noted above, new 2019 roosting data became available from the USFWS recently, this information demonstrates that the Project may affect condor roost sites in a manner and to an extent not previously considered, and therefore consultation must be reinitiated to address this new information. 50 C.F.R. § 402.16(b).

VI. Conclusion

For the above stated reasons, the U.S. Forest Service and USFWS have violated and remain in ongoing violation of Section 7 of the ESA, as well as the APA. If these violations of law are not cured within sixty days, we intend to file suit for declaratory and injunctive relief, as well as attorney and expert witness fees and costs. The undersigned organizations prepared this notice letter based on good faith information and belief after reasonably diligent investigation. If you believe that any of the foregoing is factually erroneous or inaccurate, please notify us promptly.

It is our practice to pursue negotiations whenever possible. In keeping with this policy, we invite the Forest Service to contact us to discuss the issues raised in this notice.

Sincerely,

Justin Augustine
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1212 Broadway, Suite 800
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EXHIBIT A

Decision Memo

Tecuya Ridge Shaded Fuelbreak Project

USDA Forest Service
Mt. Pinos Ranger District, Los Padres National Forest
Kern County, California

Background

The Tecuya Ridge Shaded Fuelbreak Project consists of approximately 1,626 acres of natural timbered stands and brush fields that were identified by the Mt. Pinos Community Wildfire Protection Plan and the Los Padres National Forest Strategic Fuelbreak Assessment as priority treatment areas. Forest Service specialists identified forested stands within the project area that currently exhibit stand structures that are conducive to stand-replacing wildfire events. Past fire suppression activities have led to unstable conditions in the mixed conifer and pinyon-juniper stands by allowing widespread accumulation of fuels in the form of litter accumulations, coarse woody debris, and understory growth of shrubs and conifer regeneration (Goforth and Minnich 2007). The existing understory, dense crowns, understory fuels ladders, existing fuel loads, and continued periods of drought place the stands at risk from wildfire.

Treatment areas are strategically placed around communities within the wildland-urban intermix: Pine Mountain Club, Pinon Pines Estates, Lake of the Woods and Frazier Park, California. Treatment areas are also in strategic locations that connect to past and future treatment areas on both public and adjacent private lands.

Since 1998, there have been 15 wildfires within the Tecuya treatment areas. Approximately 67 percent of the fire starts were caused by human-related activities. Although fires can start throughout the entire year, the majority of fire starts occur in August and September. While all of these starts were fully suppressed at less than 10 acres, there have been a number of large fires over 1,000 acres within or adjacent to the project area (USGS 2017)[1]. See table 1 for fires over 1,000 acres.

Table 1. Fires over 1,000 acres within or adjacent to the project area

Fire Name	Year	Acres
Gorman	2005	2,439
Ridge	2006	2,486
Post	2010	1,454
Grand	2013	4,527

[1] References are available at: www.fs.usda.gov/main/lpnf/landmanagement/planning or are on file at the Mt. Pinos Ranger District in Frazier Park, California.

On the Mount Pinos Ranger District we have been working with local individuals and groups via efforts such as the Mt. Pinos Communities Wildfire Protection Plan to establish priorities, cooperate on activities, and increase public awareness of and participation in site-specific projects such as the Tecuya Ridge Shaded Fuelbreak Project.

Location

The project is located on the Mount Pinos Ranger District. The project runs along Tecuya Mountain, which overlooks the communities of Lebec, Frazier Park, Lake of the Woods, Pine Mountain Club and Pinon Pine Estates. The western boundary is along the private property line near San Emidgio Canyon, and the eastern boundary is at the Forest boundary just above the community of Lebec near the major transmission lines. The legal description for the project is T9N, R19W, Sections 18, 28, 29, 30, 31, 32, 33 SBM; T9N, R20W, Sections 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29 SBM; T9N, R21W, Sections 13, 14, 15, 23, 24 SBM; Kern County, California.

Figure 1. Tecuya Ridge Shaded Fuelbreak Project Vicinity Map

Purpose and Need

Purpose and need for action is generated by identifying the departure of the existing condition from the desired condition.

Existing Condition

Stands in the project area were determined to be overstocked and therefore at risk of loss to insects and disease. Stand exams taken in the project area, coupled with walk-throughs by Forest professionals and data from other sources, confirm that existing stand density and structure put the area at risk from insects and disease, as well as from wildfire. Stand exams show that the project area average mixed conifer stand has up to 480 trees per acre, greater than one-inch diameter at breast height. High stocking levels, overlapping crown canopies, and a dense understory, contribute to resource competition, leaving trees in the project area at risk to more insect attack.

The project area contains approximately 1,541 acres of mixed conifer and pinyon-juniper dominated stands. These stands are experiencing elevated levels of bark beetle activity, pinyon ips (*Ips confusus*) and California fivespined ips (*Ips paraconfusus*), and associated increasing tree mortality that has been exacerbated by the ongoing drought. The project area was identified in the National Insect and Disease Forest Risk Assessment of 2012 (NIDFRA) as being at risk from both of these beetles. According to the risk rating models used by the Risk Assessment, the areas proposed for treatment in this project are categorized as high risk for pests that could destroy over 25 percent of basal area due to current forest conditions. This mortality combined with stand structure and drought is increasing the risk of a stand-replacing wildfire.

In addition, modelling of insect and disease risk for the proposed treatment units using the Forest Vegetation Simulator shows a moderate to high risk of mortality from beetle infestation. According to Oliver (1995), Jeffrey and pinyon pine trees, in stands where basal areas are over 120 square feet per acre, are at imminent risk of bark beetle-associated mortality. The average existing basal area in the pine and mixed conifer stands is slightly over 120 square feet per acre with many stands well in excess of that threshold. Treatments that reduce stocking or densities below this threshold significantly reduces risk and potentially high mortality if bark beetles invade treated stands. Prevention is not guaranteed, but improves the chances that bark beetles would bypass treated stands in search for more preferable conditions.

Within the project area there are approximately 85 acres of sagebrush-scrub. The extreme drought in recent years has increased the risk to the project area and some drought-related mortality in the sagebrush-scrub areas is evident. This drought mortality adds dead fuels to the landscape. The sagebrush-scrub vegetation type has a natural historic fire return interval of 35 to 100 years. However, due to extensive public use, infrastructure, and commuter pass-through, the project area burns more frequently than this. The results of these frequent fires are an inability to support the ecological health of sagebrush-scrub, and an increase of risk to fast-moving wildland fires.

Desired Conditions

In the long-term, the desired condition for the national forest land would be to: (1) create forests more resistant to the effects of drought, insect and disease outbreaks and stand killing crown fires; (2) encourage tree recruitment that contain a species mix more like pre-settlement composition, (*i.e.,* with a higher representation of shade-intolerant species such as ponderosa pine that have

declined during the period of fire suppression); (3) recreate stand densities more like those of the pre-suppression era; and (4) encourage a stand structure that emphasizes large-diameter trees.

The intent of the Mt. Pinos Community Wildfire Protection Plan is to make communities safer from wildfire. The plan highlights the overall threat and risks of wildfire and provides the basis for pre-suppression strategies to reduce the impacts of a wildfire. The plan identifies zones within the wildland-urban interface. The area where structures are located is called the "defense zone" (area buffered 500 feet from structures). If a fire occurs or burns into this zone, structure loss is likely without quick aggressive structure protection. The "threat zone" is adjacent to the "defense zone" (area buffered by 0.25-mile buffer around the defense zone). This zone needs specific and intense management and treatments. The plan recommends establishing and maintaining fuelbreaks and prescribed burning within this zone to reduce the threat to the defense zone (Walsh 2006).

The goals of the 2006 Mt. Pinos Community Wildfire Protection Plan fuel reduction strategies are:

- Design fuel modification to provide a buffer between developed areas and wildlands.
- Design and distribute treatments to increase the efficiency of firefighting efforts and reduce risks to firefighters, the public, facilities, structures, and natural resources.
- Utilize planned prescribed burns at strategically placed area treatments.

Purpose of the Project

The purpose of the project is to provide safe and effective locations from which to perform fire suppression operations, to slow the spread of a wildland fire at these strategic fuelbreak locations, and to reduce the potential for the loss of life, property, and natural resources. Additionally, this project would undertake timber stand improvement activities such as thinning to help reduce the existing stand densities. Thinning would help increase the forest's resilience to insects and diseases by lowering the amount of trees that are competing for limited resources such as water.

Need for Action

The need for the project is based on the high likelihood of wildland fire and a corresponding threat to communities and infrastructure that could occur adjacent to the area where the fuelbreak would be created and maintained under this proposed action. By managing for this need we would also be managing for the health of the forest by reducing competition and returning the stands to a state to where they are less likely to be lost by a stand replacing fire.

- There is a need to reduce surface and ladder fuels, reduce fire intensities and to make the stands more resilient to wildfire. Surface-fuel-loading levels, trees that are dead and dying due to insect and disease, and natural forest succession make stand-replacing fire an ongoing risk to the landscape. Removing standing and down fuels reduces fuel loading and fuel continuity, and increases our ability to directly suppress fire in a safe and efficient manner.

- There is a need to reduce the stocking levels and competing vegetation to more closely resemble historic levels to improve resilience of these stands to insect and drought-related mortality.

- There is a need to strategically place fuel breaks that are cost effective and complement planned and completed treatments on adjacent private lands.

- There is a need to maintain or improve resilient forest conditions so the area can return to prior conditions and function after disturbance (USDA Forest Service 2011). Resilient forests are those that not only accommodate gradual changes related to climate, but tend to return toward a prior condition after disturbance, either naturally or with management assistance (Millar et al. 2007).

- There is a need to maintain fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fire and flood.

Proposed Action

Reduction in stand density, competing vegetation, and fuels are proposed on an estimated 1,626 acres of National Forest System lands within Mt. Pinos Place Management Area. The project area has been identified within the Mt. Pinos Communities Wildfire Protection Plan and within the Los Padres National Forest Strategic Fuelbreak Assessment as strategic for future wildfire and prescribed fire management.

The proposed action would create a variable-width, shaded fuelbreak, along Tecuya Ridge in order to alter existing stand structure, reduce fuel loading, and protect local communities and provide for firefighter safety. To achieve this, various types of vegetation treatments are proposed. Table 2 displays treatment acres by various stand types:

Table 2. Treatment by stand type

Stand Type	Treatment	Acres
Mixed Conifer	Hand Cut/Hand Pile	467
	Mechanical Treatment	828
Pinyon Juniper	Hand Cut/Hand Pile	54
	Mechanical Treatment	192
Sagebrush-scrub	Mechanical Treatment	85

Treatments would include a combination of mechanical thinning, mastication of brush/smaller trees, and hand treatments such as hand thinning, brush cutting, pruning, and piling of material. Pile burning and jackpot burning will be used to reduce fuel loads after thinning or mastication activities.

Mixed conifer and pinyon juniper stands would be thinned to a range of 40 to 80 square feet basal area per acre. The reduction to this level would promote forest health, and create an effective shaded fuel break to assist in fire suppression. Trees would be removed throughout all diameter

classes and would include the removal of commercial trees. Residual trees would be selected for vigor; however, larger Jeffrey pine would be retained per Los Padres National Forest Land Management Plan (Forest Plan) direction unless they pose a hazard or are infected with dwarf mistletoe. All black oak would be left unless they pose a hazard. Early seral species[2] would be a priority to leave when selecting residual trees. Timbered stands with slopes generally greater than 35 percent would be mostly hand thinned. Activity fuels will be either lopped or scattered or hand piled depending on conditions such as slope. Hand piles would be burned.

Areas of sagebrush-scrub would be treated by a combination of mastication and hand treatments such as brush cutting, pruning and piling of material. Slopes generally greater than 35 percent would be hand treated and any piles created would be burned. Up to 85 to 95 percent of this area would be treated as determined by the project manager.

The most cost efficient and effective treatments within each stand or brush field would be chosen based on timing, equipment availability, and post treatment results, but would generally be implemented as follows:

- Stands less than 35 percent slope, with viable amounts of accessible commercial-sized material, would be mechanically harvested using feller bunchers and rubber-tired or track-mounted log skidders to remove whole trees to landings.
- Stands less than 35 percent slope, and that do not have a viable amount of commercial-sized timber, or are not accessible, would be treated by mastication.
- Stands less than 35 percent slope that consist primarily of an over-abundance of smaller trees and shrubs would be masticated.
- Existing and operations-generated slash, small trees, and shrubs would be tractor piled or masticated with a track-mounted masticator. Mastication or tractor piling would occur shortly after thinning is completed. Post-harvest machine piling and burning of piles would occur as necessary to reduce surface fuels to less than 10 tons per acre. Mastication may be substituted for tractor piling where surface fuels can be more effectively treated by this method and where maintaining or increasing soil cover is a higher priority.
- Timbered stands and sage scrub fields with slopes generally greater than 35 percent slope would be cut and either scattered, or hand piled depending on conditions such as slope. Hand piles would be burned.
- Sagebrush-scrub areas less than 35 percent slope would be treated using a masticator. Areas where slopes generally exceed 35 percent slope would be hand treated, piled, and burned.
- The removal of hazard trees (live and dead) of all sizes would occur along utility lines, roads, trails and landings to provide for safety of woods workers and public throughout project implementation, except where restrictions for removal apply.
- A part of the project is within the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule, generally only smaller trees (21 inches

[2] Jeffrey and pinyon pine.

diameter breast height or less) would be cut or removed within the IRA. Larger trees may be cut or removed within the IRA for safety or operability reasons. No new road construction or re-construction is proposed under this project.

Design Features

Project design features are elements of the project that are applied in treatment areas. These features are developed based on Forest Plan direction and site specific evaluations in order to reduce or avoid negative impacts of the proposed action. Project design features associated with this project are in Appendix A.

Decision

It is my decision to proceed with the Tecuya Ridge Shaded Fuelbreak Project as described in the Proposed Action and associated design features. My decision will maintain or improve resilient forest conditions within the shaded fuelbreaks which are located near the local communities/infrastructure by reducing overstocking, reducing surface/ladder fuels, decreasing fire intensities and making the stands more resilient to disturbance (i.e. bark beetle, drought, and wildfire).

I recognize and acknowledge there are concerns from the public about impacts to wildlife, the Antimony IRA, and the commercial sale of timber and other wood products. In arriving at my decision, I carefully assessed the potential impacts to wildlife from the project on pages 8-12 of this Decision Memo. To reduce or avoid impacts to wildlife, such as the California condor, I have included project design features that will be applied during implementation. A concurrence letter was received by the U.S. Fish and Wildlife Service on October 4, 2018 stating that the proposed actions are not likely to adversely affect the California condor. As a result, I am confident that improving the health and resiliency of forest vegetation within the project area will not imperil species of concern.

Potential impacts to the Antimony IRA are disclosed on pages 13-14 of this Decision Memo. An Amendment to the Forest Plan was signed by the Forest Supervisor in October 2014. As part of this Amendment the Forest re-evaluated the Antimony IRA to decide if any changes to the IRA zoning needed to occur. It was decided not to change the land use zoning to recommended wilderness specifically since “recommending wilderness adjacent to the communities and within wildland urban interface could limit the possibilities for vegetation management activities and the establishment and management of fuel breaks for community protection”. On October 12, 2018, the Deputy Regional Forester signed a Decision Memorandum concurring that the Tecuya Ridge Shaded Fuelbreak projects fits within 36 CFR 294.13(b)(1)(ii) and is consistent with the 2001 Roadless Rule.

My decision also provides the opportunity to utilize commercial means to efficiently and cost effectively meet project objectives where it can be applied. The sale of timber and other wood by-product is not part of the purpose and need for the project, and would not change the treatment outcome. Rather, it’s another tool available for utilization within a portion of the project to help move that area toward forest health desired conditions. Though the value of the timber may be considerably less than the cost of the treatments, any cost offset would be beneficial to the public by reducing the overall cost of the project.

This action is categorically excluded from documentation in an environmental impact statement (EIS) or an environmental assessment (EA). The applicable category of actions is identified in agency procedures as 36 CFR 220.6(e)(6) "Timber stand and/or wildlife habitat improvement activities that do not include the use of herbicides or do not require more than 1 mile of low standard road construction."

As stated in 36 CFR 220.6(b), *the mere presence of one or more of the resource conditions does not preclude use of a categorical exclusion (CE). It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determine whether extraordinary circumstances exist.* This category is applicable because the evidence presented in the project record and briefly described in each resource condition below, demonstrates that the actions in this decision and the degree of the effects on the resource conditions result in no extraordinary circumstances, therefore it does not warrant further analysis and documentation in an EA or EIS.

Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species

Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, and Forest Service sensitive species were reviewed.

Terrestrial Wildlife

A biological assessment and biological evaluation was completed for wildlife (Malengo, 2018). An official species list for this project (Consultation Code 08ESMF00-2018-SLI-1969) was generated on April 26, 2018. No critical habitat for any terrestrial wildlife species, including the California condor, has been identified for the Tecuya Ridge Shaded Fuelbreak Project (Project Record, Wildlife BA. Table 1). One federally listed terrestrial species, California condor, is within range of the project area and possibly contains occupied habitat.

From the Regional Forester's list of Sensitive Species for Region 5 (USDA 2104), six wildlife species (Project Record, Wildlife BE. Table 1) have been identified in the project area. They are: California spotted owl, Northern goshawk, Fringe-myotis bat, Mt. Pinos lodgepole chipmunk, Yellow-blotched ensatina salamander, and Monarch butterfly. The Monarch butterfly has a determination of *no impact* because the project area contains low suitability of breeding habitat. This species will not be discussed further.

No extraordinary circumstances exist with respect to threatened and endangered species listed above and it was determined that the project *may affect, but is not likely to adversely affect* the California condor based on the following rationale:

- The project area does not contain optimal nesting or foraging habitat. In general condors are active in the project area flying over it fairly often and roosting nearby occasionally. The closest previous nests (both were active in 2017) are about 20 miles away near Bitter Creek National Wildlife Refuge and the Tehachapi Mountains.

- Individual condors might roost relatively infrequently in the action area and there are no communal or commonly-used nests (J. Brandt, pers. comm.). The project area is within the Bitter Creek/El Cajon flyway(s) and the Fish and Wildlife Service is relatively unconcerned about thinning projects in this area because the potential for effect on condors would be relatively minor.

- Noise and smoke associated with thinning, burning, and mastication have only minor potential to alter normal flight or roosting patterns of condors within or adjacent to the project area.

- Since all known roosting/nesting sites are approximately 20 miles away, and condors are mobile, high-flying, and able to move away from any incidental smoke, extensive dispersal of the small amount of smoke expected from pile burning would have minor effects. In the unlikely event condors do use the project area for nesting or roosting prior to implementation or ongoing maintenance of the fuelbreak, disturbance to these individuals would be avoided or minimized by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts (Forest Plan Standard 28). In addition, activities would cease if California condors were observed in the project area during implementation or maintenance and the U.S. Fish and Wildlife Service would be notified.

- Large snags would be retained (Forest Plan Standards 14, 15, 17), however, safety at the discretion of the operator, may limit retention of snags. Although there are currently no known condor roosting sites within the action area, snag removal could reduce roosting structures. However, larger Jeffrey pine would be retained per Forest Plan direction unless they pose a hazard or are infected with dwarf mistletoe as well as all black oak.

- The project would benefit California condors by treating fuels to help prevent large, high intensity stand replacement wildland fire that could eliminate roosting habitat over a larger area. The proposed action might improve condor foraging habitat by creating a more open area that facilitates finding and catching prey by birds like condors that are dependent upon sight for locating food.

- Forest Plan Standards, as stated in the project design features, Appendix A, numbers 11-14, 16-19, 22-25 are designed to mitigate effects to the California condor.

No extraordinary circumstances exist with respect to sensitive species listed above and it was determined that the project *may affect individuals but is not likely to result in a loss of species viability in the planning area, nor cause a trend toward federal listing for the species*, for California spotted owl, Northern goshawk, Fringe-myotis bat, Mt. Pinos lodgepole chipmunk, Yellow-blotched ensatina salamander based on the following rationale:

California Spotted owl (CSO)

- Although protected activity centers (PACs) haven't been formally designated, the Los Padres National Forest performed a California spotted owl habitat analysis within and adjacent to the project area boundary (WL BE, Figure 1) using California Wildlife Habitat Relationships (Zeiner et al. 1990). Using this mapped suitable habitat, nest stands

and the best available habitat in a contiguous and compact arrangements over 300-acres (0.39-mile radius) are outside of the project area boundary.

- The majority of CSO suitable habitat falls outside the project area, there is some overlap between suitable habitat and the project area boundary along the upper north-facing slopes (WL BE, Figure 2). Currently, within the project area there are no known spotted owl nests or spotted owl territories identified in the Statewide California Department of Fish and Game database. There are also no recorded sightings of spotted owl presence within the project area.

- Although limited reproductive habitat is present in the proposed project area, noise and smoke generating activities that occur within or adjacent to suitable spotted owl habitat have the potential to disturb spotted owls, especially nesting individuals. Breeding season surveys for nesting activity are recommended prior to implementation to determine if spotted owls are nesting within the project area.

- In the event a spotted owl nest is found, a limited operating period prohibiting activities within approximately 0.25 miles of the nest site, or activity center where a nest site is unknown, would be maintained during the February 1 through August 15 breeding season. This limited operating period would be applied annually thereafter, as necessary, unless surveys confirm that the owls are not nesting.

- Reducing tree density and removing hazardous fuels would improve forest health and reduce risk from wildfire, thus protecting adjacent high-quality spotted owl habitat against high-intensity stand-replacing fire in the long run. While fire promotes heterogeneous forest landscapes shown to be favored by owls, high severity fire may create large canopy gaps that can fragment the closed-canopy habitat preferred by spotted owls. (Eyes et al. 2017). Forest Plan Standards listed in the design features for wildlife are designed to maintain or enhance habitat conditions.

Northern Goshawk

- The northern goshawk is extremely rare and apparently irregular as a breeding species in southern California. The project will generally benefit northern goshawk by treating fuels to help prevent large, high intensity stand replacement wildland fire. The big tree (old growth) appearance of Jeffrey pine would be maintained with vegetative treatments that reduce stand density problems. Goshawk foraging habitat in the project area would likely benefit from implementing the proposed action by creating a more open understory that facilitates finding and catching prey.

- Although limited reproductive habitat is present in the proposed project area, noise and smoke generating activities that occur within or adjacent to suitable goshawk habitat have the potential to disturb goshawks, especially nesting individuals.

- As stated in design feature number 26, active goshawk nest stands (30 acres) would be avoided during project implementation. The limited operating period for goshawk within post-fledgling family area (PFA) is March 1- September 30. Treatments would only occur during the non-breeding season of October 1 through February 28 if goshawks are found and determined to be nesting within the project area.

- Forest structure within the project area would change and is expected to be maintained at or converted to goshawk foraging habitat over time. While the potential exists for individual goshawks to be affected, implementing the proposed treatments would not affect goshawk population persistence on the Los Padres National Forest.

Fringed myotis

- Suitable habitat for fringed myotis is present in the pinyon pine forest of the project area. There are no documented caves or mines in the project area and rocky outcrops would be avoided by mechanical treatments. Therefore, the project would be unlikely to directly impact maternity colonies or hibernacula.

- Individuals that might be roosting under bark or in tree snags could be disturbed by smoke, noise, or human presence during operations, or injured or killed during pinyon pine and snag removal. In addition, modification of the forest structure has the potential to displace bats, including from important roosts, because changes in vegetation composition or structure can alter the abundance and diversity of their insect prey base (Kenaith 2004).

- Project activities would manage fuel loads to avoid catastrophic stand replacement fires and could prevent loss of tree roosts adjacent to the project area which would benefit bat species. It would also create a mosaic of age classes and densities in vegetation types, improving the amount of forest edge that may improve foraging conditions.

- For the fringed myotis, Pinyon pine is common across the Mt. Pinos Ranger District, and large amounts of habitat would remain across the landscape. The cumulative impact of this project, when considered with similar projects, may lead to an overall beneficial effect by creating a mosaic of age classes and forest edge when considered at the landscape level.

Pinos lodgepole chipmunk

- Suitable habitat for the Mount Pinos lodgepole chipmunk is present in the project area, but towards the lower end of its elevational range and outside of the two known locations on Mt. Able and Mt. Frazier.

- Nests located under rocks or within rocky crevasses would be avoided by mechanical treatments and would be unlikely to be impacted by the project.

- Individuals might be disturbed from regular feeding or mating opportunities by noise, smoke, or human presence associated with thinning, burning, and mastication during implementation or fuelbreak maintenance. Individuals are readily mobile and may be displaced by elimination of trees and snags and vegetation containing food sources, rather than injured or killed.

Yellow-blotched ensatina

- Suitable habitat for this species is present within the project area, but the species has not been documented.

- Individuals that might be present downslope of the project area boundary might benefit from the edge created between dense and sparse vegetation as the result of the proposed action. In addition, individuals and habitat adjacent to the project area would benefit from fuels treatment preventing high intensity wildland fire.

- Thinning mixed conifer stands to a range of 40 to 80 square feet basal area per acre has the potential to change yellow-blotched Ensatina microhabitat in the project area by reducing canopy cover that could increase temperatures and decrease moisture.

- Removal of downed logs and woody debris would remove habitat elements that could lead to injury or mortality of individuals if the species is present.

Botany

A botany report was completed for botanical species (Tufts, 2018).

Listed or proposed species and critical habitat:

There are no federally listed species or habitat within the project area, therefore there is no effect to any federally listed threatened, endangered, proposed or candidate species nor proposed or final designated critical habitat.

Surveys conducted throughout the project area in 2017 further confirmed the absence of any federally listed species from within the project area.

Sensitive Species

The Regional Forester has identified 96 botanical species from the Los Padres National Forest which are listed as Region 5 Regional Forester Sensitive Species. Systematic surveys to determine the presence or absence of these species within the project area were conducted during the summer of 2017. These surveys revealed two Regional Forester Sensitive Species (Botany Report, Table 3):

- *Eriophyllum lanatum var. hallii* Hall's Woolly Sunflower. Three occurrences which total approximately 0.23 acres within the project area.

- *Monardella linoides ssp. Oblonga* Flaxleaf Monardella. Two occurrences which total approximately 0.02 acres within the project area.

No extraordinary circumstances exist with respect to sensitive species listed above and it was determined that the project *may affect individuals but is not likely to result in a loss of species viability in the planning area* based on the following rationale:

- Known occurrences for the Woolly sunflower are in areas proposed for hand cut and hand pile treatments. This species is a prolific seed producer which spreads readily to any surrounding open ground (Pavek, 2011). Reducing stand density may be beneficial as open areas are created or maintained within the vicinity which provide suitable habitat.

- Known occurrences for the Flaxleaf Monardella are in areas which may be treated as either mechanical treatments or hand cut/hand pile treatments. Reducing stand density may be beneficial as open areas are created or maintained within the vicinity which provide suitable habitat.

Flood plains, wetlands, or municipal watersheds

Wetlands

Review of the National Wetlands Inventory and GIS dataset and field review indicates that no wetlands, hydric soils, or hydric plants are present within the project area.

Floodplains

No extraordinary circumstances with respect to floodplains would be created by the project. All stream channels associated with the Tecuya Ridge Shaded Fuelbreak Project are headwater ephemeral or intermittent channels with limited floodplain development. No 100 year Federal Emergency Management Agency floodplains, regional floodplains, or California Department of Water Resources (DWR) Awareness Floodplains occur with the project boundary.

Municipal watersheds

Municipal watersheds are defined in FSM 2542.05 as "A watershed that serves a public water system as defined in the Safe Drinking Water Act of 1974, as amended (42 U.S.C. §§ 300f, et seq.); or as defined in state safe drinking water statutes or regulations." As per the Forest Plan, none of the watersheds in the project area are considered municipal.

Further, review of the California Environmental Health Tracking Program's Drinking Water Systems Geographic Reporting Tool (http://www.cehtp.org/water/) shows that there are no public drinking water sources within the project area or immediately downstream. Therefore, there are anticipated to be no effects to public drinking water sources within or immediately downstream of the project.

Congressionally designated areas such as wilderness, wilderness study areas, or national recreation areas

The project will have no effect on congressionally designated wilderness, or wilderness study areas because there are none within the project area. No extraordinary circumstances exist for this resource condition.

Inventoried roadless areas or potential wilderness areas

- The project overlaps 66 percent of the project area with the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule and the Forest Plan only smaller trees (21 inches diameter breast height or less) would be cut or removed for safety or operability reason. No new road construction or re-construction is proposed under this project.

- Trees would be removed throughout all diameter classes and would include the removal of commercial trees. The 2001 Roadless Rule allows removal of timber under 294.13(b)–(b)4 which, in part, states: The intent of the rule is to limit the cutting, sale, or removal of timber to those areas that have become overgrown with smaller diameter trees. As described in the Los Padres Forest Plan Final Environmental Impact Statement (FEIS) (Vol. 1, 3–76), areas that have become overgrown with shrubs and smaller diameter trees creating a fuel profile that acts as a ''fire ladder'' to the crowns of the dominant overstory trees may benefit ecologically from thinning treatments that cut and remove such

vegetation. The risk of uncharacteristic fire intensity and spread may thus be reduced, provided the excess ladder fuels and unutilized coarse and fine fuels created by logging are removed from the site (FEIS Vol. 1, 3–91). Also, in some situations, cutting or removal of small diameter timber may be needed for recovery or conservation of threatened, endangered, proposed or sensitive species to improve stand structure or reduce encroachment into meadows or other natural openings.

- In October of 2014 the Forest Supervisor signed an Amendment to the Los Padres National Forest Land Management Plan.

- As part of this Amendment to the Los Padres National Forest Land Management Plan the Forest re-evaluated the Antimony IRA to decide if any changes to the IRA zoning needed to occur. It was decided not to change the land use zoning to recommended wilderness specifically since "recommending wilderness adjacent to the communities and within wildland urban interface could limit the possibilities for vegetation management activities and the establishment and management of fuel breaks for community protection".

- As stated on page 19 in the Amendment to the Los Padres National Forest Land Management Plan, there are limited opportunities for wilderness challenge as the natural integrity and opportunity for solitude has been compromised by numerous Off Highway Vehicle (OHV) trails and mining. The linear shape of this unit (24 miles long by 3 miles wide), which is adjacent to major roadways and has multiple roads and motorized trails, indicates that wilderness management could be difficult.

- There are six primitive campgrounds and three active grazing allotments within the Antimony IRA along with a reforestation unit and a number of old roads from previous mining and timber harvesting operations. It is adjacent to the privately managed Wind Wolves Reserve to the north. Adjacent to the south and eastern boundary are the Pine Mountain Club, Cuddy Valley, Lake of the Woods, Frazier Park, and Lebec communities.

- On October 12, 2018, the Deputy Regional Forester signed a Decision Memorandum concurring that the Tecuya Ridge Shaded Fuelbreak projects fits within 36 CFR 294.13(b)(1)(ii) and is consistent with the 2001 Roadless Rule.

For these reasons, no extraordinary circumstances exist for this resource condition.

Research natural areas

The project will have no effect to these areas because there are none within the project area. No extraordinary circumstances exist for this resource condition.

American Indians and Alaska Native religious or cultural sites

There are no American Indians and Alaska Native religious or cultural sites within the project area, therefore no consultation with the State Historic Preservation Office, or Indian tribes is necessary.

Archaeological sites, or historic properties or areas

Cultural resource surveys were conducted throughout the Tecuya Ridge project area in the fall of 2017 and within the Area of Potential Effect (APE). One historic site consisting of concrete floors

of structural remains was found. This site is unevaluated for the National Register of Historic Places. There would be no adverse or negative effects if design features, as outlined in Appendix A, are followed. The reduction of fuels that otherwise could result in fire damage to cultural resources and increased erosion of archaeological sites would have a positive effect.

Public Involvement

This action has been listed as a proposal on the Los Padres National Forest Schedule of Proposed Actions since March, 2018 and updated periodically during the analysis. In addition to providing a description of the proposed action on the Los Padres National Forest webpage, a letter seeking public comments was sent via regular mail or email to interested individuals, Tribes and organizations.

The Forest received over 600 letters during the public scoping comment period. Thirteen unique letters were submitted. The remaining comments were form letters requesting not to conduct any logging or vegetation clearing. Comments were submitted by mail, email or phone and to the forest's website. These comments were evaluated for significance and considered as part of the analysis. These comments and their disposition are included in the project record.

Findings Required by Other Laws and Regulations

National Forest Management Act

The National Forest Management Act (NFMA) requires the development of long-range land and resource management plans. The Forest Plan was approved in 2005 as required by this act. The Forest Plan provides guidance for all natural resource management activities. This decision is consistent with NFMA and the Forestwide goals, objectives, and standards in the Forest Plan.

Endangered Species Act

The Forest Service has met the requirements of Section 7 of the Endangered Species Act by preparing the appropriate documents. There are no listed threatened, endangered, proposed, or candidate botanical species within the vicinity of project activities, no consultation with the U.S. Fish and Wildlife Service is necessary. For terrestrial wildlife species, the Project *is not likely to adversely affect* the California condor because condors are known to fly over and roost nearby the project area and implementation may affect condors or cause them to avoid the area. However, project design features are expected to be effective at minimizing or avoiding effects to California condors. A concurrence letter was received by the U.S. Fish and Wildlife Service on October 4, 2018 stating that the proposed actions are not likely to adversely affect the California condor.

National Historic Preservation Act

This project complies with Forest Plan standards and guidelines for cultural resources. Forest Service Policy (FSM 2361.3) requires that projects with the potential to affect cultural resources, including lands which will leave Federal agency control through sale or exchange, be surveyed for cultural resources in order to comply with 36 CFR §800 – Protection of Historic Properties, Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended; the Archaeological Resources Protection Act (ARPA) of 1979, the National Environmental Policy Act (NEPA), the Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act of 1978.

Clean Water Act (Public Law 92–500)

The 2005 Los Padres National Forest Land Management Plan directs water quality to be maintained and improved through the use of state certified and Environmental Protection Agency (EPA) approved Best Management Practices (BMPs). Project design features, and Forest Plan standards and guidelines, were incorporated into the development of this project to ensure compliance with Section 208 of the Clean Water Act, and the guidelines established by the Central Valley Regional Water Quality Control Board.

Clean Air Act (Public Law 101-549)

Proposed activities comply with the Federal Clean Air Act. Design feature number 10, states that all prescribed fire activities will occur with approvals from the San Joaquin Valley Air pollution and under conditions established in an approved prescribed fire burn plan. Smoke would not be allowed to affect highway visibility on public highways. In addition, prior to burning, the Forest Service prescribed fire manager would ensure that a required burn plan, vicinity map, and project map are mailed with a completed copy of a CB-3 to California Air Resources Board (CARB) so that CARB is familiar with the burn area for 48/72 hour forecasts.

Invasive Species - Executive Order 13112

The proposed actions, including prudent design features to mitigate risks associated with the introduction and spread of non-native invasive species, are consistent with Forest Plan goals and objectives, and standards and guidelines, by addressing non-native invasive species inventoried from the area. A determination has been reached through analysis of the potential for introduction and/or spread of non-native invasive species for consideration by the deciding official and is consistent with Executive Orders 13112 and 13751, the National Forest Management Act, and the Federal Noxious Weeds Act.

Migratory Bird Treaty Act – Executive Order 13186

Because forest lands provide a substantial portion of breeding habitat, land management activities within the Los Padres National Forest could have an impact on local populations.

A 2016 Programmatic Migratory Birds Report for Fuels Treatment Projects (Report) on the Los Padres National Forest list high priority migratory species which may be impacted by fuels treatment projects. In this Report, it is acknowledged that there are some risks to avian species from these types of projects, however the use of avoidance measures can alleviate and minimize these risks. These avoidance measures are displayed in the Report and the Tecuya Ridge Shaded Fuelbreak Project would adhere to these measures, therefore this project is consistent with this Executive Order.

Administrative Review (Appeal) Opportunities

This decision is not subject to administrative review or appeal (36 CFR §218.23(a)). Section 431 of the Consolidated Appropriations Act of 2014 (Pub. L. No. 113-76, 128 Stat. 5 (2014)) directs that the 1993 and 2012 legislation establishing the 36 CFR Part 215 (post-decisional appeals) and 36 CFR Part 218 (pre-decisional administrative review and objection) processes "shall not apply to any project or activity implementing a land and resource management plan…that is categorically excluded…under the National Environmental Policy Act [NEPA]."

Implementation Date

This decision may be implemented immediately upon the issuance of this decision memo.

Contact

For additional information concerning this decision, contact: Greg Thompson, Forester, Los Padres National Forest, 34580 Lockwood Valley Road, Frazier Park, CA 93225, 661-245-3731.

9 APR 2019

Kevin B. Elliott
Forest Supervisor
Los Padres National Forest

Date

Appendix A – Design Features

Fuels

1. Maintain the existing system of roadside fuelbreaks and fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fires and floods. When feasible construct new fuelbreaks on land outside of wilderness or other special designations.

2. Consider an opportunistic approach to fuels management. Take advantage of wildland fire occurrence and wherever possible connect wildland fires to forest health and wildlife habitat improvement projects, as well as fuelbreaks to maintain multiple lines of community defense and to minimize future wildland fire patch size.

3. Thinning to reduce canopy cover is generally recommended to minimize crown fire hazard (J. H. Scott and Reinhardt 2001). The reduction in crown fire potential provides for the increased success of fire suppression. This reduces the risk to firefighters and the public in a suppression action. The decrease in crown fire potential also allows fire managers to use more tools in suppression efforts.

4. The reduction in the potential for crown fire reduces the likelihood of reduced forest health. The risk of losing forest structure and continuity is high in large severe burning fires that produce crown fire. Forest diversity is also lost in large landscape fires that burn at high intensity.

5. Lowering flame lengths decreases the likelihood that there would be crown fire initiation. Lowering flame lengths increases the ability to actively suppress fires effectively during a severe fire season. Using hand crews is the most effective way to attack wildfires; hand crews are generally not effective with flame lengths over 4 feet in height. The activities proposed reduce the flame lengths in treatment units, so hand crews can be utilized.

6. To reduce the threat of spotting distance from firebrands (spotting potential), fuels would need to be reduced both near and at some distance from the wildland urban interface. Implementation of vegetation treatments would result in decreasing the behavior of a wildland fire and would increase the likelihood that fire suppression efforts would be successful in containing fires at a small size.

7. Create fuelbreaks wide enough to allow fire operations to effectively mitigate the high to extreme fire behavior characteristics in those areas that have medium to high fuel load shrub species.

8. Dead and down material left after treatment should be less than 10 tons per acre in the forested treatment areas where available.

9. Brush species would be reduced by up to 85 to 95 percent and may include feathering of treatment for visual concerns. Feather the edges of the fuelbreak by selectively removing random brush species along the edge to create a mixed vegetative area or zone to soften harsh edges.

10. All prescribed fire activities will occur with approvals from the San Joaquin Valley Air pollution and under conditions established in an approved Prescribed Fire Burn Plan.

Botany and Wildlife

11. LMP- S11: When occupied or suitable habitat for a threatened, endangered, proposed, candidate or sensitive (TEPCS) species is present on an ongoing or proposed project site, consider species guidance documents (see LMP, Part 3, Appendix H) to develop project-specific or activity-specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize or mitigate negative long-term effects on threatened, endangered, proposed, candidate or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria. Include review of species guidance documents in fire suppression or other emergency actions when and to the extent practicable.

12. LMP- S12: When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (see Appendix H) so that discretionary uses and facilities promote the conservation and recovery of these species and their habitats. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.

13. LMP-S24: Mitigate impacts of on-going uses and management activities on threatened, endangered, proposed, and candidate species.

14. LMP-S32: When surveys for species presence/absence are done for threatened, endangered, and proposed species, use established survey protocols, where such protocols exist.

Botany

15. Sensitive plant surveys/monitoring would occur prior to project activities.

Wildlife

16. LMP- S14: Where available and within the capability of the site retain a minimum of six downed logs per acre (minimum 12 inches diameter and 120 total linear feet) and 10 to 15 hard snags per five acres (minimum 16 inches diameter at breast height and 40 feet tall, or next largest available). Exception allowed in Wildland/Urban Interface Defense Zones, fuelbreaks, and where they pose a safety hazard.

17. LMP - S15: Within riparian conservation areas retain snags and downed logs unless they are identified as a threat to life, property, or sustainability of the riparian conservation area.

18. LMP - S17: In areas outside of Wildland/Urban Interface Defense Zones and fuelbreaks, retain soft snags and acorn storage trees unless they are a safety hazard, fire threat, or impediment operability.

19. LMP - S18: Protect known active and inactive raptor nest areas. Extent of protection will be based on proposed management activities, human activities existing at the onset of nesting initiation, species, topography, vegetative cover, and other factors. When appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging.

20. LMP- S19: Protect all spotted owl territories identified in the Statewide California Department of Fish and Game database (numbered owl sites) and new sites that meet the state criteria by maintaining or enhancing habitat conditions over the long-term to the greatest extent practicable while protecting life and property. Use management guidelines in the species conservation strategy (or subsequent species guidance document; see Appendix H) to further evaluate protection needs for projects, uses and activities.

21. LMP- S20: Maintain a limited operating period (LOP) prohibiting activities within approximately 0.25 miles of a California spotted owl nest site, or activity center where nest site is unknown, during the breeding season (February 1 through August 15), unless surveys confirm that the owls are not nesting. Follow the USDA Forest Service (1993, 1994 or subsequent) protocol to determine whether owls are nesting. The LOP does not apply to existing road and trail use and maintenance, use of existing developed recreation sites, or existing special-uses, such as recreation residence tracts. When evaluating the need to implement a limited operating period, site- and project-specific factors need to be considered (use species management strategy or subsequent guidance; see Appendix H).

22. LMP- S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. Refer to California condor species account (or subsequent species guidance document; see Appendix H) for additional guidance.

23. Avoid rocky outcrops with mechanical treatments.

24. Trash associated with this project will be removed and properly disposed of. A forest wildlife biologist or designee will brief all personnel involved in implementing the project on the importance of not leaving hazardous materials exposed and daily removal of all garbage fragments to maintain condor health. Garbage removal will be stipulated in mechanical brush treatment contracts.

25. Workers will undergo “hazing” training pursuant to the September 3, 2014 California Condor Recovery Program memo. If any California condors are attracted to work sites, the hazing measures will be implemented to avoid the possibility that the birds will become habituated to human activities, which poses a risk to their well-being.

26. Active goshawk nest stands (30 acres) would be avoided during project implementation. The limited operating period for goshawk within post-fledgling family area (PFA) is March 1 - September 30. Treatments would only occur during the non-breeding season of October 1 through February 28 if goshawks are found and determined to be nesting within the project area.

Silviculture

27. In all treatments, all live and dead trees posing a safety hazard to management activities or to the public will be removed within the treated areas.

28. In all units, as soon as possible, and no longer than 24 hours after tree cutting, all activity-created fir and pine tree stumps greater or equal to 16-inches in diameter would be treated with a borax compound to inhibit the spread of annosus root disease.

29. All black oak will be left unless they are deemed a hazard tree or if removal is needed for operations.

Recreation

30. Where there is a safety concern for recreationists, implement temporary closures in the project area. Ensure that sufficient public and internal notice is provided prior to those closures.
31. Throughout the duration of the project, communicate with the recreational staff to coordinate closures and/or consultation for privacy screening or potential OHV trespass during implementation.

Heritage

32. Post-implementation survey of areas with heavy brush cover will occur.
33. All know sites will be flagged with a 30 meter buffer and avoided prior to implementation, and the project manager will be notified of their location for protection measures.
34. No pile burning would occur within site boundaries.
35. Trees near the boundary of cultural resources would be felled away from sites, so sensitive features and artifacts are not damaged by falling trees or the activity required in removing them.
36. If unanticipated resources are discovered during project implementation, all work will stop in the vicinity until cleared by a professional cultural resources manager.

Soils and Watershed

37. Designate season of use to avoid or restrict road use during periods when use would likely damage the roadway surface or road drainage features. (National BMP Road-4. Road Operations and Maintenance)
38. Use suitable measures to avoid or minimize adverse effects to soil and watershed resources when proposed operations involve use of roads by traffic and during periods for which the road was not designed. (National BMP Road-4. Road Operations and Maintenance)
39. Refueling of equipment and storage of fuel and other hazardous materials will not occur within riparian conservation areas (perennial and seasonal streams, seeps, springs, and meadows). When landings are located within riparian conservation areas, refueling will occur outside riparian conservation areas in an approved refueling area. Storage of any quantity of fuel greater than 100 gallons will require a California Engineer Spill Plan (National BMP Road-10. Equipment Refueling and Servicing)
40. Landing locations should be located outside of riparian conservation areas where possible, unless infeasible due to topography. Landings within riparian conservation areas may occur where there is existing disturbance (instead of constructing a new one); such landings will require special protective measures as specified by an earth scientist or biologist. (National BMP Veg-2. Erosion Prevention and Control)

41. Do not permit use of mechanical equipment on slopes greater than 35 percent or on steeper slopes with short pitches (National BMP Veg-2. Erosion Prevention and Control).
42. Operate equipment when soil compaction, displacement, erosion, and sediment runoff would be minimized. (National BMP Veg-2. Erosion Prevention and Control)
43. Avoid ground equipment operations on unstable, wet, or easily compacted soils unless operation can be conducted without causing excessive rutting, soil puddling, or runoff of sediments directly into waterbodies.
44. Riparian conservation areas will be 100 meters (328 feet) on perennial streams, or 30 meters (98 feet) on intermittent streams, measured as the slope distance from either bank of the channel. Other special aquatic features, such as wetlands, seeps and springs, also have 100-meter riparian conservation areas (National BMP Veg-3. Aquatic Management Zones).
45. No self-propelled ground-skidding equipment is allowed within the riparian conservation areas (exceptions would require input by an earth scientist and/or biologist as described in standard S47 and Appendix E of the Forest Plan).
46. There will be no removal of riparian plant species.
47. Within riparian conservation areas, retain snags and downed logs to the extent possible. Exceptions would be made if snags and logs are identified as a threat to life, property, or sustainability of riparian conservation areas (S15, LMP Part 3, p. 6) (National BMP Veg-3. Aquatic Management Zones).
48. Firelines constructed for project implementation will be rehabilitated following project implementation (prescribed burn). Rehabilitation on the fireline includes: pulling back and spreading out berms, and spreading of bush and ground cover across the fireline. (Fire-2. Use of Prescribed Fire)
49. Water bars or leadout ditches may be constructed in firelines to minimize erosion. Water bars or leadout ditches will be installed according to the following recommended minimum intervals (Fire-2. Use of Prescribed Fire)

Table 3. Recommended minimum interval guidelines for the installation of waters bars.

Fireline Gradient ***(% slope)***	**Distance Between Water-Bars** ***(feet) /(chains)***	
0 to 5	no water-bars needed	no water-bars needed
6 to 15	200	3
16 to 30	100	1.5
31 to 49	75	1
> 50	50	0.5

EXHIBIT B

Tecuya Ridge Shaded Fuelbreak Project

Biological Assessment

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for:
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July 14, 2018

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5 September 2018

Date

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Introduction

This biological assessment (BA) discloses the effects of the Tecuya Ridge Shaded Fuelbreak Project Categorical Exclusion (CE) on federally-listed species and critical habitats. This assessment complies with the legal requirements set forth under section 7 of the Endangered Species Act of 1973, as amended, and Forest Service Manual Section 2672.4 through 2672.42 direction.

The purpose of the project is to provide safe and effective locations from which to perform fire suppression operations, to slow the spread of a wildland fire at these strategic fuelbreak locations, and to reduce the potential for the loss of life, property, and natural resources. The second purpose of the project is to undertake timber stand improvement activities such as thinning to help reduce the existing stand densities. Thinning would help increase the forest's resilience to insects and diseases by lowering the amount of trees that are competing for the limited resources such as water.

The need for the project is based on the high likelihood of wildland fire and a corresponding threat to communities and infrastructure that could occur adjacent to the area where the fuelbreak would be created and maintained under this proposed action. By managing for this need we would also be managing for the health of the forest by reducing competition and returning the stands to a state to where they are less likely to be lost by a stand replacing fire.

The action area is located on the Mount Pinos Ranger District. The action area runs along Tecuya Mountain, which overlooks the communities of Lebec, Frazier Park, Lake of the Woods, Pine Mountain Club and Pinon Pine Estates. The western boundary is along the private property line near San Emidgio Canyon, and the eastern boundary is at the Forest boundary just above the community of Lebec near the major transmission lines. The legal description for the area is T9N, R19W, Sections 18, 28, 29, 30, 31, 32, 33 SBM; T9N, R20W, Sections 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29 SBM; T9N, R21W, Sections 13, 14, 15, 23, 24 SBM; Kern County, California (Figure 1).

Figure 1. Tecuya Ridge shaded fuelbreak action area vicinity map

Consultation History

An official species list for this project (Consultation Code 08ESMF00-2018-SLI-1969) was generated on April 26, 2018 by entering the action area boundary into the U.S. Fish and Wildlife Service Information, Planning, and Conservation (IPac) System website. Table 1 includes federally-listed threatened, endangered, proposed, and candidate species with potential to occur in the Tecuya Ridge Shaded Fuelbreak action area. There are no critical habitats, including critical habitat for California condor, within the action area.

Table 1. Los Padres National Forest threatened, endangered, proposed, candidate species with potential to occur in the Tecuya Mountain action area

Species/Critical Habitat	Status[A]	Habitat type	Range Within Action Area?	Occupied habitat?	Project effects: N=none; U=Unknown, UL=Unlikely; P=Possible; L=Likely
BIRDS					
California condor *(Gymnogyps californianus)*	E	cliffs, open country, redwoods	Yes	Possible	P - Analysis needed
California condor critical habitat	NA	NA	No	NA	N – Action area located outside critical habitat
MAMMALS					
Giant kangaroo rat *(Dipodomys ingens)*	E	<2800', flat arid areas	No	No	N – action area located outside distributional range; no suitable habitat
San Joaquin kit fox *(Vulpes macrotis mutica)*	E	arid grassland, scrubland, oak savanna, alkali sinks	No	No	N – action area located outside distributional range; no suitable habitat
REPTILES					
Blunt-nosed leopard lizard (*Gambelia silus*)	E	typically inhabits open, sparsely vegetated areas (nonnative grassland and valley sink scrub) of low relief on the San Joaquin Valley floor and in the surrounding foothills	Yes	No	N – action area does not contain suitable habitat
AMPHIBIANS					
California red-legged frog *(Rana aurora draytonii)*	T	deep pool, low gradient streams, highly aquatic	No	No	N – species has never been found on Mt. Pinos District, no suitable habitat in action area

a E = federally endangered, T = federally threatened

Management Direction

Management direction comes from the Los Padres National Forest Land Management Plan (LMP) as amended and the accompanying Final Environmental Impact Statement as adopted by the Record of Decision signed on September 20, 2005. Primary direction related to protection of proposed and listed species comes from the LMP Standards and Guidelines and Management Emphases. (Note: Referenced pages of the LMP in this document are based on the electronic version of the Los Padres LMP available online and cd (R5-MB-086-CD; there is a slight difference in pagination from the original hardcopy document).

The Los Padres National Forest Land Management Plan consists of three parts: (1) Southern California National Forests Vision (USDA 2005a), (2) Los Padres National Forest Strategy (USDA 2005b), and (3) Design Criteria for the Southern California National Forests (USDA 2005c). The Tecuya Ridge Shaded Fuelbreak project is consistent with the Southern California Forests Vision (Part 1), the Los Padres National Forest Strategy (Part 2) and the Design Criteria for the Southern California National Forests (Part 3).

Vision

The following LMP goals and desired conditions are directly relevant to the Tecuya Ridge Shaded Fuelbreak project:

National Strategic Plan Goal 1 - Reduce the risk from catastrophic wildland fire;

Forest Plan Goal 1.1 - Community protection;

Goal 1.2 - Restoration of forest health and with forest plan desired conditions;

Fire 2 - Direct community protection;

Fire 4 - Firefighter and public safety; and

Fire 5 - Fuelbreaks and indirect community protection.

The Los Padres National Forest has been divided into a series of geographical units called “Places”. Each Place has its own landscape character. Landscape character has been described as an overall visual and cultural impression of landscape attributes and the physical appearance and cultural context of a landscape that gives it an identity and “sense of place”. Each Place has a theme, setting, desired condition, and program emphasis section. The action area is located within the Mount Pinos Place (Land Management Plan, Part 2, pages 65-67).

The Mount Pinos Place includes the following management direction that is relevant to the stated purpose and need of the Tecuya Ridge Shaded Fuelbreak project:

- Perpetuating healthy conifer forests.
- Maintaining the big tree (old growth) appearance of Jeffrey pine forests with vegetative treatments that reduce stand density problems.
- Active management of vegetation to maintain healthy conifer stands and protect communities.

Strategy

This section describes the detailed program strategies (Land Management Plan, Part 2, Page 117) that apply to the Tecuya Ridge Shaded Fuelbreak project in order to make progress toward achieving the desired conditions and goals discussed in Part 1 of the Land Management Plan.

FH 3 - Restoration of Forest Health

- Implement vegetation management activities to reduce tree densities and fuel loading in yellow pine and mixed conifer forests to levels similar to those that characterized forest of the pre-suppression and early suppression eras (ca. 1880-1930). Restore species composition comparable to forests of the same era with an emphasis on increasing the relative abundance of large-diameter (greater than 24 inches diameter breast height), shade-intolerant conifer species.

- Treat fuel loading in montane chaparral to reduce the likelihood that fires originating in this type will generate crown fires in adjacent forested stands.

- Manage chaparral in selected locations to protect life and property of human inhabitants, to improve wildlife forage, and to protect watersheds from the adverse impacts of large, destructive, high intensity fires.

FH 4 – Insect and Disease Management

- Protect natural resource values at risk due to insect or disease loss at levels outside of the desired range of variability or where needed to improve habitat

- Thin conifer stands to prevent water stress and damage by bark beetles.

Design Criteria

Relevant Fish and Wildlife Standards

LMP- S11: When occupied or suitable habitat for a threatened, endangered, proposed, candidate or sensitive (TEPCS) species is present on an ongoing or proposed project site, consider species guidance documents (Appendix H of the LMP) to develop project-specific or activity-specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize or mitigate negative long-term effects on threatened, endangered, proposed, candidate or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria. Include review of species guidance documents in fire suppression or other emergency actions when and to the extent practicable.

LMP- S12: When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (Appendix H of the LMP) so that discretionary uses and facilities promote the conservation and recovery of these species and their habitats. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.

LMP- S14: Where available and within the capability of the site retain a minimum of six downed logs per acre (minimum 12 inches diameter and 120 total linear feet) and 10 to 15 hard snags per five acres (minimum 16 inches diameter at breast height and 40 feet tall, or next largest available). Exception allowed in Wildland/Urban Interface Defense Zones, fuelbreaks, and where they pose a safety hazard.

LMP - S15: Within riparian conservation areas retain snags and downed logs unless they are identified as a threat to life, property, or sustainability of the riparian conservation area.

LMP - S17: In areas outside of Wildland/Urban Interface Defense Zones and fuelbreaks, retain soft snags and acorn storage trees unless they are a safety hazard, fire threat, or impediment operability.

LMP - S18: Protect known active and inactive raptor nest areas. Extent of protection will be based on proposed management activities, human activities existing at the onset of nesting initiation, species, topography, vegetative cover, and other factors. When appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging.

LMP- S19: Protect all spotted owl territories identified in the Statewide California Department of Fish and Game database (numbered owl sites) and new sites that meet the state criteria by maintaining or enhancing habitat conditions over the long-term to the greatest extent practicable while protecting life and property. Use management guidelines in the species conservation strategy (or subsequent species guidance document; see Appendix H of the LMP) to further evaluate protection needs for projects, uses and activities.

LMP- S20: Maintain a limited operating period (LOP) prohibiting activities within approximately .25 miles of a California spotted owl nest site, or activity center where nest site is unknown, during the breeding season (February 1 through August 15), unless surveys confirm that the owls are not nesting. Follow the USDA Forest Service (1993, 1994 or subsequent) protocol to determine whether owls are nesting. The LOP does not apply to existing road and trail use and maintenance, use of existing developed recreation sites, or existing special-uses, such as recreation residence tracts. When evaluating the need to implement a limited operating period, site- and project-specific factors need to be considered (use species management strategy or subsequent guidance; see Appendix H of the LMP).

LMP-S24: Mitigate impacts of on-going uses and management activities on threatened, endangered, proposed, and candidate species.

LMP- S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. Refer to California condor species account (or subsequent species guidance document; see Appendix H of the LMP) for additional guidance.

LMP-S32: When surveys for species presence/absence are done for threatened, endangered, and proposed species, use established survey protocols, where such protocols exist.

Proposed Action

Reduction in stand density, competing vegetation, and fuels are proposed on an estimated 1,626 acres of National Forest System lands within Mt. Pinos Place Management Area. The proposed action would create a variable-width, shaded fuelbreak, along Tecuya Ridge in order to alter existing stand structure, reduce fuel loading, and protect local communities and provide for firefighter safety. To achieve this, various types of vegetation treatments are proposed. Table 2 displays treatment acres by various stand types:

Table 2. Treatment by stand type

Stand Type	Treatment	Acres
Mixed Conifer	Hand Cut/Hand Pile	467
	Mechanical Treatment	828
Pinyon Juniper	Hand Cut/Hand Pile	54
	Mechanical Treatment	192
Sagebrush-scrub	Mechanical Treatment	85

Treatments would include a combination of mechanical thinning, mastication of brush/smaller trees, and hand treatments such as hand thinning, brush cutting, pruning, and piling of material. Pile burning and jackpot burning will be used to reduce fuel loads after thinning or mastication activities.

Mixed conifer and pinyon juniper stands would be thinned to a range of 40 to 60 square feet per acre. Residual trees would be selected for vigor; however, larger Jeffrey pine would be retained per Forest Plan direction unless they pose a hazard or are infected with dwarf mistletoe. All black oak would be left unless they pose a hazard. Early seral species[1] would be a priority to leave when selecting residual trees. Timbered stands with slopes generally greater than 35 percent would be mostly hand thinned. Activity fuels will be either lopped or scattered or hand piled depending on conditions such as slope. Hand piles would be burned.

Areas of sagebrush-scrub would treated by a combination of mastication and hand treatments such as brush cutting, pruning and piling of material. Slopes generally greater than 35 percent would be hand treated and any piles created would be burned. Up to 85 to 95 percent of this area would be treated as determined by the project manager.

The most cost efficient and effective treatments within each stand or brush field would be chosen based on timing, equipment availability, and post treatment results, but would generally be implemented as follows:

- Stands less than 35 percent slope, with viable amounts of accessible commercial-sized material, would be mechanically harvested using feller bunchers and rubber-tired or track-mounted log skidders to remove whole trees to landings.
- Stands less than 35 percent slope, and that do not have a viable amount of commercial-sized timber, or are not accessible, would be treated by mastication.
- Stands less than 35 percent slope that consist primarily of an over-abundance of smaller trees and shrubs would be masticated.
- Existing and operations-generated slash, small trees, and shrubs would be tractor piled or masticated with a track-mounted masticator. Mastication or tractor piling would occur shortly after thinning is completed. Post-harvest machine piling and burning of piles would occur as necessary to reduce surface fuels to less than 10 tons per acre. Mastication may be substituted for tractor piling where surface fuels can be more effectively treated by this method and where maintaining or increasing soil cover is a higher priority.

[1] Jeffrey and pinyon pine.

- Timbered stands and sage scrub fields with slopes generally greater than 35 percent slope would be either lopped or scattered or hand piled depending on conditions such as slope. Hand piles would be burned.
- Sagebrush-scrub areas less than 35 percent slope would be treated using a masticator. Areas where slopes generally exceed 35 percent slope would be hand treated, piled, and burned.
- The removal of hazard trees (live and dead) of all sizes would occur along utility lines, roads, trails and landings to provide for safety of woods workers and public throughout project implementation, except where restrictions for removal apply.
- A part of the project is within the Antimony Inventoried Roadless Area (IRA). Consistent with 36 CFR 294.13(b)(1)(ii), generally only smaller trees (21 inches diameter breast height or less) would be cut or removed within the IRA. Larger trees may be cut or removed within the IRA for safety or operability reasons. No new road construction or re-construction is proposed under this project.

Design Features

Wildlife-specific project design features include previously-noted management direction, as well as:

- Avoid rocky outcrops with mechanical treatments.
- Trash associated with this project will be removed and properly disposed of. A Forest wildlife biologist will brief all personnel involved in implementing the Tecuya Ridge Shaded Fuelbreak Project on the importance of not leaving hazardous materials exposed and daily removal of all garbage fragments to maintain condor health. Garbage removal will be stipulated in mechanical brush treatment contracts.

Additional project design features are listed below in Appendix A.

Spatial and Temporal Context for Effects Analysis

Direct/Indirect Effects Boundaries

The 1,626-acre action area boundary will be used as the geographic bounds direct and indirect effects because this area would encompass all of the effects occurring during implementation. The temporal boundary for analyzing the direct and indirect effects is 2 years from the decision date - the amount of time required for implementation to occur and the period during which changes to habitat that are expected to be maintained into perpetuity would be completed.

Cumulative Effects Boundaries

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The cumulative effects (CE) analysis spatial boundary is the Mount Pinos Ranger District boundary. State and privately-held lands within this boundary share common vegetation types and conditions, habitats,

drainage patterns, climate, soil types, and disturbance regimes as well as potential future impacts – and the California condor is a wide-ranging species.[2]

The cumulative effects timeframe will be 2 years from the decision date, when similar treatment proposals on privately-held lands are expected to be completed.

Affected Environment and Environmental Consequences

California Condor

Affected Environment

California condors were widely distributed in North America during the late Pleistocene era (approximately 50,000-10,000 years before present), with records from Oregon, California, Nevada, Arizona, New Mexico, Texas, Florida, New York, and Mexico. At the time of the arrival of Russian and Euro-American explorers, condors occurred only in western North America from British Columbia, Canada, to Baja California, Mexico, and inland to the Cascade and Sierra Nevada mountain ranges, with occasional observations farther east. California condors were observed in the Pacific Northwest until the early 1900s, and in Baja California until the 1930s. (U.S. Fish and Wildlife Service 2013)

By about 1950, the species was restricted to southern California prior to extirpation from wild in 1987, when the last remaining wild condors were removed from the wild for captive breeding. Reintroductions in California, northern Arizona, and the Sierra San Pedro Martir in northern Baja California have led to very limited renewed nesting in each area. Some of the birds released in northern Arizona range into southern Utah and rarely as far north as southern Wyoming and Colorado. (U.S. Fish and Wildlife Service 2013)

Historically, California condor occurred in the Coast Ranges of California from Santa Clara and San Mateo Counties south to Ventura County, and east to the western slope of the Sierra Nevada and Tehachapi Mountains. It occurred primarily from sea level to 9,000 feet and nested at 2,000-6,500 feet. Almost all of the historic nest sites used by California condors are located on the Los Padres, Angeles, and Sequoia National Forests (USDA Forest Service 2005d, Reading Room).

In 1987, after years of steady population declines and local extirpations, the last nine wild condors were captured on the Los Padres National Forest and brought into captivity. Since that time, successful captive breeding programs have been ongoing (USDA Forest Service 2005d, Reading Room).

California condor life history can be categorized into nesting, foraging, and roosting components. California condors are primarily a cavity nesting species and typically nest in cavities located on steep rock formations or in the burned out hollows of old-growth conifers including coast redwood (*Sequoia sempervirens*) and giant sequoia trees (*Sequoiadendron giganteum*). Less typical nest sites include cliff

[2] For the purpose of NEPA, the cumulative effects spatial and temporal boundaries are the same as those noted in the project biological evaluation: the roughly 250,000-acre Mount Pinos Ranger District is the spatial boundary because the area shares common vegetation types and conditions, wildlife habitats, drainage patterns, climate, soil types, and disturbance regimes as well as potential future impacts – and because the California condor is a wide-ranging species; the timeframe is 10 years from the decision date, when the first entry for all similar treatment proposals are expected to be completed.

ledges, cupped broken tops of old growth conifers, and in several instances, nests of other species. California condors are obligate scavengers that feed only on carrion. California condors predominately forage in open terrain of foothill grassland and oak savanna habitats, and at coastal sites in central California (birds released from Big Sur and Pinnacles National Park), but have also been observed feeding in more wooded areas, though this is less common. California condors repeatedly use roosting sites on ridgelines, rocky outcrops, steep canyons, and in tall trees or snags near foraging grounds. Similar to other vulture species, condor roosts also may serve in social interaction and as assembly points for group activities; it is common for two or more California condors to roost together and leave the roost at the same time. Cliffs and tall trees, including dead snags, are generally utilized by breeding pairs as roosting sites in nesting areas. (U.S. Fish and Wildlife Service 2013)

The U.S. Fish & Wildlife Service Hopper Mountain National Wildlife Refuge Complex (Complex) serves as the lead office for the California Condor Recovery Program (Recovery Program). Today, two of the wildlife refuges in the Complex, Bitter Creek National Wildlife Refuge (Bitter Creek NWR) and Hopper Mountain National Wildlife Refuge (Hopper Mountain NWR) are the primary management locations for the southern California condor population, which currently inhabits portions of San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Kern, Tulare, Fresno, and Inyo Counties. (U.S. Fish and Wildlife Service 2017). The current central California population stands at 87 birds and the total wild condor population is 276 (http://www.ventanaws.org/species_condors/)

Between October 1 and December 31, 2017, the most recent period for which data are currently available, California condor use of National Forest System lands in southern California was concentrated on the Los Padres, Angles, and Sequoia National Forests (https://www.sciencebase.gov/catalog/item/53a1d33ae4b0403a441545c7).

The action area does not contain optimal nesting or foraging habitat. In general condors are active in the action area flying over it fairly often and roosting nearby occasionally. The closest previous nests (both were active in 2017) are about 20 miles away near Bitter Creek NWR and the Tehachapi Mountains; the Fish and Wildlife Service has yet to document any nesting in 2018 in this region but there is a possibility for a nest near Eagle Rest Peak on or near the Wind Wolves preserve (J. Brandt, pers. comm.). In a follow up phone message, Joseph Brandt stated that individual condors might roost relatively infrequently in the action area and there are no communal or commonly-used nests. The action area is within the Bitter Creek/El Cajon flyway(s) and the Service is relatively unconcerned about thinning projects in this area because the potential for effect on condors would be relatively minor.

The California Condor Recovery Program is currently focusing its efforts on the captive-breeding, nest management, and reintroduction of California condors to the wild with the goal of establishing two geographically distinct self-sustaining populations of condors in the wild, with a third population retained in captivity. Each population should number 150 individuals, with 10-15 breeding pairs within each group (U.S. Fish and Wildlife Service 2017).

Environmental Consequences

Direct Effects

As previously noted, the action area does not contain optimal nesting or foraging habitat and condor activity in the action area includes flying over it fairly often and roosting nearby occasionally. Noise and smoke associated with thinning, burning, and mastication have only minor potential to alter normal flight or roosting patterns of condors within or adjacent to the action area. Condors are also mobile, high-flying, and able to move away from any incidental smoke that may occur and all known roosting/nesting sites are

approximately 20 miles away, allowing for extensive dispersal of the small amount of smoke expected from jackpot and pile burning. In the unlikely event condors do use the action area for nesting or roosting prior to implementation or ongoing maintenance of the fuelbreak, per Land Management Plan Standard 28, disturbance to these individuals would be avoided or minimized by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. In addition, would be stopped if California condors were observed in the action area during implementation or maintenance. If condors are observed in the area during operations, all activity would cease and U.S. Fish and Wildlife Service would be notified.

There is no designated critical habitat within the action area; therefore the project will not affect designated critical habitat.

Indirect Effects

Under the proposed action, most dead and down materials would be removed. Although an effort would be made to retain large snags, safety at the discretion of the operator, may preclude retention of snags. Although there are currently no known condor roosting sites within the action area, snag removal could eliminate roosting structures. However, larger Jeffrey pine would be retained per Forest Plan direction unless they pose a hazard or are infected with dwarf mistletoe and all black oak would be left unless they pose a hazard. However, the project would benefit California condors by treating fuels to help prevent large, high intensity stand replacement wildland fire that could eliminate roosting habitat over a larger area. The proposed action might improve condor foraging habitat by creating a more open area that facilitates finding and catching prey by birds like condors that are dependent upon sight for locating food.

Due to the innate curiousness of condors, trash associated with this project will be removed and properly disposed of and a Forest wildlife biologist will brief personnel to minimize the presence of garbage or hazardous materials in the action area.

Cumulative Effects

Similar fuels reduction actions known to be occurring on privately-held lands are minor and currently about 200 acres total and the proposed action is not expected to cumulatively combine with these actions in such a way that is likely to jeopardize the continued existence of the species.[3]

Determination

It is my determination that the Tecuya Ridge Shaded Fuelbreak Project *may affect, but is not likely to adversely affect* the California condor because condors are known to fly over and roost nearby the action area and implementation may attract condors or cause them to avoid the area. However, project design features are expected to be effective at minimizing or avoiding effects to California condors.

[3] For the purpose of NEPA, actions considered are those listed in Table 3 and Appendix B of the project biological evaluation. The proposed action, when combined with other similar current or future proposals on federal, state, and private lands, would impact about 10,810 acres, or about 4 percent, of the roughly 250,000 Mount Pinos Ranger District. There is little suitable condor habitat within the project area, so there would be little additive effect. Conifer, in general, is a common habitat type and large amounts would remain across the landscape.

References

Brandt, J., Supervisory Wildlife Biologist USFWS California Condor Recovery Program. Hopper Mountain National Wildlife Refuge. Personal communication with Katherine Malengo, Enterprise Program Wildlife Biologist, regarding condor use of the Tecuya Ridge Shaded Fuelbreak action area. February 5, 2018.

U.S. Fish and Wildlife Service. 2013. California condor (*Gymnogyps californianus*) 5-year review: summary and evaluation. USFWS, Pacific Southwest Region.

U.S. Fish and Wildlife Service. 2017. About the California Condor Recovery Program - Hopper Mountain - U.S. Fish and Wildlife Service. Last updated June 22, 2017. Available online: https://www.fws.gov/refuge/Hopper_Mountain/About_the_CACO_Recovery_Prog.html# .

USDA Forest Service. 2005a. Land Management Plan: Part 1 Southern California National Forests Vision. Pacific Southwest Region. Los Padres National Forest.

USDA Forest Service. 2005b. Land Management Plan: Part 2: Los Padres National Forest Strategy. Pacific Southwest Region. Los Padres National Forest.

USDA Forest Service. 2005c. Land Management Plan: Part 3: Design Criteria for the Southern California National Forests. Pacific Southwest Region. Los Padres National Forest.

USDA Forest Service. 2005d. Final Environmental Impact Statement, Volume 2 (Appendices) Land Management Plans Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest. Pacific Southwest Region.

Appendix A: Tecuya Mountain Shaded Fuelbreak Project Design Features

Design Feature
Fuels
Maintain the existing system of roadside fuelbreaks and fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fires and floods. When feasible construct new fuelbreaks on land outside of wilderness or other special designations.
Consider an opportunistic approach to fuels management. Take advantage of wildland fire occurrence and wherever possible connect wildland fires to forest health and wildlife habitat improvement projects, as well as fuelbreaks to maintain multiple lines of community defense and to minimize future wildland fire patch size.
Thinning to reduce canopy cover is generally recommended to minimize crown fire hazard (J. H. Scott and Reinhardt 2001). The reduction in crown fire potential provides for the increased success of fire suppression. This reduces the risk to firefighters and the public in a suppression action. The decrease in crown fire potential also allows fire managers to use more tools in suppression efforts.
The reduction in the potential for crown fire reduces the likelihood of reduced forest health. The risk of losing forest structure and continuity is high in large severe burning fires that produce crown fire. Forest diversity is also lost in large landscape fires that burn at high intensity.
Lowering flame lengths decreases the likelihood that there would be crown fire initiation. Lowering flame lengths increases the ability to actively suppress fires effectively during a severe fire season. Using hand crews is the most effective way to attack wildfires; hand crews are generally not effective with flame lengths over 4 feet in height. The activities proposed reduce the flame lengths in treatment units, so hand crews can be utilized.
To reduce the threat of spotting distance from firebrands (spotting potential), fuels would need to be reduced both near and at some distance from the WUI. Implementation of vegetation treatments would result in decreasing the behavior of a wildland fire and would increase the likelihood that fire suppression efforts would be successful in containing fires at a small size.
Create fuelbreaks wide enough to allow fire operations to effectively mitigate the high to extreme fire behavior characteristics in those areas that have medium to high fuel load shrub species.
Dead and down material left after treatment should be less than 10 tons per acre in the forested treatment areas where available.
Brush species would be reduced by up to 85 to 95 percent and may include feathering of treatment for visual concerns. Feather the edges of the fuelbreak by selectively removing random brush species along the edge to create a mixed vegetative area or zone to soften harsh edges.
All prescribed fire activities will occur with approvals from the San Joaquin Valley Air pollution and under conditions established in an approved Prescribed Fire Burn Plan.
Botany and Wildlife
LMP- S11: When occupied or suitable habitat for a threatened, endangered, proposed, candidate or sensitive (TEPCS) species is present on an ongoing or proposed project site, consider species guidance documents (see Appendix H) to develop project-specific or activity- specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize or mitigate negative long-term effects on threatened, endangered, proposed, candidate or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria. Include review of species guidance documents in fire suppression or other emergency actions when and to the extent practicable.

Design Feature
LMP- S12: When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (see Appendix H) so that discretionary uses and facilities promote the conservation and recovery of these species and their habitats. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.
LMP - S24: Mitigate impacts of on-going uses and management activities on threatened, endangered, proposed, and candidate species.
LMP-S32: When surveys for species presence/absence are done for threatened, endangered, and proposed species, use established survey protocols, where such protocols exist.
Botany
Sensitive plant surveys/monitoring would occur prior to project activities.
Wildlife
LMP- S14: Where available and within the capability of the site retain a minimum of six downed logs per acre (minimum 12 inches diameter and 120 total linear feet) and 10 to 15 hard snags per five acres (minimum 16 inches diameter at breast height and 40 feet tall, or next largest available). Exception allowed in Wildland/Urban Interface Defense Zones, fuelbreaks, and where they pose a safety hazard.
LMP - S15: Within riparian conservation areas retain snags and downed logs unless they are identified as a threat to life, property, or sustainability of the riparian conservation area.
LMP - S17: In areas outside of Wildland/Urban Interface Defense Zones and fuelbreaks, retain soft snags and acorn storage trees unless they are a safety hazard, fire threat, or impediment operability.
LMP - S18: Protect known active and inactive raptor nest areas. Extent of protection will be based on proposed management activities, human activities existing at the onset of nesting initiation, species, topography, vegetative cover, and other factors. When appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging.
LMP- S19: Protect all spotted owl territories identified in the Statewide California Department of Fish and Game database (numbered owl sites) and new sites that meet the state criteria by maintaining or enhancing habitat conditions over the long-term to the greatest extent practicable while protecting life and property. Use management guidelines in the species conservation strategy (or subsequent species guidance document; see Appendix H) to further evaluate protection needs for projects, uses and activities.
LMP- S20: Maintain a limited operating period (LOP) prohibiting activities within approximately .25 miles of a California spotted owl nest site, or activity center where nest site is unknown, during the breeding season (February 1 through August 15), unless surveys confirm that the owls are not nesting. Follow the USDA Forest Service (1993, 1994 or subsequent) protocol to determine whether owls are nesting. The LOP does not apply to existing road and trail use and maintenance, use of existing developed recreation sites, or existing special-uses, such as recreation residence tracts. When evaluating the need to implement a limited operating period, site- and project-specific factors need to be considered (use species management strategy or subsequent guidance; see Appendix H).
LMP- S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. Refer to California condor species account (or subsequent species guidance document; see Appendix H) for additional guidance.
Avoid rocky outcrops with mechanical treatments.

Design Feature
Silviculture
In all treatments, all live and dead trees posing a safety hazard to management activities or to the public will be removed within the treated areas.
In all units, as soon as possible, and no longer than 24 hours after tree cutting, all activity-created fir and pine tree stumps greater or equal to 16-inches in diameter would be treated with a borax compound (Sporax) to inhibit the spread of annosus root disease.
All black oak will be left unless they are deemed a hazard tree or if removal is needed for operations.
Recreation
Where there is a safety concern for recreationists, implement temporary closures in the project area. Ensure that sufficient public and internal notice is provided prior to those closures.
Throughout the duration of the project, communicate with the recreational staff to coordinate closures and/or consultation for privacy screening or potential OHV trespass during implementation.
Heritage
Post-implementation survey of areas with heavy brush cover will occur.
All known sites will be flagged prior to implementation, and the project manager will be notified of their location for protection measures.
If unanticipated resources are discovered during project implementation, all work will stop in the vicinity until cleared by a professional cultural resources manager.
Soils and Watershed
Designate season of use to avoid or restrict road use during periods when use would likely damage the roadway surface or road drainage features. (National BMP Road-4. Road Operations and Maintenance)
Use suitable measures to avoid or minimize adverse effects to soil and watershed resources when proposed operations involve use of roads by traffic and during periods for which the road was not designed. (National BMP Road-4. Road Operations and Maintenance)
Refueling of equipment and storage of fuel and other hazardous materials will not occur within riparian conservation areas (perennial and seasonal streams, seeps, springs, and meadows). When landings are located within riparian conservation areas, refueling will occur outside the riparian conservation areas in an approved refuel area. Storage of any quantity of fuel greater than 100 gallons will require a California Engineer Spill Plan (National BMP Road-10. Equipment Refueling and Servicing)
Landing locations should be located outside of riparian conservation areas where possible, unless infeasible due to topography. Landings within riparian conservation areas may occur where there is existing disturbance (instead of constructing a new one); such landings will require special protective measures as specified by an earth scientist or biologist. (National BMP Veg-2. Erosion Prevention and Control)
Do not permit use of mechanical equipment on slopes greater than 35 percent or on steeper slopes with short pitches (National BMP Veg-2. Erosion Prevention and Control).
Operate equipment when soil compaction, displacement, erosion, and sediment runoff would be minimized. (National BMP Veg-2. Erosion Prevention and Control)
Avoid ground equipment operations on unstable, wet, or easily compacted soils unless operation can be conducted without causing excessive rutting, soil puddling, or runoff of sediments directly into waterbodies.

Design Feature
Riparian conservation areas will be 100 meters (328 feet) on perennial, or 30 meters (98 feet) on intermittent streams, measured as the slope distance from either bank of the channel. Other special aquatic features, such as wetlands, seeps and springs, also have 100-meter riparian conservation areas (National BMP Veg-3. Aquatic Management Zones).
No self-propelled ground-skidding equipment is allowed within the riparian conservation areas (exceptions would require input by an earth scientist and/or biologist as described in standard S47 and Appendix E of the Forest Plan).
There will be no removal of riparian plant species.
Within riparian conservation areas, retain snags and downed logs to the extent possible. Exceptions would be made if snags and logs are identified as a threat to life, property, or sustainability of riparian conservation areas (S15, LMP Part 3, p. 6) (National BMP Veg-3. Aquatic Management Zones).
Firelines constructed for project implementation will be rehabilitated following project implementation (prescribed burn). Rehabilitation on the fireline includes: pulling back and spreading out berms, and spreading of bush and ground cover across the fireline. (Fire-2. Use of Prescribed Fire)
Water bars or leadout ditches may be constructed in firelines to minimize erosion. Water bars or leadout ditches will be installed according to the following recommended minimum intervals (Fire-2. Use of Prescribed Fire)

Recommended minimum interval guidelines for the installation of waters bars.

Fireline Gradient (percent slope)	Distance Between Water-Bars (feet)/(chains)	
0 to 5	no water-bars needed	no water-bars needed
6 to 15	200	3
16 to 30	100	1.5
31 to 49	75	1
> 50	50	0.5

EXHIBIT C

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2019-I-0056

January 28, 2019

Kevin Elliott, Forest Supervisor
Los Padres National Forest
6750 Navigator Way, Suite 150
Goleta, California 93117

Subject: Tecuya Ridge Shaded Fuelbreak Project, Los Padres National Forest, Kern County, California (08ESMF00-2018-SLI-1969)

Dear Mr. Elliott:

We have reviewed your request, dated October 4, 2018, and received in our office on October 15, 2018, for our concurrence with your determination that the subject project may affect but is not likely to adversely affect the federally endangered California condor (*Gymnogyps californianus*). The U.S. Forest Service (USFS) is proposing to create a shaded fuel break along the Tecuya Mountain ridgeline near the San Emigdio Mountains, which is north of Frazier Park and Lake of the Woods, Kern County, California.

The purpose of this project is to provide safe and effective locations for fire suppression operations, to slow the spread of a wildland fire, and to reduce the potential for the loss of life, property, and natural resources. Proposed project activities include mechanical thinning, mastication of brush/smaller trees, hand thinning, brush cutting, pruning, pile burning and jackpot burning to reduce fuel loads after thinning or mastication activities. The proposed action would occur on an estimated 1,626 acres of National Forest System lands within Mt. Pinos Place Management Area. The proposed activities would occur from the fall through early spring 2019, with maintenance treatments occurring every 3 to 7 years (P. Lieske pers. comm. 2018b).

The proposed action area does not contain optimal nesting or foraging habitat for California condors; however, California condor activity along the Tecuya Mountain ridgeline includes frequent fly-overs with the occasional stopover for temporary roosting (USFS 2018). The closest nesting areas are approximately 20 miles away near Bitter Creek National Wildlife Refuge and the Tehachapi Mountains (USFS 2018). To avoid effects to California condors, USFS has proposed to implement the following measures:

1. Restrict activities within 1.5 miles of active California condor nest sites, whether they are found within or outside the action area;

2. Restrict activities within 0.5 mile of active roost sites, whether they are found within or outside the action area;
3. Cease work if California condors were observed in the action area during implementation of maintenance and notify the U.S. Fish and Wildlife Service;
4. All trash associated with this project will be removed and properly disposed of; and
5. Workers will undergo "hazing" training pursuant to the attached memo from the California Condor Recovery Program (see attached memo). If any California condors are attracted to work sites, the hazing measures will be implemented to avoid the possibility that the birds will become habituated to human activities, which poses a risk to their well-being (P. Lieske pers. comm. 2018a).

We concur with your determination that the project activities are not likely to adversely affect California condors for the following reasons:

1. The USFS proposes to implement the aforementioned avoidance measures;
2. California condors are not known to nest within the action area;
3. California condors are mobile, high-flying, and able to move away from any smoke that may occur from jackpot and pile burning; and
4. The proposed project would benefit California condors by treating fuels to help prevent large, high-intensity fires that could eliminate roosting habitat over a larger area.

Further consultation, pursuant to section 7(a)(2) of the Act is not required. If the proposed action changes in any manner that may affect a listed species or critical habitat, you must contact us immediately to determine whether additional consultation is required. If you have any questions, please contact Raphaela Ware of my staff at (805) 677-3319, or by electronic mail at raphaela_ware@fws.gov.

Sincerely,

Christopher Diel
Assistant Field Supervisor

Enclosure

LITERATURE CITED

[USFS] U.S. Forest Service. 2018. Tecuya Ridge Shaded Fuelbreak Project Biological Assessment, Kern County, California.

[Lieske 2018a] Lieske, P. 2018. Assistant Forest Biologist, U.S. Forest Service. Electronic mail about implementing the California condor hazing protocol to Raphaela Ware, U.S. Fish and Wildlife Service, Ventura Field Office, dated October 30, 2018.

[Lieske 2018b] Lieske, P. 2018. Assistant Forest Biologist, U.S. Forest Service. Electronic mail about the proposed timeline for the project to Raphaela Ware, U.S. Fish and Wildlife Service, Ventura Field Office, dated November 15, 2018.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
HOPPER MOUNTAIN NATIONAL WILDLIFE REFUGE COMPLEX
CALIFORNIA CONDOR RECOVERY PROGRAM
P.O. Box 5839
Ventura, CA 93005
Tel: (805) 644-5185 Fax: (805) 644-1732

September 3, 2014

Memorandum:

To: Project Leader, Ventura Fish and Wildlife Office

From: California Condor Field Coordinator, Hopper Mountain NWRC

Subject: Recovery Program Guidance on Hazing California Condors

Hazing is a method to discourage an undesirable behavior in wildlife that employs the immediate use of deterrents to provide negative conditioning to the animal. The practice of hazing has been a longstanding method implemented by the California Condor Recovery Program to deter condors from contact with humans and human structures, since the captive-bred juveniles were first released into the wild.

Condors that land on or near buildings, oil rigs, communication towers and other human structures are at risk of injury or mortality. In these situations, condors may become entangled in, or ingest materials including but not limited to wire, ropes, tarps, small bits of trash (micro-trash), industrial and household chemicals. Condors may also associate humans and human structures with food if they find discarded food trash or are given food directly.

To discourage such interactions between condors and humans and/or human structures, condors must experience immediate and direct negative reinforcement in the form of hazing. The hazing of California condors typically involves such actions as hand clapping, yelling, the use of leashed barking dogs, the use of water (e.g., low pressure hoses or sprinklers), and/or soft projectiles to startle the birds and get them to move away from potentially harmful situations. Properly conducted, hazing does not create a likelihood of injury or death to condors. Thus, the Service considers hazing to be a take avoidance measure rather than as harassment or harm to condors under the Federal Endangered Species Act of 1973, as amended (ESA) and 50 C.F.R. 17.3.

Traditionally hazing has been conducted by the Service field biologists or our recovery program partners directly involved in condor recovery efforts, and in possession of valid ESA Section 10(a)(1)(A) recovery permits. However, as the range of the Southern California condor flock have continued to expand, it has become increasingly difficult for condor recovery permit holders to respond to every situation that requires hazing. The 2013 home range for the Southern California condor flock was nearly 9.6 million acres and we only expect it to increase. As more condors continue to re-colonize more and more of their historical range, the growing condor population will have more opportunities to come into contact with humans, and human structures, distributed across an increasingly larger geographic area.

The most effective hazing occurs immediately (or as soon as possible) following the undesirable behavior. This will be most effectively achieved by the individual(s) who witness the condor engaged in an undesirable behavior, rather than first contacting the Service and then waiting for a biologist to arrive. Groups of condors are now regularly using multiple areas across their range simultaneously, and groups of birds can be spread across hundreds and sometimes thousands of square miles, making it impractical for the Service to respond to every incidence that requires hazing. Waiting hours or days for the Service or permitted recovery program partners to arrive to perform the hazing allows the condor(s) to remain engaged in their undesirable behavior, and provides positive reinforcement back to the birds. Condors that are not hazed from these situations are likely to repeat the behavior and teach it to other condors, perpetuating a cycle of dangerous behavior in the wild condor population. Condors that do not respond effectively to hazing are considered by the Service to be habituated and will be removed from the wild population temporarily or permanently for their own safety and the welfare of the rest of the wild population.

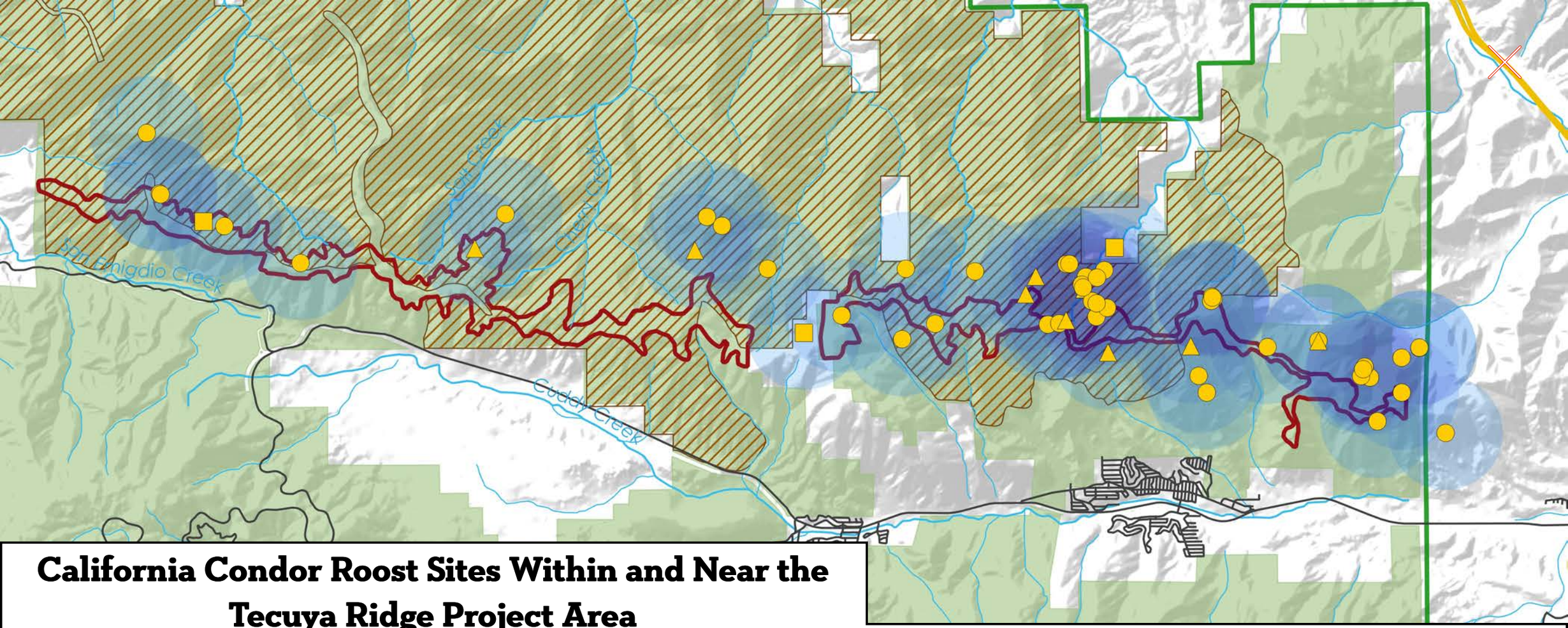
The steady expansion of condors across their historical range and years of experience in implementing hazing actions without injury has prompted the Service to develop a new strategy toward hazing to ensure that condors are provided with the most immediate and effective negative feedback possible when they come into contact with humans and human structures. Following a minimal amount of recovery program instruction, the Service concludes that individuals may safely haze condors using a variety of simple hazing actions without causing injury to the birds.

As indicated above, hazing actions are employed when necessary to startle condors so they leave areas that pose a danger to the birds, such as oil pads, buildings, roads and communication and other types of towers. Hazing actions that the Service concludes may safely be used by individuals, following instruction by the Service or our permitted recovery program partners, without a risk of injury to condors include, but are not limited to: **yelling, clapping, stomping, the use of leashed barking dogs, and the use of low pressure water hoses.** Commercially available remote controlled sprinkler systems and bird aversion products that do not involve direct human interaction with condors are also safe and effective deterrents used to protect condors from interactions with dangerous human structures.

Because the recovery program provides direction on how to safely employ these actions, they are not likely to result in injury or mortality. We specifically instruct those who will conduct the hazing to be aware of the potential for any collision hazard (e.g., fences, power lines, guy-wires, towers) in the direction of the bird's escape route, prior to the birds being hazed. If the bird cannot be hazed without risk of injury, individuals are instructed not to conduct the hazing until it is safe for the bird. Based our knowledge of and experience with condor behavior collectively gained over the course of the condor recovery program, these simple forms of hazing are benign and will contribute toward a safer environment for condors by minimizing the potential for undesirable behavior to be repeated and exacerbated in the condor population.

Because these simple and safe hazing methods are not likely to result in injury or mortality, a Section 10(a)(1)(A) recovery permit should not be necessary or required for their implementation. Requiring all individuals to go through the process of obtaining ESA Section 10(a)(1)(A) permits before hazing condors using these methods is also highly impractical given the expanding range of the condors, the increasing likelihood of human condor interactions, and the need for immediate hazing to deter condors from undesirable behaviors before they result in habituation. The regulatory challenges involved in obtaining ESA Section 10(a)(1)(A) permit would likely dissuade the average homeowner or worker from applying for such a permit. More aggressive methods of hazing such as the use of soft projectiles could result in injury to a condor if not carefully implemented by appropriately trained individuals. Therefore, the Service should continue to require individuals to obtain ESA Section 10(a)(1)(A) recovery permits before engaging in such activities.

EXHIBIT D



California Condor Roost Sites Within and Near the Tecuya Ridge Project Area

- National Forest Boundary
- USFS-Administered Land
- Antimony Roadless Area
- Road
- Interstate
- Tecuya Ridge Project Area

Condor Roosts

- Tier 1
- Tier 2
- Tier 3
- Roost Buffers (0.5 mi)

0 1 2 mi

LOS PADRES FORESTWATCH

Project area polygons were redrawn based on U.S. Forest Service scoping documents. Condor roosts were delineated using methods derived from Cogan et al. (2012). Roost buffer zones were drawn as 0.5-mile radii according to the Land Management Plan. This map was updated on June 5, 2019.

EXHIBIT E

Delineated California Condor Roost Information

Longitude	Latitude	Last Timestamp (First Day)	First Timestamp (Next Day)	Bird ID	Roost Type	Event ID
-118.956917	34.844719	2019-03-25 19:56 PDT	2019-03-26 01:01 PDT	805	Tier 1	9522287599
-118.95911	34.84881	2019-02-11 23:53 PST	2019-02-12 01:21 PST	774	Tier 1	9127100805
-118.95847	34.84979	2019-02-11 23:46 PST	2019-02-12 00:39 PST	796	Tier 1	9123319254
-118.95871	34.84824	2019-02-11 18:18 PST	2019-02-12 00:12 PST	737	Tier 3	9131821821
-119.047562	34.858517	2019-01-30 18:06 PST	2019-01-31 00:11 PST	732	Tier 1	9139188262
-118.922836	34.841381	2019-01-26 18:03 PST	2019-01-27 00:10 PST	568	Tier 1	8980542438
-118.922836	34.841331	2019-01-26 18:03 PST	2019-01-27 00:11 PST	542	Tier 3	8980545986
-118.903442	34.829533	2018-12-11 23:53 PST	2018-12-12 00:03 PST	493	Tier 1	8090621268
-118.975487	34.850643	2018-11-20 23:52 PST	2018-11-21 00:03 PST	616	Tier 1	7994670255
-118.907326	34.84037	2018-11-01 23:58 PDT	2018-11-02 00:09 PDT	509	Tier 1	7878609101
-118.907333	34.840343	2018-11-01 23:53 PDT	2018-11-02 00:03 PDT	772	Tier 1	7890137268
-118.910072	34.839119	2018-11-01 23:52 PDT	2018-11-02 00:04 PDT	462	Tier 1	7878607187
-118.93067	34.84065	2018-10-22 23:59 PDT	2018-10-23 00:06 PDT	570	Tier 1	7799013368
-118.916008	34.837719	2018-10-12 23:51 PDT	2018-10-13 00:02 PDT	740	Tier 1	7623672956
-119.016602	34.857895	2018-09-16 23:57 PDT	2018-09-17 00:08 PDT	648	Tier 1	7411614475
-119.00189	34.8431	2018-08-01 01:13 PDT	2018-08-01 06:07 PDT	642	Tier 2	6830826373
-119.1007	34.861553	2018-07-01 23:57 PDT	2018-07-02 00:07 PDT	805	Tier 1	6527263923
-119.00735	34.85126	2018-05-07 23:22 PDT	2018-05-08 00:06 PDT	77	Tier 1	5833995681
-118.956757	34.849686	2018-01-14 23:51 PDT	2018-01-15 00:02 PDT	749	Tier 1	N/A

-118.940079	34.83498	2018-01-08 23:58 PDT	2018-01-09 00:10 PDT	805	Tier 1	N/A
-119.07914	34.85258	2017-12-09 23:35 PST	2017-12-10 00:20 PST	625	Tier 1	4153090844
-118.986794	34.842163	2017-11-20 17:31 PST	2017-11-21 05:52 PST	794	Tier 1	4002643516
-118.955177	34.840202	2017-11-18 23:42 PST	2017-11-19 05:50 PST	805	Tier 3	3994681239
-118.955246	34.845848	2017-10-31 18:45 PDT	2017-11-01 00:40 PDT	599	Tier 1	3880955018
-119.018517	34.853676	2017-10-18 19:00 PDT	2017-10-19 01:00 PDT	740	Tier 3	3817330553
-118.954002	34.853455	2017-10-10 01:02 PDT	2017-10-10 06:15 PDT	568	Tier 2	3783176156
-118.96263	34.84395	2017-10-06 23:56 PDT	2017-10-07 01:01 PDT	570	Tier 1	3774063265
-118.961578	34.844318	2017-10-06 19:15 PDT	2017-10-07 06:13 PDT	846	Tier 3	3768787453
-118.966156	34.849907	2017-10-03 19:19 PDT	2017-10-04 01:01 PDT	648	Tier 3	3750415694
-118.942459	34.840889	2017-09-30 19:25 PDT	2017-10-01 06:39 PDT	483	Tier 3	3735041657
-119.05233	34.854187	2017-09-23 19:34 PDT	2017-09-24 01:02 PDT	526	Tier 3	3713247940
-119.1026	34.869217	2017-08-14 20:30 PDT	2017-08-15 01:00 PDT	627	Tier 1	3518794427
-119.093994	34.857941	2017-08-04 01:01 PDT	2017-08-04 05:24 PDT	374	Tier 2	3484663349
-118.93924	34.846588	2017-08-02 20:42 PDT	2017-08-03 01:02 PDT	369	Tier 1	3476709663
-118.939041	34.847004	2017-08-01 20:43 PDT	2017-08-02 01:02 PDT	369	Tier 1	3476709750
-118.96098	34.85146	2017-06-22 23:38 PDT	2017-06-23 00:19 PDT	774	Tier 1	3349671450
-118.955612	34.850609	2017-05-12 19:49 PDT	2017-05-13 05:55 PDT	247	Tier 1	3056350158
-119.0908	34.85734	2017-05-02 23:28 PDT	2017-05-03 00:05 PDT	625	Tier 1	2947667267
-119.100555	34.861435	2016-09-23 19:10 PDT	2016-09-24 06:26 PDT	480	Tier 1	1958773525
-119.014305	34.85675	2016-03-18 19:04 PDT	2016-03-19 07:02 PDT	360	Tier 1	120862626

-118.913902	34.831108	2016-01-12 16:59 PST	2016-01-13 07:08 PST	509	Tier 1	113121109
-118.941292	34.837112	2015-11-22 17:54 PST	2015-11-23 05:32 PST	683	Tier 1	108755941
-118.967735	34.847683	2015-11-14 17:57 PST	2015-11-15 05:42 PST	683	Tier 3	108250840
-118.958923	34.848454	2015-10-31 19:11 PDT	2015-11-01 05:11 PST	585	Tier 1	103922260
-118.96439	34.84382	2015-10-12 23:39 PDT	2015-10-13 00:23 PDT	262	Tier 1	102481435
-118.986122	34.851067	2015-09-21 18:51 PDT	2015-09-22 06:48 PDT	648	Tier 1	100578041
-118.93887	34.84687	2015-09-19 23:55 PDT	2015-09-20 00:27 PDT	625	Tier 1	100271915
-118.939117	34.847134	2015-09-19 20:05 PDT	2015-09-20 05:35 PDT	585	Tier 1	100252951
-118.996056	34.845238	2015-07-21 21:20 PDT	2015-07-22 04:45 PDT	480	Tier 1	986534650
-118.96141	34.85145	2014-11-20 23:54 PST	2014-11-21 00:59 PST	493	Tier 1	487951059
-118.957565	34.846722	2014-11-08 16:53 PST	2014-11-09 06:29 PST	648	Tier 1	479918248
-118.98171	34.84407	2014-10-22 23:55 PDT	2014-10-23 00:40 PDT	107	Tier 1	487665573
-118.915771	34.838024	2014-10-22 18:09 PDT	2014-10-23 07:14 PDT	449	Tier 1	473131847
-118.916336	34.836853	2014-10-21 18:10 PDT	2014-10-22 07:13 PDT	449	Tier 1	473131890
-118.91496	34.83666	2014-10-20 23:11 PDT	2014-10-21 00:20 PDT	107	Tier 1	487665044
-118.956863	34.846436	2014-10-03 18:33 PDT	2014-10-04 06:57 PDT	21	Tier 1	435414904
-118.91011	34.83471	2014-10-02 23:37 PDT	2014-10-03 00:17 PDT	107	Tier 1	487663367

Note: Coordinates for the first record of the second day were used as approximated coordinates for the roost site itself, timestamps were associated with specific records in the raw datasets provided by USFWS, and “Event ID” refers to the “EventId” column in each quarterly condor tracking dataset and is the value associated with the first record of the second day (this allows for easier location of the specific records in the raw datasets associated with these roosts).

EXHIBIT F

THE JOHN MUIR PROJECT
OF EARTH ISLAND INSTITUTE

CENTER for
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DIVERSITY
Because life is good.

April 19, 2018

Los Padres National Forest
Mt. Pinos Ranger District
Attn: Gregory Thompson, Project Team Leader
34580 Lockwood Valley Rd, Frazier Park, CA 93225
gsthompson@fs.fed.us

RE: Tecuya Ridge Shaded Fuelbreak Project

Dear Mr. Thompson:

Thank you for this opportunity to provide your agency with initial comments on the Tecuya Ridge Shaded Fuelbreak Project ("Project"). The Project entails constructing a 12-mile-long, 1,626-acre shaded fuelbreak along Tecuya Ridge in the Mt. Pinos Ranger District of the Los Padres National Forest. The project would be accomplished through a commercial logging operation in mixed conifer stands as well as mastication and hand treatment of up to 95 percent of sagebrush-scrub within the Project Area — approximately 1,100 acres of which are within the Antimony Inventoried Roadless Area ("IRA").

The undersigned organizations support efforts to improve ecosystem health and protect communities from wildfires, and work to ensure that vegetation treatment activities are undertaken with minimal impacts to wildlife, roadless areas, water supplies, and other forest resources. We also support the maintenance of defensible space immediately around structures along with programs to promote the construction and retrofitting of homes with fire-safe materials and design as the most effective ways to protect communities from wildfire.

We have reviewed the Project Description issued as part of the scoping process as well as supplemental documentation in full, and we have several concerns about the Project and the potential lack of further documentation in an environmental assessment ("EA") or environmental impact statement ("EIS"). We hereby submit the following comments on the U.S. Forest Service's Tecuya Ridge Shaded Fuelbreak Project. Thank you for considering these comments as the U.S. Forest Service examines ways to most effectively protect communities from wildfires while minimizing the environmental impacts of this project.

1. THE FOREST SERVICE MUST PREPARE AN EA OR EIS BECAUSE THE PROJECT DOES NOT QUALIFY FOR A CATEGORICAL EXCLUSION.

The Proposed Action states that the U.S. Forest Service intends to approve the Project using a categorical exclusion ("CE") for "timber stand and/or wildlife habitat improvement activities" (hereafter "CE 6") set forth in 36 CFR § 220.6(e)(6). Under NEPA, a CE is defined as "a category of actions which do not individually or cumulatively have a significant effect on the human environment…and for which, therefore, neither an environmental assessment nor an [EIS] is required" (40 CFR § 1508.4).

This CE does not apply to this project for three reasons. First, the Project is an action that would normally require the preparation of an EIS (40 CFR § 1501.4). Second, the presence and significance of several "extraordinary circumstances" makes this project ineligible for a categorical exclusion. Third, other CEs would be more applicable (acreage limit exceedances notwithstanding), especially considering that CE 6 does not explicitly allow commercial logging as proposed to complete the Project. For these reasons, the U.S. Forest Service must prepare an EA or EIS that fully identifies, evaluates, and mitigates potential impacts of this project.

A. The Project falls under a class of actions that normally requires preparation of an EIS.

The Project includes actions that would normally require the preparation of an EIS. Specifically, the U.S. Forest Service's NEPA Handbook identifies several classes of actions that normally require preparation of an EIS "because they normally result in significant effects." Two classes of projects are identified that meet these criteria: aerial application of pesticides (Class 1) and projects that would "substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area" (Class 2). The Proposed Action would substantially alter the undeveloped character of an IRA. This falls under Class 2 actions as outlined in U.S. Forest Service Handbook ("FSH") 1909.15.21.2. The Proposed Action includes the harvest of timber across approximately 1,100 acres of the Antimony IRA. Such action would substantially alter the undeveloped character of the Antimony IRA and therefore requires the preparation of an EIS.

B. The presence and significance of several "extraordinary circumstances" makes the Project ineligible for a categorical exclusion.

The U.S. Forest Service may only claim a CE for this Project if there are no "extraordinary circumstances." Specifically, the FSH states that "[a] proposed action may be categorically excluded from further analysis and documentation…only if there are no extraordinary circumstances related to the proposed action" (FSH 1909.15.31.1; see also 40 CFR § 1508.4 (requiring agencies to "provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect.")). There are multiple extraordinary circumstances related to the Proposed Action, detailed below. The presence of and the Proposed Action's significant impact to these resource conditions precludes the use of a CE for the Project and instead requires the U.S. Forest Service to prepare an EA at minimum.

C. The Project exceeds the acreage limitations that serve as a threshold of significance under other categorical exclusions.

The U.S. Forest Service's failure to select a more applicable CE for the Project is telling. We note three CEs (all covered under 36 CFR § 220.6(e), actions for which a project or case file and decision memo are required) that would be more applicable to the Proposed Action:

> (12) Harvest of live trees not to exceed 70 acres, requiring no more than ½ mile of temporary road construction. Do not use this category for even-aged regeneration harvest or vegetation type conversion. The proposed action may include incidental removal of trees for landings, skid trails, and road clearing.
>
> 36 CFR § 220.6(e)(12)

> (13) Salvage of dead and/or dying trees not to exceed 250 acres, requiring no more than ½ mile of temporary road construction. The proposed action may include incidental removal of live or dead trees for landings, skid trails, and road clearing.
>
> 36 CFR § 220.6(e)(13)

> (14) Commercial and non-commercial sanitation harvest of trees to control insects or disease not to exceed 250 acres, requiring no more than ½ mile of temporary road construction, including removal of infested/infected trees and adjacent live uninfested/uninfected trees as determined necessary to control the spread of insects or disease. The proposed action may include incidental removal of live or dead trees for landings, skid trails, and road clearing.
>
> 36 CFR § 220.6(e)(14)

These CEs more appropriately cover the Proposed Action as all three explicitly allow for commercial thinning, and two of the CEs are specifically for activities that treat stands with dead, dying, and infested trees — all of which are included in the Purpose and Need for the Project. However, these more appropriate CEs have explicit acreage limitations that preclude their use in this project. Those acreage limitations are important, however, as they indicate a self-imposed threshold that the U.S. Forest Service has identified to determine whether a project may have significant impacts. The U.S. Forest Service cannot try to shoehorn these projects into another CE in an attempt to avoid the acreage limitations in other CEs that better describe the Project.

It should also be noted that the U.S. Forest Service is concurrently proposing an adjacent project approximately 1,200 acres in size. The Cuddy Valley Forest Health/Fuels Reduction Project ("Cuddy Valley Project") was scoped at the same time as the Project and is just south of the Project Area (Figure 1). In fact, the two projects share a boundary near Tecuya Ridge Road. The Cuddy Valley Project entails commercially thinning mixed-conifer forest in Cuddy Valley. The project would use similar methods as the Project, and its scoping notice indicates that the U.S. Forest Service intends to use CE 6 to exempt the project from further environmental

documentation. The Cuddy Valley Project also does not qualify for CE 6 (see our comments on that project submitted separately). Combined, these projects would affect approximately 2,826 acres in the Mt. Pinos Ranger District of the Los Padres National Forest. However, they are being proposed separately despite involving the same methods for similar goals and despite using the same exact language throughout much of their respective project descriptions. The projects are so similar, in fact, that they could be viewed as a single, large project. This is problematic for multiple reasons. This action constitutes improper segmentation (i.e. the splitting of a large project into multiple smaller ones), and it may lead the public to believe that the two smaller projects may cause less significant impacts than one large project. Moreover, such segmentation may result in the U.S. Forest Service avoiding full disclosure of the cumulative impacts of both projects together. In measuring the "significance" of the overall environmental impacts of a given project, the CEQ regulations forbid an agency from attempting to avoid significance by "breaking [an action] down into small component parts" (40 C.F.R. § 1508.27(b)(7)).

Due to these disqualifications for use of CE 6, the U.S. Forest Service must re-examine the Proposed Action to determine whether the Project size can be reduced to fulfill the requirements for use of other CEs or prepare an EA or EIS to determine potential significant impacts of the Project as well as develop alternatives to the Proposed Action.

2. THE FOREST SERVICE MUST PREPARE AN EA OR EIS DUE TO THE PRESENCE OF, AND IMPACTS TO, "EXTRAORDINARY CIRCUMSTANCES."

U.S. Forest Service regulations state that "[a] proposed action may be categorically excluded from further analysis and documentation in an EIS or EA only if there are no extraordinary circumstances related to the proposed action" (36 CFR § 220.6(a)). The regulations set forth several criteria for evaluating extraordinary circumstances, including listed or sensitive species, critical habitat, wetlands, municipal watersheds, inventoried roadless areas, and Native American cultural sites (36 CFR § 220.6(b)). Additionally,

> In considering extraordinary circumstances, the responsible official should determine whether or not any of the listed resources are present, and if so, the degree of the potential effects on the listed resources. **If the degree of potential effect raises uncertainty over its significance, then an extraordinary circumstance exists**, precluding use of a categorical exclusion.
>
> FSH 1909.15.31.2 (emphasis added)

The Project involves several extraordinary circumstances, including impacts to endangered and sensitive wildlife and impacts to an IRA. For the reasons outlined below, the degree of potential effects to these extraordinary circumstances requires preparation of an EA or EIS.

A. Impacts to Species Protected Under the Endangered Species Act of 1973

The endangered California condor (*Gymnogyps californianus*) is well-known to occur in and around the Project Area. In fact, condor tracking telemetry data provided by the U.S. Fish &

Wildlife Service ("USFWS") indicate the presence of at least 14 roosting sites within the Project Area between December 2013 and December 2017. These roosting sites occur in both the eastern and western portions of the Project Area (Figure 2). An additional 24 roosting sites from this tracking period occur within 0.5 miles of the Project Area (Figure 2). As these combined 38 roosting sites can and should be considered active, the Project should be limited by S28 as defined in the Land Management Plan Part 2: Los Padres National Forest Strategy (2005b):

> S28: **Avoid or minimize disturbance** to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and **within 0.5 miles of active roosts**. Refer to California condor species account (or subsequent species guidance document; see Appendix H) for additional guidance.
>
> U.S. Forest Service 2005b (emphasis added)

As this strategy requires avoidance or minimization of activities that may cause disturbance, the U.S. Forest Service must analyze the Proposed Action more thoroughly to determine whether it will cause significant impacts to the species. The U.S. Forest Service's species account for the California condor highlights the importance of roosting sites:

> Condors often return to traditional sites for perching and resting. Traditional roost sites include cliffs and **large trees and snags (roost trees are often conifer snags 40-70 feet tall)**, often near feeding and nesting areas….
>
> Recovery objectives on National Forest System lands (**primarily the Los Padres National Forest**) include…(3) provide for maintenance and protection of nesting, **roosting**, and foraging habitat on National Forest System Lands….
>
> U.S. Forest Service 2005c (emphasis added)

The Proposed Action allows for the removal of live or dead trees of any size, including those greater than 40-70 feet tall. The removal of any trees — especially large coniferous trees — within 0.5 miles of condor roosting sites may significantly impact these important habitat features. Dead or dying "hazard" trees and large trees with relatively small diameters (less than 30 inches DBH) are precisely the types of trees on which condors depend for roosting and perching. Specifically,

> Dead conifers are preferred to living trees. Dead trees have no foliage to obstruct flight or visibility or to catch the wind and cause the branches to sway. The loss of some branches further decreases the obstruction of flight. Dead branches are stiff so that they bend and sway but little…
>
> Koford 1953

According to Koford, "[r]oosting trees are generally from 40 to 70 feet tall," and trees of this size may have diameters much smaller than 30 inches. Even smaller trees may be used for

roosting and perching, as immature condors may roost in “unsuitable” areas such as smaller trees (Koford 1953).

The Project Description not only does not acknowledge the presence of these roosting sites, but it does not describe how the Proposed Action will not impact the unique conditions that the Project Area possesses that makes it so preferable for roosting or perching. The Proposed Action will involve thinning to reduce canopy cover and basal area per acre. Opening up the canopy in or immediately adjacent to condor roosting trees will make the area more susceptible to wind, which Koford identifies as a prime determinant of roosting locations. Specifically, Koford states, “Wind influences the use of a roosting place…. It appeared that the strong wind made the usual tree roosts untenable” (Koford 1953). In summarizing, Koford closes by stating:

> For perching, condors require steady places with good footing which are easy to reach or to leave by air and where there is little disturbance by man or enemies. Roosts, in addition, must be high above the ground yet protected from strong winds, **utterly free from disturbance**, and suitably located with respect to food, water, nests, and perhaps to other condors. Any adequate program for conserving this species must provide for the preservation of a sufficient number of perching and roosting places as well as for the protection of nest sites.
>
> Koford 1953 (emphasis added)

In addition, the USFWS states that roosting sites are susceptible to disturbance threats “and their preservation requires isolation from human intrusion” (USFWS 1996). Condor roosting sites are particularly susceptible to human disturbance, and even human presence. Specifically,

> The amount of disturbance which a condor will tolerate before flushing decreases rapidly late in the day. For example, I stationed myself below a roost cliff at 4:10 p.m. when 18 condors were there. Six soon departed. The other remained until 5:30 p.m., but by 5:55 p.m. only seven remained an only two condors roosted there. On previous days more than a dozen roosted there. Many other times I had a similar experience. Mild disturbances which will not prevent condors from perching or even from drinking may prevent them from roosting. **The disturbance threshold for roosting seems to be lower than that for any other daily activity of condors…. One man, by disturbing the birds at critical places late in the day, can prevent roosting over an area of several square miles.**
>
> Koford 1953 (emphasis added)

It should be noted that condors do not necessarily roost seasonally or only during certain times of day along Tecuya Ridge. According to an analysis of the telemetry tracking data provided by the USFWS, four roosts — three of which were located within the Project Area — were occupied by condors between July 1 and September 30 and between 11 AM and 4 PM. A condor with a bird ID of #480 was present at a roost in the eastern portion of the Project Area

between 4:17 PM on July 21, 2015 until 11:20 AM on July 22, 2015. Another condor with a bird ID of #369 was present at a roost in the eastern portion of the Project Area from 4:05 PM on August 2, 2017 until 12:26 PM on August 3, 2017. A condor with a bird ID of #526 occupied a roost in the western portion of the Project Area from 4:11 PM on September 23, 2017 until 9:50 AM on September 25, 2017, spending the entire day of September 24 at the roost. Finally, a condor with a bird ID of #483 was present at a roost between 3:57 PM on September 30, 2017 until 8:05 AM on October 1, 2017. See Table 1 and Figure 2 for more information about each of these roosts. The presence of condors at roosts during the late morning and early afternoon during summer months indicates that even projects incorporating limited operating periods can still impact roosting condors.

These are precisely the reasons why the Land Management Plan requires implementation of half-mile buffer zones around active condor roosts (U.S. Forest Service 2005b). The U.S. Forest Service's species account for the California condor also identifies the primary potential threats to California condors:

> Potential threats to California condors from resource management activities on National Forest System lands include **modification or loss of habitat or habitat components (primarily large trees)** and behavioral disturbance to nesting condors caused by vegetation treatment activities.
>
> U.S. Forest Service 2005c (emphasis added)

Given the frequent use of the Project Area as a condor roosting area and the acknowledged potential that vegetation treatment projects may have on the habitat components of roosting areas, the best available science indicates that the Forest Service must prepare an EA or EIS to determine the extent to which the Proposed Action may affect the species or its habitat in the Project Area and ultimately avoid all Project activities within a half-mile of roost sites.

Another species the U.S. Forest Service must consider when determining significant impacts to extraordinary circumstances is the California spotted owl (*Strix occidentalis occidentalis*; "CSO"), a species currently under review for protection under the ESA and that has been observed within 100 feet of the Project Area. The Project Area also contains several hundred acres of suitable habitat for the CSO.

Current research indicates that fuel treatments may negatively impact CSOs. A study in 2014 examining the effects of establishing a network of fuelbreaks on various species including the California spotted owl found, in response to fuel treatments:

> …the number of California spotted owl territories declined. The effects on owls could have been mitigated by increasing the spatial heterogeneity of fuel treatments....
>
> Stephens et al. 2014

A portion of the Project Area was also impacted by the 2006 Scott Fire, which created snag forest habitat suitable for CSOs. Research suggests that recently-burned areas can provide suitable habitat for California spotted owls. For example, a 2015 study found that:

> Based on this and other studies of Spotted Owls, fire, and logging, we suggest land managers consider burned forest within and surrounding [protected activity centers ("PACs")] as potentially suitable California Spotted Owl foraging habitat when planning and implementing management activities….
>
> Lee and Bond 2015; see also Bond et al. 2009a, Lee and Bond 2015, and Hanson et al. 2018

These studies indicate that California spotted owls may be able to thrive in post-fire landscapes and that fuel treatment may have a negative impact on spotted owl communities.

The U.S. Forest Service has also identified vegetation removal and human disturbance as two of the primary factors threatening the viability of spotted owls according to its species account, likely due to its complex habitat needs. The agency's species account for the CSO highlights the species' need for complex habitat in Southern California mountains:

> California spotted owl habitats are consistently characterized by greater structural complexity compared to available forest habitat….
>
> - Canopy closure of at least 60 and commonly greater than 70 percent.
> - A mature overstory with average **[diameter at breast height ("DBH")] exceeding 24 inches**.
> - A densely stocked stand with basal areas averaging in excess of 190 ft^2, **with none less than 160 ft^2**.
> - Much of the basal area in the overstory and mid-story, with stands having an average of 10 trees exceeding 26 inches DBH and 29 trees of 16 to 26 inches DBH per acre.
> - Multi-layered stands, often having hardwood understories.
> - Decadent stands containing large diameter snags, trees with broken tops, diseased trees in which cavities frequently form, and large diameter fallen trees.
>
> U.S. Forest Service 2005c

The U.S. Forest Service completed the *Conservation Strategy for the California Spotted Owl (*Strix occidentalis occidentalis*) on the National Forests of Southern California* ("CSO Conservation Strategy") in 2004. The CSO Conservation Strategy presents the following guidelines for fuels management activities outside of the WUI Defense or Threat Zones on national forest land characterized by pine and mixed conifer forest:

- Where treatments have to occur in PACs and [home range core areas ("HRCs")], retain existing canopy closure in the PAC and 40 to 50 percent canopy closure in the HRC. In PACs, use understory treatments to remove ladder fuels rather than altering canopy closure….
- Retain the largest trees within PACs and [home range cores ("HRCs")], **including all live trees greater than 24 inches DBH**, unless they are at unnaturally high densities. Exceptions allowed for operability.
- Within PACs and HRCs, retain 4 to 8 of the largest snags available per acre, or at least 20 ft^2 basal area per acre of snags greater than 15 inches DBH and 20 feet tall.
- Within PACs and HRCs, retain at least 9 down logs per acre of the largest logs available, ideally at least 12 inches in diameter and at least 20 feet long (at least 180 lineal feet of logs).
- During mechanical fuel treatment activities, retain all woodrat nests in spotted owl habitat; avoid disturbing/destroying them. Exceptions allowed for operability.

U.S. Forest Service 2004

According to the California Natural Diversity Database ("CNDDB"), dozens of CSO detections were reported and the U.S. Forest Service has designated five protected PACs near the Project Area. The Project would reduce the old-growth stands of pinyon, ponderosa, and Jeffrey pine as well as white fir and bigcone Douglas-fir to between 40 and 60 ft^2 basal area per acre — well below the basal area per acre needed by CSO. Additionally, the Project would involve the removal of trees throughout all diameter classes, including those greater than 24 inches DBH. Moreover, approximately 45% of the Project Area (or 732 acres) is within estimated CSO HRCs according to a GIS analysis. We used the U.S. Forest Service's PAC database and found five PACs just north of the Project Area (ranging from 2 – 187 acres in size). We calculated a simple geographic centroid for each PAC and created a circular buffer with a 1.5-mile radius around it as suggested by the CSO Conservation Strategy. These buffer zones overlapped approximately 732 acres of the western portion of the Project Area (Figure 3).

The Project does not align with the CSO Conservation Strategy for several reasons. Trees from all diameter classes — including those greater than 24 inches DBH — within HRCs would be removed. Additionally, the Project Description indicates that 10 to 15 hard snags will be retained per five acres. The Proposed Action does not specifically include the retention of downed logs, stating only that "[d]ead and down material left after treatment should be less than 10 tons per acre in the forested treatment areas where available." This indicates that the Project may remove all dead and down material from forested treatment areas. Finally, the Proposed Action does not include any measures to retain woodrat nests in the Project Area.

The presence of these guidelines in the CSO Conservation Strategy indicates that the U.S. Forest Service has determined or is aware that impacts to CSOs could occur if such guidelines are not followed. It is therefore reasonable to expect that the Project would have significant impacts on CSOs as the Proposed Action does not follow these guidelines. Again, due to this likelihood of significant impacts to CSOs, the U.S. Forest Service must prepare an EA to determine the degree to which the Proposed Action may affect this species proposed for listing under the ESA.

B. Impacts to Sensitive Animal Species

The CSO is a Forest Service Sensitive Species, and as previously discussed, the Project may impact CSO populations near the Project Area.

The Project may impact the northern goshawk (*Accipiter gentilis*), which has been observed in the vicinity of the Project. Records of active goshawk nests in the Tecuya Range exist as recently as 1991 according to the California Department of Fish and Wildlife's ("CDFW") species account (CDFW 2008). A northern goshawk was detected on Frazier Mountain, just south of the Project Area in 2010 (U.S. Forest Service 2012). Additionally, there have been undocumented reports of northern goshawks in the Antimony IRA according to the U.S. Forest Service's analysis of the Antimony IRA — which comprises approximately 1,100 acres of the Project Area — while amending the Land Management Plan (U.S. Forest Service 2013). This U.S. Forest Service Sensitive Species and Species of Special Concern (CDFW) may also occur within the Project Area, which includes portions of the species' predicted habitat according to CDFW (Figure 4). As there is uncertainty as to whether the species occurs within the Project Area and how it may be affected by the Proposed Action, the U.S. Forest Service should prepare an EA or EIS that analyzes the Project's potential impacts to the species in addition to conducting focused protocol surveys in the area to better understand if and where the species is nesting, foraging, etc.

Another U.S. Forest Service Sensitive Species, the Tehachapi pocket mouse (*Perognathus alticola inexpectatus*), likely occurs within and around the Project Area. According to the CNDDB, there have been observations of the species within 0.25 miles of the Project Area (Figure 5). However, survey data is very limited for this species throughout its range, and its population status within its range is relatively unknown. The EA prepared by the U.S. Forest Service in 2012 for the Frazier Mountain Project noted that surveys for the species were needed:

> Surveys are needed to determine the distribution and relative abundance of this species on public lands within the assessment area….
>
> U.S. Forest Service 2012

The need for focused surveys also applies to the Project since it may occur in the Project Area. The California Wildlife Habitat Relationships information system developed by CDFW indicates that several small areas within and around the Project Area are predicted habitat for the species (Figure 5). It is reasonable to assume that the species may occur in these areas and may be impacted by the Proposed Action. In fact, in 2012 the U.S. Forest Service indicated that

future fuel reduction projects near mountain communities would likely impact the Tehachapi pocket mouse:

> Cumulative effects: **Sensitive species are likely to be impacted by similar ongoing and future drought-related fuel reduction projects, especially close to mountain communities.** These projects have the potential to change forest floor vegetative components and microclimates, potentially changing the suitability for various sensitive and watch list species. **This is especially important for a species with such limited distribution as the Tehachapi pocket mice** which are only known from a few scattered localities.
>
> U.S. Forest Service 2012 (emphasis added)

An analysis by CDFW in 1998 determined that U.S. Forest Service efforts were needed to safeguard the species:

> The Department should continue its efforts of: i) funding focused surveys trapping efforts; ii) encouraging mammalogists, graduate students, and field biologists to undertake research and field surveys; and iii) **requiring that the environmental review of projects in appropriate habitat within the species' historic range contain adequate focused surveys for the species. The U.S. Forest Service should also undertake further surveys in the Angeles and Los Padres national forests….**
>
> If one or more populations of a. alticola are found, the responsible agencies, in consultation with the Department, should: i) evaluate the need for emergency protective measures to ensure the species' survival, ii) **determine the habitat requirements of the species and adjust resource management practices within the national forests accordingly,** and iii) identify private landowners whose properties support the species and work to find land management strategies that are mutually beneficial.
>
> Brylski 1998 (emphasis added)

Specifically, the U.S. Forest Service should conduct focused surveys of the Project Area as part of an analysis to determine how the Proposed Action may impact the species. As these surveys have, to our knowledge, not been done already, considerable uncertainty about the presence of the species in the Project Area and the potential impacts of the Proposed Action exists, requiring the U.S. Forest Service to at least prepare an EA for the Project.

C. Impacts to Sensitive Plant Species

There is one known occurrence of the rare, U.S. Forest Service Sensitive Species Mt. Pinos onion (*Allium howellii* var. *clokeyi*) on Tecuya Ridge (botanist Pam De Vries, pers. comm.). More focused surveys are needed to determine the extent to which the species occurs in the Project Area. However, the known occurrence on Tecuya Ridge would likely be impacted by the Proposed Action, which includes significant ground disturbance of habitat suitable for the

species. There are also likely occurrences of the Fort Tejon woolly sunflower (*Eriophyllum lanatum* var. *hallii*) in the Project Area due to records in proximity just east of the Project Area (Figure 6). The U.S. Forest Service, facing uncertainty as to the extent of the species and the potential impacts of the Proposed Action, must prepare at least an EA to determine how significant these effects may be.

D. Impacts to Antimony IRA

The Antimony IRA extends across nearly 40,513-acres of the San Emigdio Mountains. Elevations range from 3,250 in the San Joaquin Valley foothills to 7,495 feet atop San Emigdio Peak. Several other peaks — including Brush Mountain, Antimony Peak, Escapula Peak, and Tecuya Mountain — dominate the landscape. San Emigdio Creek bisects the area, and other drainages include Pleito Creek, Santiago Creek, Cloudburst Canyon, Tecuya Creek, Bradley Canyon, and Deadman Canyon. Most of the area is forested with pinyon pine and other conifers. The IRA borders the Wind Wolves Preserve — the largest privately-owned nature reserve on the West Coast — and is adjacent to the Bitter Creek National Wildlife Refuge, where endangered California condors are reintroduced into the wild.

In addition to the forced type-conversion of sagebrush-scrub habitat and the removal of most trees across the Project Area, the Proposed Action also includes creation of skid trails and landing areas that would impact the undeveloped character of the Antimony IRA.

Please note that "roadless character" is not limited to the construction, maintenance, or use of roads; rather, "roadless character" as defined in the 2001 Roadless Area Conservation Rule ("Roadless Rule") refers to many things, including:

> (1) High quality or undisturbed soil, water, and air;
> (2) Sources of public drinking water;
> (3) Diversity of plant and animal communities;
> (4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
> (5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;
> (6) Reference landscapes;
> (7) Natural appearing landscapes with high scenic quality;
> (8) Traditional cultural properties and sacred sites; and
> (9) Other locally identified unique characteristics.
>
> 36 CFR § 294.11

The removal of most sagebrush-scrub and a majority of trees across the 1,100 acres of the Antimony IRA within the Project Area would substantially alter the roadless character of the Antimony IRA due to the likely impacts to the diversity of plant and animal communities, habitat for the endangered California condor and proposed California spotted owl, and natural appearing landscapes with high scenic quality (much of the Project Area is designated as having

"high" scenic integrity by the Land Management Plan Part 2: Los Padres National Forest Strategy issued in 2005).

In addition, roadless areas possess unique characteristics that should automatically trigger the preparation of an EIS. Logging the IRA here produces "environmentally significant" impacts on the area's unique attributes and its potential for wilderness designation (*Lands Council v. Martin*, 529 F.3d 1219, 1230 (9th Cir. 2008), (citing *Smith v. U.S. Forest Serv*., 33 F.3d 1072 (9th Cir. 1994))). Moreover, the CEQ regulations themselves specify that "[p]roposals that would substantially alter the undeveloped character of an inventoried roadless area" normally require the preparation of an EIS (36 C.F.R. § 220.5(a)(2)).

3. THE PROJECT IS INCONSISTENT WITH THE ROADLESS RULE.

The Project includes timber harvest across over 1,100 acres of the Antimony IRA. The Roadless Rule clarifies the extent to which timber harvest may or may not occur in IRAs:

> (a) **Timber may not be cut, sold, or removed in inventoried roadless areas of the National Forest System**, except as provided in paragraph (b) of this section.
>
> (b) Notwithstanding the prohibition in paragraph (a) of this section, timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following circumstances exists. **The cutting, sale, or removal of timber in these areas is expected to be infrequent.**
>
> (1) The cutting, sale, or removal of **generally small diameter** timber is needed for one of the following purposes **and will maintain or improve one or more of the roadless area characteristics as defined in § 294.11**.
>
> (i) To **improve** threatened, endangered, proposed, or sensitive species habitat; or
>
> (ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of **uncharacteristic wildfire effects**, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;
>
> (2) The cutting, sale, or removal of timber **is incidental to the implementation of a management activity** not otherwise prohibited by this subpart;
>
> (3) The cutting, sale, or removal of timber **is needed and appropriate** for personal or administrative use, as provided for in 36 CFR part 223; or
>
> (4) Roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction of a classified road and **subsequent timber harvest**. Both the road construction and subsequent timber harvest must have occurred after the area was designated an inventoried roadless area and prior to January 12, 2001. Timber may be cut, sold, or

> removed only in the substantially altered portion of the inventoried roadless area.
>
> 36 CFR § 294.13 (emphasis added)

The Project does not meet any of the criteria established in 36 CFR § 294.13(b). Particularly, the Project cannot be classified under 36 CFR § 294.13(b)(1) for two reasons: the Proposed Action would negatively impact threatened, endangered, proposed, or sensitive species habitat rather than improve it and the Proposed Action will not reduce the risk of uncharacteristic wildfire effects since mixed-severity fire is characteristic of mixed-conifer forests (see Odion et al. 2014).

Additionally, the Proposed Action states that "generally only smaller trees (21 inches [DBH] or less) would be cut or removed within the IRA." This is problematic for two reasons. First, this design feature is not specific, including a vague term such as "generally" with no indication of how many trees greater than 21 inches DBH will be removed from the IRA during the Project. Second, the size threshold of 21 inches DBH, below which the U.S. Forest Service is considering "smaller," is inappropriate. As the Roadless Rule does not define a threshold for tree size, stating only that "generally small diameter" trees may be cut for very specific purposes (which do not apply to the Project as described above), the U.S. Forest Service must define such a size threshold by which to limit the Proposed Action in the Antimony IRA. However, the U.S. Forest Service has acknowledged trees as being "smaller" when less than 10 inches DBH in a similar project on Frazier Mountain. The U.S. Forest Service developed a preferred alternative for the Frazier Mountain Project that would have limited timber harvest to 10 inches DBH or less. They noted:

> …Alternative 3 where the understory thinning would only remove smaller diameter trees (thin from below up to 10" diameter [DBH]) and would leave the larger diameter (>10" diameter [DBH]) trees.
>
> U.S. Forest Service 2012

Thus, the agency has previously acknowledged that trees may be defined as "smaller" when much less than 21 inches DBH. It should be noted that the Frazier Mountain Project did not include treatment within an IRA, and was therefore not limited by the Roadless Rule. It is therefore reasonable to assume that the U.S. Forest Service is aware that the 21 inches DBH limit they have suggested for the portions of the Project that will occur in the Antimony IRA would not qualify as "generally small diameter" as set forth in the Roadless Rule (see *Sierra Club v. Eubanks*, 335 F. Supp. 2d 1070 (E.D. Cal. 2004)).

Furthermore, the Project cannot be classified under 2 – 4 of 36 CFR § 294.13(b) for multiple reasons. The cutting, sale, or removal of timber would not be incidental to the implementation of a management activity as the removal of timber is the primary focus of the Project. In fact, the Proposed Action would remove approximately 60% of the live tree basal area in the IRA portion of the Project Area — a significant impact to the character of the Antimony IRA. The timber harvest proposed in the Project is not needed or appropriate for personal or

administrative use under 36 CFR § 223. And the Project Area has not been subject to a timber harvest that would have substantially altered the portion of the Antimony IRA that falls within the Project Area before January 12, 2001. Therefore, in compliance with the 2001 Roadless Rule, timber may not be cut, sold, or removed in the Antimony IRA during this Project. This prohibition would inhibit most of the Proposed Action on over 1,100 acres within the Project Area.

4. THE U.S. FOREST SERVICE HAS PREPARED AN EA OR AN EIS FOR SIMILAR AND SMALLER PROJECTS THROUGHOUT THE LOS PADRES NATIONAL FOREST.

The U.S. Forest Service indicated in its scoping notice for the Project that they intend to use a CE to exempt the Project from EA or EIS preparation. The use of a CE for this project does not align with the U.S. Forest Service's decision to prepare an EA or an EIS for several similar and smaller projects across the Los Padres National Forest.

The Monterey Ranger District's Strategic Community Fuelbreak Improvement Project is still under analysis as of the writing of this letter. First proposed in 2012, a draft EIS ("DEIS") for the project was released in early 2017. The DEIS included a proposed action of establishing and enhancing 24.1 miles of fuelbreaks in the Big Sur area. The treatment area for the entire project was estimated to be 542 acres. The scoping notice first issued in 2012 indicated that the project would undergo EIS preparation, presumably due to the project's scope and potential impacts to wilderness. By area alone, the Strategic Community Fuelbreak Improvement Project is smaller than the currently-proposed Project. In fact, the current Project would treat an area three-times as large as the project on the Monterey Ranger District. However, the U.S. Forest Service is seeking to apply a CE rather than develop even an EA to determine whether EIS preparation is needed. While the Project would not impact wilderness, it will have a comparable impact on the Antimony IRA as detailed in the previous section. The U.S. Forest Service is required to consider these potential significant impacts to an IRA in a similar manner as it would consider impacts to a wilderness. We strongly recommend that the U.S. Forest Service develop an EIS for the Project as the agency has already done for the smaller Strategic Community Fuelbreak Improvement Project.

The Mt. Pinos Ranger District announced the Frazier Mountain Project — a project similar in scope to the currently-proposed Project — in 2010. This project entailed the commercial logging, mechanical vegetation removal, prescribed burns, and fuelbreak construction on 2,386 acres on and around Frazier Mountain in the Los Padres National Forest. In the project's scoping notice, the U.S. Forest Service indicated that an EA would be prepared for the project. This was ultimately completed in 2012, at which time a decision memo was issued stating that the preferred alternative that did not include a commercial timber harvest was selected.

In 2005, the Santa Lucia Ranger District announced the Figueroa Mountain Project, which entailed thinning and vegetation clearing across 665 acres. A CE was initially considered to exempt this project from further NEPA documentation, but after working with ForestWatch and

other members of the public, the U.S. Forest Service decided to prepare an EA for the project. This EA was completed and released in 2006, and it included several environmental constraints that improved the proposed action over the initially-proposed project.

Since 2007, no new vegetation removal or thinning projects have been approved in the Los Padres National Forest using a CE. Since this time, all new vegetation clearing projects have either been completed following the preparation of an EA or EIS or cancelled after scoping. The U.S. Forest Service should follow its previous decisions in preparing — at minimum — an EA for the current Project, which entails similar project activities across a larger area.

5. THE PROJECT IS INCOSISTENT WITH THE LAND MANAGEMENT PLAN FOR THE LOS PADRES NATIONAL FOREST.

The Land Management Plan gives deference to local community wildfire protection plans ("CWPPs") to determine the extent of the WUI and its Defense and Threat Zones (2005b). Indeed, the U.S. Forest Service worked with the Mt. Pinos Communities Fire Safe Council ("MPCFSC") to develop the Mt. Pinos CWPP. This CWPP — discussed in further detail in the following section — defines the Defense and Threat Zones combined as the area within 1,820 feet from the edge of the Frazier Park, Lake of the Woods, and Pinon Pines Estates communities. However, only approximately 115 acres of the proposed 1,626-acre Project is located within the Threat Zone. Furthermore, this is a generous estimate, as developed parcels located more than one quarter-mile from community centers were used to delineate the approximate Threat Zone (the Mt. Pinos CWPP primarily focuses on community centers to recommend vegetation projects in the Defense and Threat Zones).

The Project is therefore inconsistent with the Land Management Plan, as it proposes vegetation treatment for the direct protection of communities, yet does not adhere to the Mt. Pinos CWPP due to its location outside of the Threat Zone (as defined by the Mt. Pinos CWPP) and its prioritization over other community needs such as the projects recommended by the CWPP (for example, the Frazier Park North Defensible Space Zone project). There is a more detailed analysis of the Project's inconsistency with the Mt. Pinos CWPP in the following section.

Additionally, much of the Project Area is located in the Back Country Motorized Use Restricted ("BCMUR") zone as designated by the U.S. Forest Service in 2005. The Land Management Plan Part 2 says of this zone:

> Wildland/Urban Interface Threat Zones (see Appendix K in Part 3 of the forest plan) are characteristic of this zone. Managers anticipate locating community protection vegetation treatments that require permanent roaded access (such as fuelbreaks) within the Back Country Motorized Use Restricted zone.
>
> U.S. Forest Service 2005a

The Land Management Plan goes on to state:

> Although this zone allows a range of low intensity land uses, **the management intent is to retain the natural character of the zone** and limit the level and type of development.
>
> U.S. Forest Service 2005a (emphasis added)

Thus, the Project does not align with the Land Management Plan as it is not only located outside of the Threat Zone (as detailed above) but also does not contribute to retaining the natural character of the BCMUR zone.

6. THE PROJECT IS INCONSISTENT WITH THE MT. PINOS COMMUNITY WILDFIRE PROTECTION PLAN.

The Mt. Pinos CWPP created by HangFire Environmental for the MPCFSC in 2006 defines the WUI as being comprised of three zones: the Defense Zone, Threat Zone, and Wildland Zone. The "Defense Zone" is the area within 500 feet of developed parcels, the Threat Zone is a 0.25-mile buffer around the Defense Zone, and the area beyond the Threat Zone is the Wildland Zone. The Mt. Pinos CWPP prioritizes vegetation alteration projects in the Defense and Threat Zones.

Indeed, the CWPP highlights the need for an enhanced shaded fuelbreak just north of Frazier Park and defensible space zones directly adjacent to the communities of Frazier Park, Lake of the Woods, and Pinon Pine Estates (both of which include aspects of a shaded fuelbreak) which are shown in Figure 7. The "Frazier Park North Fuelbreak," "Frazier Park North Defensible Space Zone," "Lake of the Woods Defensible Space Zone," and "Pinon Pines Defensible Space Zone" projects consist of enhancing an existing 150-foot, two-mile-long fuelbreak almost entirely within Frazier Park's Threat Zone and enhancing and establishing up to 300 feet of defensible space directly adjacent to Lake of the Woods and Pinon Pines Estates. Additionally, the Mt. Pinos CWPP identifies the need for the U.S. Forest Service to work with adjacent private landowners to allow them the ability to establish defensible space directly around structures when their structures are within 100 feet of U.S. Forest Service-administered land. We generally support these projects — especially the cooperative establishment of defensible space directly around structures — as they are well-within the WUI and are likely effective measures to protect the communities along Frazier Park Mountain Road in the event of a wildfire.

The Project includes establishment of a 12-mile-long shaded fuelbreak that is 3,400 feet wide in some areas, most of which is located more than one mile from Frazier Park, more than 1.4 miles from Lake of the Woods, and more than 0.5 miles from Pinon Pines Estates — well outside of the Threat Zone as defined in the Mt. Pinos CWPP. The Project is a substantially larger undertaking that deviates from the smarter and likely more cost-effective projects describe above and identified in the Mt. Pinos CWPP. We recommend revisiting the projects originally determined to be needed in the Mt. Pinos CWPP.

Additionally, the Project was not identified as a need or goal in the original Mt. Pinos CWPP. In fact, Tecuya Ridge was not mentioned throughout the entire original 181-page document. However, the CWPP was updated in 2009 with a simple table of proposed and existing projects that includes the "Tecuya Ridge Fuel Break" project. This project includes few details, stating only that it would be a "fuel break that follows the ridgeline above Frazier Park-Pine Mountain" and that it would be 300 feet wide and 12 miles long (MPCFSC 2009). These are the only details provided in the update — there is no further explanation for the need for such a fuelbreak. Additionally, ForestWatch and other interested parties were not made aware of the update before it was incorporated into the CWPP.

It is important to note the intended protocol for the development of CWPPs. These important plans are supposed to be developed using an open and collaborative process including a broad range of stakeholder groups. The framework for this collaborative process was initially outlined in "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Strategy," approved in August 2001 by the Western Governors' Association ("WGA"), the Secretaries of the Departments of Agriculture and the Interior, and many others. The 10-Year Strategy outlines a comprehensive approach to managing wildland fire, hazardous fuels, and ecosystem restoration on Federal and adjacent lands, and states:

> Successful implementation will include stakeholder groups with broad representation including Federal, State, and local agencies, tribes and the public, collaborating with local line officers on decisionmaking to establish priorities, cooperate on activities, and increase public awareness and participation to reduce the risks to communities and environments. Ongoing communication among these three levels should facilitate the exchange of technical information to make fully informed decisions and should include specific outreach and coordination efforts.
>
> WGA et al. 2001

Building upon this guiding principle of collaboration, Congress passed the Healthy Forests Restoration Act of 2003 ("HFRA") to "reduce wildfire risk to communities…through a collaborative process" (16 U.S.C. §6501(1)). The HFRA established a process for the development of CWPPs "in consultation with interested parties" (16 U.S.C. § 6511(3)).

This collaborative process was further defined in the 10-Year Strategy Implementation Plan, titled "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Strategy Implementation Plan," approved in December 2006 by the WGA and others. In this implementation plan, the authors of the 10-Year Strategy established a Collaborative Framework for the development of CWPPs. At the heart of this Collaborative Framework is the understanding that "in order to be successful, implementation must involve communication and collaboration across ownership boundaries, administrative jurisdictions, and areas of interest" (WGA et al. 2006).

One of the benchmarks of successful collaboration that is specifically identified in the Implementation Plan includes:

> • **Include Diverse and Balanced Stakeholder Representation**. Potential stakeholders include local property owners, local governments, tribal representatives, industry groups, conservation groups, academics, scientists, and the interested public. Collaborative organizers should make a reasonable effort to include balanced representation from relevant interests in the collaborative process.
>
> WGA et al. 2006

Finally, this collaborative process is outlined in great detail in *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* ("CWPP Handbook"), prepared in March 2004 by the Communities Committee, the National Association of Counties, the National Association of State Foresters, the Society of American Foresters, and the Western Governors' Association. The CWPP Handbook sets forth the minimum requirements for a CWPP, and topping that list is that a CWPP "must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties" (Communities Committee et al. 2004). Specifically:

> Substantive input from a diversity of interests will ensure that the final document reflects the highest priorities of the community. It will also help to facilitate timely implementation of recommended projects. In some circumstances, the core team may wish to invite local community leaders or stakeholder representatives to work along with them in final decisionmaking.
>
> As early as possible, core team members should contact and seek active involvement from key stakeholders and constituencies such as:
>
> - Existing collaborative forest management groups
> - City Council members
> - Resource Advisory Committees
> - Homeowners Associations—particularly those representing subdivisions in the WUI
> - Division of Wildlife/Fish and Game—to identify locally significant habitats
> - Department of Transportation—to identify key escape corridors
> - Local and/or state emergency management agencies
> - Water districts—to identify key water infrastructure
> - Utilities
> - Recreation organizations
> - Environmental organizations
> - Forest products interests

- Local Chambers of Commerce
- Watershed councils

Communities Committee et al. 2004

Furthermore, "[t]he discussion and identification of community priorities should be as open and collaborative as possible" (Communities Committee et al. 2004).

Unfortunately, the 2009 update to the Mt. Pinos CWPP was not a collaborative process as required by HFRA. ForestWatch and other interested parties were not notified with an opportunity to join the development of an update to the CWPP, even though we have been involved in nearly every vegetation treatment project proposed by the Forest Service in the Mt. Pinos area since 2005. If the Mt. Pinos CWPP will continue to be used as justifying the need of the Project, the U.S. Forest Service should include further documentation about how a ridgeline fuelbreak on Tecuya Ridge was added to the CWPP, including why it is needed to protect the communities along Frazier Park Mountain Road. This explanation should also include how the update was conducted through a collaborative process, if applicable.

7. THE U.S. FOREST SERVICE FAILED TO FACILITATE AN ADEQUATE SCOPING PROCESS FOR THE PROJECT.

The Project Description does not contain the level of detail required by NEPA and U.S. Forest Service directives implementing NEPA. Because of this lack of detail, interested agencies and the public cannot formulate meaningful comments on this proposal.

First, NEPA requires scoping to be an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR § 1501.7). U.S. Forest Service directives emphasize the importance of scoping in achieving NEPA compliance, stating that:

> The **most important** element of the scoping process is to **correctly identify and describe** the proposed action. Elements of the proposed action include the nature, characteristics, and scope of the proposed action, the purpose and need for the proposed action, and the decision to be made.
>
> CWPP Handbook (emphasis added)

An adequate project description assists the public and interested agencies in identifying issues and providing meaningful comments. To this end, the General Counsel of the Council on Environmental Quality ("CEQ") has concluded that

> Scoping cannot be useful until the agency knows enough about the proposed action to identify most of the affected parties, and to present a **coherent proposal** and a suggested initial list of environmental issues **and alternatives**. Until that time there is no way to explain to the public or other agencies what you want them to get involved in.
>
> CEQ 1981

The Project Description fails to present such a "coherent proposal." Instead, the Proposed Action is described as being needed for disparate reasons such as reducing tree stand densities, treating areas of bark beetle infestation, and providing a safe space for firefighters in the event of a wildfire in or near the Project Area. Moreover, both the scoping letter and the Project Description fail to specify the duration of the Project and at what time of year it will be implemented.

An appropriate scoping letter contains "a brief information packet consisting of a description of the proposal, **an initial list of impacts and alternatives**, maps, drawings, and **any other material or references that can help the interested public to understand what is being proposed**" (CEQ 1981) (emphasis added). The Project's scoping letter falls far short of this guidance. For example, the letter and Project Description are missing an initial list of impacts and alternatives. Thus, the public does not know what the main issues are surrounding this proposal and therefore cannot frame appropriate comments. Additionally, the U.S. Forest Service did not provide either a list of references or a packet containing all of the works cited in the Project Description. The Project Description should have at least contained a list of references at the end of the document so that the public could easily look up references they may have wanted to examine in further detail. The Project Description only included in-text citations that did not provide enough information about the publication being cited. This is just another hinderance to the public's ability to better understand what is being proposed and the literature the U.S. Forest Service is using to justify such actions.

We urge the U.S. Forest Service to re-issue a scoping letter that complies with NEPA and U.S. Forest Service directives. An adequate scoping letter is particularly important in cases where CEs are involved, because the scoping letter is the only document the public sees before a decision is made. This will enable the public to participate meaningfully in the process.

8. THE U.S. FOREST SERVICE WAS UNABLE OR UNWILLING TO PROVIDE DOCUMENTS REQUESTED DURING THE COMMENT PERIOD FOR THE PROJECT.

The scoping process for this Project has been significantly compromised — and the public's ability to participate in it has been significantly reduced — due to the lack of information provided to the public. Specifically, key Forest Service personnel have been out of the office and unavailable during most of the scoping period; minimal documentation has been made available to the public despite repeated requests; and the Project Area is relatively inaccessible and requests for access have been denied. Curiously, these hurdles to public participation could have been easily avoided had the Forest Service not rushed to prematurely issue the scoping notice.

The scoping notice for the Project was issued on March 13, 2018. ForestWatch submitted a request via email for additional information to the project lead, Gregory Thompson, on March 15, 2018. This request was for a copy of any specialist reports for the Project. That same day, Mr. Thompson responded to our request, but he did not send any specialist reports for the

Project as they had not been completed at that time. We then sent a follow-up email on March 15 indicating the difficulty for the public to prepare meaningful comments without important information such as would be found in the Biologist Report or an extraordinary circumstances analysis and requested access to the Project File as well as any shapefiles associated with the Project. Mr. Thompson responded on March 15 indicating that the specialist reports would possibly be available in May, 2018 — well after the close of the public comment period for the scoping portion of the Project (which may be the only public comment period if the Project is exempted from further NEPA documentation through use of a CE) — and listing the files that were available to share. These files were limited to the following:

1. Proposed Action
2. Scoping Letter
3. Scoping List
4. Los Padres Land Management Plan
5. Mt. Pinos CWPP
6. Mt. Pinos CWPP Update
7. Los Padres Strategic Fuel Break Assessment

In the same email response, Mr. Thompson indicated that he would check with the Project's GIS specialist to see if they had any shapefiles associated with the Project.

We then submitted a request via email for copies of the Scoping List and the Mt. Pinos CWPP Update on March 19. Mr. Thompson responded on March 20 with a copy of the Scoping List for the Project and indicated that he would update the Project's webpage to include the Mt. Pinos CWPP Update.

On March 23, we submitted another request via email for the following:

1. Maps of all California spotted owl activity centers (or home range core areas) in the Project Area
2. Field plot data from the stand exams that were conducted for the Project Area, including basal area data if collected.
3. A list (and/or maps if available) of threatened, endangered, proposed, and sensitive species in the Project Area

We received a response via email from Kyle Kinports, the Los Padres National Forest's NEPA Coordinator, on March 23 stating that Mr. Thompson "will be out of the office the next few weeks." Mr. Thompson then responded on April 11 indicating that he would be working with the Los Padres National Forest Freedom of Information Act ("FOIA") Coordinator "to evaluate the requested information to see what is releasable." On April 16 — three days before the scoping comment deadline — we received another response from Mr. Thompson that included a portion of the requested stand data for the Project Area. The response also addressed other portions of our previous request. In that email, he states: "As far as the California spotted owl activities centers, our biological specialist is currently looking at this information and currently does not have a map ready. **The specialist has just started looking at the project** and once she

finishes her reports we will be making them available to the public. As far as a list and or maps of threatened, endangered, proposed, and sensitive species, our specialists are currently putting this information together and once they have the specialists reports completed they will also be made available to the public…." (emphasis added). In that response, Mr. Thompson only provided us with the basal area data from the requested stand exam field plot data. On April 16, we sent another request to Mr. Thompson for the remainder of the field plot data — the tree density (trees per acre) data. We ultimately received a response from Mr. Thompson on April 17 stating that he did "not have a report with the requested information to be able to provide" to us despite the fact that the Project Description noted that "[s]tand exams show that the project area average mixed conifer stand has 480 trees per acre."

As the U.S. Forest Service intends to use a CE for this project, the scoping comment period may be the only the chance the public has to voice their concerns about the Project and its potential impacts on wildlife and other natural resources. Because of this intention by the U.S. Forest Service, more information should have been prepared before the scoping notice was issued. At the very least, a list of threatened, endangered, proposed, and sensitive species that occur in the Project Area and the Project's potential impacts to these species should have been provided to the public before or during the public comment period. In fact, the FSH states as much:

> Scoping includes refining the proposed action, determining the responsible official and lead and cooperating agencies, **identifying preliminary issues**, and identifying interested and affected persons….Identify and evaluate preliminary issues based on review of similar actions, knowledge of the area or areas involved, **discussions with** interested and affected persons, community leaders, organizations, **resource professionals within the Agency, and State and local governments, and/or consultations with experts and other agencies familiar with such actions and their direct, indirect, and cumulative effects**.
>
> FSH 1909.15.11 (emphasis added)

Additionally, we submitted a request to access roads onto Tecuya Ridge that were seasonally closed to Mt. Pinos District Ranger Tony Martinez on March 29 and again on April 5. Mr. Martinez responded on April 10, noting that he had just returned from vacation before indicating that the roads were closed "due to weather impacts" and that they would update their website when the roads reopen. We clarified our request on April 10, noting that we were aware of the seasonal road closures which is why we were requesting special access to them (primarily Tecuya Ridge Road) during the Project's comment period. Mr. Martinez responded on April 10 stating, "… the roads are closed to protect them from resource damage, so unfortunately I cannot honor your request."

The absence of the Project Lead and the District Ranger during a substantial portion of the Project's comment period was exacerbated further by the absence of the NEPA Coordinator due to jury duty selection (as indicated to us on March 29 in response to an unrelated matter). Thus, three key U.S. Forest Service officials were not available to provide requested information

to the public during almost half of the public comment period. This caused considerable difficulty for the undersigned and the public to prepare substantive comments as part of the NEPA process for the Project. The U.S. Forest Service should be striving to increase public participation as they propose and evaluate projects that affect public lands. The scoping process for the Project did not facilitate public participation. Instead, the U.S. Forest Service distributed limited information regarding the agency's proposed project to a limited number of interested parties and then avoided public requests for more information during what may be the only public comment period for the Project. Regarding public participation needs during the NEPA process, the FSH states:

> 4. Determine the methods of public involvement to meet the objectives. **Ensure that the level of effort to inform and to involve the public is consistent with the scale and importance of the proposed action and the degree of public interest.**
>
> FSH 1909.15.11.52 (emphasis added)

As the Proposed Action will impact 1,626 acres of mixed-conifer forest and sagebrush habitat, endangered and sensitive species, and an IRA, the Project should be considered significant in its importance and thus the effort to inform and involve the public should be significant as well. Such efforts should include considerable responsiveness to and willingness to answer public requests for more information about the Project.

9. THE U.S. FOREST SERVICE SHOULD ANALYZE THE FOLLOWING ISSUES IN AN EA OR EIS FOR THE PROJECT.

In preparing an EA or EIS for the Project, there are several issues that should be considered. These issues — detailed below — align with issues analyzed in the EA and EIS documents prepared for other projects proposed across the Los Padres National Forest.

A. Range of Reasonable Alternatives

The National Environmental Policy Act of 1969 ("NEPA") requires the U.S. Forest Service to "[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources" (40 CFR § 1501.2(c)). As part of this alternatives analysis, the EA or EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated" (40 CFR § 1502.14(a)). Furthermore, the alternatives analysis "is the heart of the environmental impact statement" (40 CFR § 1502.14).

Reasonable alternatives are those that are viable, feasible, meet the stated goals of the project, or are reasonably related to the purposes of the project (*Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Trout Unlimited v. Morton*, 509 F.2d 1276, 1286 (9th Cir. 1974)). An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action, sufficient to permit a reasoned choice (*Idaho*

Conservation League, 956 F.2d at 1520). But the agency cannot contrive the project's purpose so narrowly that competing reasonable alternatives cannot be fully considered (*City of Carmel*, 123 F.3d at 1155). The "rule of reason" guides the choice of alternatives, the extent to which the agency must discuss each alternative, and whether the agency defined the project's purposes too narrowly to allow consideration of alternatives (*City of Carmel*, 123 F.3d; *see Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997) [noting that "[o]ne obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose and need so slender as to define competing reasonable alternatives out of consideration (and even out of existence)."]).

It is important to note that "[t]he existence of a viable but unexamined alternative renders an [EIS] inadequate" (*Natural Resources Defense Council v. U.S. Forest Service,* 421 F.3d 797, 813 (9th Cir. 2005) [quoting *Citizens for a Better Henderson v. Hodel,* 768 F.2d 1051, 1057 (9th Cir. 1985)]). It is therefore not only the responsibility of the U.S. Forest Service to follow NEPA regulations when exploring reasonable alternatives but also to ensure that "selection and discussion of alternatives fosters informed decision-making and informed public participation" (*California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982)).

Current research supports that defensible space immediately around structures is the most effective approach to protecting homes and other structures from the effects of wildfire. Studies have shown the importance of defensible space in protecting residential structures from a wildfire. A 2014 study found that:

> In terms of actionable measures to reduce fire risk, this study shows a clear role for defensible space up to 30 m (100 ft)...Results here suggest the best actions a homeowner can take are to reduce percentage cover up to 40% immediately adjacent to the structure and to ensure that vegetation does not overhang or touch the structure.
>
> Syphard et al. 2014

The U.S. Forest Service should explore programs that would provide targeted assistance and funding to create and enhance defensible space around structures.

The EA or EIS should also evaluate an alternative that would reduce the length and/or width of the proposed fuelbreak in a way that would still achieve Project objectives. Additionally, the EA or EIS should evaluate benefits of large tree retention as part of one or more alternatives to the Proposed Action.

Considering the substantial amount of research questioning the efficacy of fuelbreaks generally, an alternative that explores methods excluding the development of a fuelbreak would also be useful in the discussion surrounding the Project.

B. Protection of Plants and Wildlife

The ESA (16 U.S.C. §§ 1531 et seq.) requires the U.S. Forest Service to consult with the USFWS to ensure that the Project "is not likely to jeopardize the continued existence of any

endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat" (16 U.S.C. § 1536(a)(2)). The Project Area contains habitat for several species protected under the ESA. Please consult with NOAA Fisheries and the USFWS pursuant to Section 7 of the ESA and incorporate measures into the Proposed Action and alternatives to reduce or avoid impacts to protected species.

The Project Area is located in and near known foraging, roosting, and nesting habitats for the endangered California condor. The EA or EIS should identify these habitat areas and should propose adequate buffers to protect the integrity of these sites and condor flight patterns and behavior, consistent with the best available science. The U.S. Forest Service should initiate consultation with the USFWS to determine whether the Project will impact condors or their roosting habitat or flight patterns and whether any particular mitigation measures should be adopted.

The Project Area contains habitat for several species that the U.S. Forest Service has identified as Sensitive or as Management Indicator Species. The EA or EIS should adequately evaluate the impacts of the Project and alternatives on these special-status species and their associated habitats.

In particular, the EA or EIS should contain a thorough discussion on the impacts of the Project on California spotted owls, a U.S. Forest Service sensitive species. The U.S. Forest Service has identified vegetation removal and human disturbance as two of the primary factors threatening the viability of spotted owls. The EA or EIS should disclose whether the fuelbreak is located within any Protected Activity Centers for spotted owls and should propose mitigation measures as appropriate.

To assist in preparation of the EA or EIS, the U.S. Forest Service should follow established survey protocol to assist the agency in accurately identifying habitat and determining the presence or absence of listed species in and around the Project Area. The entire project area should be thoroughly surveyed in accordance with *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* issued by the USFWS in 2000, and the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* issued by the California Department of Fish & Wildlife in 2009. Species-specific survey protocol should be incorporated as appropriate.

The range and predicted habitat of the northern goshawk — a U.S. Forest Service Sensitive Species and a Species of Special Concern with CDFW — includes the Project Area. Please evaluate the impacts of the Project on northern goshawk habitat and conduct protocol surveys consistent with the *Northern Goshawk Inventory and Monitoring Technical Guide* (U.S. Forest Service 2006).

Consider that goshawks exhibit a preference for high canopy closure and a high density of larger trees. In addition, large snags and downed logs are believed to be important components of northern goshawk foraging habitat because such features increase the abundance of major

prey species. Please incorporate the following Forest Service recommendations, at a minimum, into the Project:

- Retain large trees in vegetation management projects.
- Retain snags and down logs for prey species.
- When conducting vegetation management, maintain a minimum of 200 acres of suitable canopy cover around identified goshawk nest sites. Maintain seasonal restrictions limiting activities within 1/4 mile of the nest site during the breeding
- season (approx. 2/15 - 9/15) unless surveys confirm northern goshawks are not nesting.

The EA or EIS should also recognize that there is limited information on the historic and current distribution of Northern goshawks in southern California mountains:

> More information is needed on where goshawks nest in the southern California mountains. The breeding population is clearly small, probably fewer than thirty pairs, and could easily be extirpated by impacts to nesting sites. Efforts to maintain the integrity of these sites cannot be made until we know where they are.
>
> Stephenson and Calcarone 1999

Based on this uncertainty, please incorporate the following recommendations by Keane (2008) into the Project:

- Conduct specialized inventories to assess distributional status in poorly known areas, such as the mountains of southern California.
- Initiate collaboration between research and management in an adaptive management framework to assess the effects of forest and fuels management policies on Northern Goshawk territory occupancy, demographics, and habitat quality, placing questions within the larger context of the restoration of California forests and natural disturbance regimes. Variation across major California forest types in terms of forest structure, composition, function, patch size and distribution, prey populations, and natural disturbance regimes dictates that management and conservation efforts be developed at appropriate spatial scales. (See Reynolds et al. 2006a for recommendations for developing ecosystem-based conservation strategies for goshawks.)
- If feasible, monitoring in California should follow the U.S. Forest Service's recently developed design for bioregional monitoring of population trends and their association, if any, with broad-scale habitat changes (Hargis and Woodbridge 2006). Empirically derived habitat models should be used to monitor change in habitat distribution and quality at home-range and landscape scales. Monitoring project- level responses of nesting goshawks to management treatments would also be valuable.

Migratory birds are perhaps the most highly valued component of North America's biological diversity, with approximately 1,200 species representing nearly 15% of the world's known bird species. The seasonal movement of migratory birds is one of the most complex and compelling

dramas in the natural world. Migratory birds embark twice each year on long-distance journeys between their breeding areas and their wintering grounds, which are sometimes separated by thousands of miles. State, federal, and international law all recognize the importance of protecting migratory bird species from harm.

Pursuant to the Migratory Bird Treaty Act ("MBTA"), it is unlawful "at any time, by any means or in any manner to . . . take [or] kill . . . any migratory birds, [and] any part, nest, or eggs of any such bird" (16 U.S.C. § 703(a)). This prohibition applies to federal agencies and their employees and contractors who may not intend to kill migratory birds but nonetheless take actions that result in the death of protected birds or their nests (*Humane Soc'y of the United States v. Glickman*, 217 F. 3d 882 (D.C. Cir. 2000) [holding that federal agencies are required to obtain a take permit from USFWS prior to implementing any project that will result in take of migratory birds]; see also *Robertson v. Seattle Audubon Soc'y*, 503 U.S. 429, 437–38, 1992 [finding that federal agencies have obligations under the MBTA] and *Center for Biological Diversity v. Pirie,* 191 F.Supp.2d 161 (D.D.C. 2002) [allowing injunctive relief against federal agencies for violations of the MBTA]).

The prohibition on "take" of migratory birds includes destruction of nests during breeding season. Specifically, "nest destruction that results in the unpermitted take of migratory birds or their eggs, is illegal and fully prosecutable under the MBTA" (USFWS 2003).

In a Memorandum of Understanding Between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds ("MOU"), the agencies identified specific actions that, if implemented, would contribute to the conservation of migratory birds and their habitats. The MOU requires the U.S. Forest Service to alter the season of activities to minimize disturbances during the breeding season, to coordinate with the appropriate USFWS Ecological Services office when planning projects that could affect migratory bird populations, and to follow all migratory bird permitting requirements.

Importantly, the MOU "does not remove the Parties' legal requirements under the MBTA, BGEPA, or other statutes and does not authorize the take of migratory birds."

Under the MBTA, "any person, association, partnership, or corporation" who violates the MBTA or regulations thereunder are subject to criminal and civil penalties (16 U.S.C. §707). Violations of the MBTA are prosecuted as a misdemeanor, and upon conviction thereof, are subject to fines of up to $15,000 or imprisonment of up to six months, or both.

In addition to the protections afforded by the federal MBTA and outlined above, several bird species within the Project Area are also protected under state law. Specifically, "[i]t is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird," and "it is unlawful to take or possess a migratory nongame bird" (s*ee* Cal. Fish & Game Code §§ 3503, 3513).

The EA or EIS should evaluate the effects of the Project and alternatives on migratory birds protected under the MBTA. Several migratory bird species occur in this area. The MBTA prohibits the destruction of nests and eggs of migratory birds. The EA or EIS should evaluate the

impacts of project activities on migratory bird nests, should consider the breeding season for each migratory bird species found in the Project Area, and should propose measures (such as adjusting the season of use) to avoid destruction of nests. To mitigate the potential take of migratory bird nests, we recommend that the following mitigation measure be implemented for all vegetation clearing components of this Project:

> [Los Padres National Forest] shall ensure that suitable nesting sites for migratory nongame native bird species protected under the Federal Migratory Bird Treaty Act and/or trees with unoccupied raptor nests (large stick nests or cavities) may only be removed prior to February 1, or following the nesting season.
>
> A survey to identify active raptor and other migratory nongame bird nests may be conducted by a qualified biologist at least two weeks before the start of construction at project sites from February 1st through August 31st. Any active non-raptor nests identified within the project area or within 300 feet of the project area may be marked with a 300-foot buffer, and the buffer area may need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. Active raptor nests within the project area or within 500 feet of the project area may be marked with a 500-foot buffer and the buffer avoided until a qualified biologist determines that the chicks have fledged. If the 300-foot buffer for non-raptor nests or 500-foot 3 buffer for raptor nests cannot be avoided during construction of the Project, the project sponsor may retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as the result of noise generated by the construction. The biological monitor may be authorized to halt construction if the construction activities cause negative effects, such as the adults abandoning the nest or chicks falling from the nest.
>
> - Beginning thirty days prior to the disturbance of suitable nesting habitat, the project sponsor may arrange for weekly bird surveys conducted by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The last survey may be conducted no more than 3 days prior to the initiation of clearance/construction work.
>
>   If an active raptor nest is found within 500 feet of the project or nesting habitat for a protected native bird is found within 300 feet of the project a determination may be made by a qualified biologist in consultation with CDFG whether or not project construction work will impact the active nest or disrupt reproductive behavior.
>
> - If it is determined that construction will not impact an active nest or disrupt breeding behavior, construction will proceed without any

> restriction or mitigation measure. If it is determined that construction will impact an active raptor nest or disrupt reproductive behavior then avoidance is the only mitigation available. Construction may be delayed within 300 feet of such a nest (within 500 feet for raptor nests), until August 31 or as determined by CDFG, until the adults and/or young of the year are no longer reliant on the nest site for survival and when there is no evidence of a second attempt at nesting as determined by a qualified biologist. Limits of construction to avoid a nest may be established in the field with flagging and stakes or construction fencing marking the protected area 300 feet (or 500 feet) from the nest. Construction personnel may be instructed on the sensitivity of the area.
>
> Documentation to record compliance with applicable State and Federal laws pertaining to the protection of native birds may be recorded.
>
> California State Water Resources Control Board 2014

It should also be noted that because the Project Area includes approximately 1,100 acres of the Antimony IRA, there may be rare and sensitive plant species within portions of the projects due to the lack of previous surveys. As rare plant surveys are often conducted near roads because of ease of accessibility, some of the roadless areas within the Project Area may have never been surveyed for various plant species. The EA or EIS should also include the results of focused surveys for rare and sensitive plants that have been shown to occur near the Project Area, including but not limited to the Tehachapi monardella (*Monardella linoides* var. *oblonga*), salt spring checkerbloom (*Sidalcea neomexicana*), and pale-yellow layia (*Layia heterotricha*).

C. Cumulative Impacts

In the EA or EIS, please analyze all impacts of the Project, including cumulative effects (see 40 CFR §§ 1508.9(b), 1508.8.). A cumulative impact is defined under NEPA regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).

The cumulative impacts associated with this Project may include those impacts stemming from the probable extension of this fuelbreak across intermingled and adjacent private lands. Other potential cumulative impacts include the establishment of defensible space and previous wildfire suppression efforts.

D. Protection of Cultural and Archaeological Sites

The Project Area contains several sites deemed important to Native American history and culture. The EA or EIS should briefly describe the extent (but not the location) of Native American heritage sites in the Project Area, should summarize the extent the area has been surveyed for archaeological resources, and should discuss whether additional pre-

implementation surveys should occur. Retain monitoring by a certified archaeologist during all Project activities. Consult with the State Historic Preservation Officer in accordance with the National Historic Preservation Act.

E. Protection of Soil and Water Resources

The use of heavy equipment such as masticators, skidders, and loaders can result in soil disturbance and compaction and can damage neighboring vegetation. The EA or EIS should evaluate methods to avoid damage to soil integrity through compaction, contact with heavy equipment, and loss of litter layer.

The EA or EIS should also identify the steepness of all slopes in the Project Area and explain how the extent and method of vegetation removal will differ to account for differences in slope incline. Fuelbreak construction on steep slopes and in riparian areas and other wetlands should be avoided.

Vegetation manipulation and removal activities can involve ground disturbance, which is consequently likely to generate sediment and affect water quality. The EA or EIS should consider the following mitigation measures:

- Reduce creation of sediment that may eventually be delivered to streams and harm fish. Identify all perennial and intermittent streams in the Project Area.
- Document impacts to water quality and channel stabilization.
- Avoid or restore skid trails, which tend to channelize runoff and contribute to erosion, sedimentation, and gullying.
- Identify specific measures the agency will take to comply with Best Management Practices. Analyze whether any vegetation clearing will increase erosion in the short- or long-term and evaluate the timing of any long-term water quality benefits.

F. Protection of Scenic Resources

The fuelbreak should be designed to minimize impacts to scenic resources. Much of the Project Area is characterized as having a “high” scenic integrity objective according to the Land Management Plan for the Los Padres National Forest. The EA or EIS should examine potential impacts to the scenic integrity of the area.

G. Protection of Trees

The EA or EIS should disclose the extent of trees to be removed during fuelbreak construction and/or maintenance. The Proposed Action should include Design Criteria that prohibits the removal of trees above 6” DBH. If the removal of trees above this level is needed for fuelbreak integrity, then the EA or EIS should disclose the criteria that will be used to determine whether particular trees are to be removed.

It should be noted that studies have shown that removal of large trees may be detrimental to the goals of the Project. Bond et al. (2009b) found that stands dominated by large trees burned at lower severities than stands dominated by smaller trees. They state:

> This result suggests that harvesting larger-sized trees for fire-severity reduction purposes Is likely to be ineffective, and possibly counter-productive.
>
> Bond et al. 2009b

The U.S. Forest Service should seek to mitigate any tree removal by planting trees in other locations in the Mt. Pinos Ranger District.

H. Noxious Weeds & Invasive Species

The construction and maintenance of fuelbreaks may lead to an increase in invasive plants in the Project Area that, in turn, could spread to surrounding wildlands. Specifically,

> Fuel manipulation can contribute to invasion by exotic plants. For example, fuel breaks can act as invasive highways, carrying exotic species into uninfested wildlands. Normally destroyed by stand-replacing fires, exotic seed banks can survive the lower fire severities in fuel breaks, resulting in source populations poised to invade adjacent burned sites….
>
> Fuel manipulations such as fuel breaks can create favorable conditions for nonnative weeds, increasing their movement into wildlands and building seed sources capable of invading after fire.
>
> Keeley 2003

Elsewhere, Keeley states:

> Forests and shrublands, particularly in California, have had a long history of experimentation with different types of fuel breaks. They are constructed to create barriers to fire spread and to provide access and defensible space for fire-suppression crews during wildfires. These activities have the potential for creating suitable sites for alien plant invasion, and invasion is closely tied to the loss in overstory cover. In a recent study of 24 fuel breaks distributed throughout California, alien plants constituted as much as 70% of the plant cover and the proportion of aliens varied significantly with distance to roads, fuel break age, construction method, and maintenance frequency (Merriam et al. 2006). The association of alien species with fuel breaks raises two critical concerns. One is that the linear connectedness of these disturbance zones acts as corridors for alien invasion into wildland areas. Another is that these zones of reduced fuels produce lower temperatures and thus safe sites for alien propagules during wildfires, ensuring survivorship of seed banks (Keeley 2001, 2004b). Consequently, following fires these fuel breaks represent a major source area for alien invasion of adjacent wildlands.
>
> Keeley 2006

Given the susceptibility of fuelbreaks to serve as vectors for invasive weeds, the EA or EIS should evaluate the ability and likelihood of all project activities to contribute to the spread of invasive weeds. The EA or EIS should evaluate measures to minimize the introduction and spread of invasives and should be supported by a Noxious Weed Risk Assessment.

I. Efficacy of Fuelbreaks

The EA or EIS should include a comprehensive analysis on the efficacy of fuel breaks. There is a considerable amount of disagreement on the circumstances under which fuel breaks are effective, and what results fuel breaks are and are not able to achieve under a variety of weather conditions. The project analysis would benefit from a frank discussion on these matters.

Significant scientific controversy exists surrounding the effectiveness of fuel breaks, particularly under the extreme weather conditions that accompany most large fires in southern California. In a recent review of fuelbreak effectiveness in the Los Padres National Forest over a 28-year period involving 342 miles of fuelbreaks, the researchers concluded that wildfire did not intersect with most (79%) of the fuelbreaks in the main division of the Los Padres National Forest. Continuing:

> The fact that a substantial proportion of the fuel breaks never intersected a fire during the course of the study suggests that fuel breaks have not historically been placed in areas where fires are most likely to intersect them. Although it is possible that a fire may cross these fuel breaks in the future, fire managers might want to consider focusing maintenance and new construction in areas where fires and fuel treatments are most likely to intersect and thus provide greater opportunities for controlling fires….
>
> Although fuel breaks surrounding communities clearly serve an important role in creating a safe space for firefighting activities, **fuel breaks in remote areas and in areas that rarely or never intersect fires** have a lower probability to serve a beneficial function.
>
> Syphard et al. 2011 (emphasis added)

While the effectiveness of fuelbreaks under extreme weather conditions continues to be debated, there is also significant controversy surrounding the cost-effectiveness of fuel breaks to guard against fires during *moderate* weather conditions.

In light of the ongoing controversy surrounding the overall effectiveness of fuel breaks, and with the potential environmental impacts of fuel breaks in mind, we continue to believe that the U.S. Forest Service should focus its efforts on fuel treatments immediately adjacent to structures in the WUI. In fact, the U.S. Forest Service's own expert concluded:

> Effective fuel modification for reducing potential WUI fire losses need only occur within a few tens of meters from a home, not hundreds of meters or more from

> a home. This research indicates that home losses can be effectively reduced by focusing mitigation efforts on the structure and its immediate surroundings.
>
> Cohen 1999

During these challenging times of dwindling federal budgets, we believe that the best use of the U.S. Forest Service's limited resources is to focus more on defensible spaces immediately around structures and dwellings, and less on creating expensive fuel breaks that in some cases are located several miles from any structures.

J. Impacts of Mastication

The EA or EIS should evaluate the potential adverse impacts caused by mastication and other mechanical treatment of native vegetation. The EA or EIS should identify the specific locations within the Project Area where machine thinning, chipping, and mastication will be used. The environmental impacts associated with these methods should be thoroughly analyzed and the results included in the EA or EIS.

K. Impacts and Efficacy of Thinning

The most significant effect of this type of heavy thinning is to increase the warming and drying of ground fuels and to increase the growth of ladder fuels, both of which significantly detract of the risk reduction objectives and are expensive to treat. The analysis must address the complex effects of thinning including tendencies to reduce and increase fire hazard.

A report prepared for Congress stated: "We do not presume that there is a broad scientific consensus surrounding appropriate methods or techniques for dealing with fuel build-up or agreement on the size of areas where, and the time frames when, such methods or techniques should be applied" (US GAO RCED-99-65.1999:56). A research report by Omi and Martinson (2002) states: "Evidence of fuel treatment efficacy for reducing wildfire damages is largely restricted to anecdotal observations and simulations."

In fact, there is scientific evidence that thinning can make the fuel hazard worse instead of better. Graham et al. (2004) noted that "[d]etailed site-specific data on anything beyond basic forest structure and fuel properties are rare, limiting our analytical capability to prescribe management actions to achieve desired conditions for altering fuels and fire hazard." Further, thinning can alter the heating of the understory and subsequently reduce moisture levels:

> Thinning opens stands to greater solar radiation and wind movement, resulting in warmer temperatures and drier fuels throughout the fire season.
>
> [T]his openness can encourage a surface fire to spread…Opening up closed forests through selective logging can accelerate the spread of fire through them because a physical principle of combustion is that reducing the bulk density of potential fuel increases the velocity of the combustion reaction. Wind can flow more rapidly through the flaming zone. Thinned stands have more sun exposure

> in the understory, and a warmer microclimate, which facilitates fire (Countryman 1955)…
>
> [F]uel reduction activities – particularly mechanized treatments – inevitably function to disturb soils and promote the invasion and establishment of non-native species. Pile burned areas associated with the treatments are also prone to invasion (Korb et al. 2004). Annual grasses can invade treated areas if light levels are high enough, leading to increased likelihood of ignition, and more rapid spread of fire, which can further favor annual grasses (Mack and D'Antonio 1998). This type of feedback loop following the establishment of non-native plants may result in an altered fire regime for an impacted region, requiring extensive (and expensive) remedial action by land managers (Brooks et al. 2004).
>
> Odion 2004

The authors of a study that analyzed fires in thinned and unthinned areas in Sierra Nevada forests noted:

> Thinned areas predominantly burned at high severity, while unthinned areas burned predominantly at low and moderate severity….
>
> …combined mortality was higher in thinned than in unthinned units.
>
> Hanson and Odion 2006

Hanson and Odion (2006) went on to suggest that mechanical thinning may have "effectively lowered the fire weather threshold necessary for high severity fire occurrence." Furthermore, researchers with the U.S. Forest Service acknowledge the potential for thinning to create more intense conditions for surface fire spread:

> Theoretically, fuel treatments have the potential to exacerbate fire behavior. Crown fuel reduction exposes surface fuels to increased solar radiation, which would be expected to lower fuel moisture content and promote production of fine herbaceous fuels. Surface fuels may also be exposed to intensified wind fields, accelerating both desiccation and heat transfer.
>
> Treatments that include prescribed burning will increase nutrient availability and further stimulate production of fuels with high surface-area- to-volume ratios. All these factors facilitate the combustion process, increase rates of heat release, and intensify surface fire behavior….
>
> Thus, treatments that reduce canopy fuels increase and decrease fire hazard simultaneously. With little empirical evidence and an infant crown fire theory, fuel treatment practitioners have gambled that a reduction in crown fuels outweighs any increase in surface fire hazard….
>
> Omi and Martinson 2002

A recent study also found that protected forests (those with more restrictions on logging activities such as those in the Proposed Action) had lower fire severity levels over a 30-year period (and across 1,500 fires), but they actually had *lower* fire severity levels despite being identified as having increased biomass and fuel loading compared to less-protected forests with more logging activities (Bradley et al. 2016).

The EA or EIS should disclose the scientific uncertainty surrounding fuel reduction and fire behavior and should recognize that vegetation treatments can increase fine fuel loads while removing the large, fire-resilient logs that are relatively less prone to burn.

L. Benefits of Bark Beetles

Native insects work to thin trees, control crowding, reduce stress and lessen competition for water and nutrients. Some levels of insect herbivory, or plant-eating, may even be good for trees and forests, and in the long run produce as much or more tree growth.

According to Scott Black of the Xerces Society (pers. comm. March 15, 2005):

> [T]hese insects are native and are very important. Bark beetles help decompose and recycle nutrients, build soils, maintain genetic diversity within tree species, generate snags and down logs required by wildlife, and provide food to birds and small mammals. By feeding upon dead or dying trees, wood borers and bark beetles provide food to insect gleaning species of birds (such as woodpeckers), create snags that may be utilized by cavity nesting birds in the future and overall are invaluable catalysts in forest evolution.

Thinning is often recommended to control outbreaks of bark beetles, but there is little direct evidence that this works. This seems to be recommended based on the presupposition that thinning will increase tree vigor, which will in turn increase the ability for trees to ward off infestation by insects. Some scientists have suggested caution in using thinning to control bark beetles as geographic and climactic variables may alter the effect. Hindmarch and Reid (2001) found that thinned stands exhibited a higher attraction rate of mates by males of *Ips pini*, while females had longer egg galleries, more eggs per gallery and higher egg densities. Warmer temperatures in thinned stands also contributed to a higher reproduction rate. The number of males and females setting on logs was also higher in thinned stands.

Bark beetles are always widespread and quite common. Even if they can be controlled in a "stand" of trees, it is likely to have little impact on infestation on a landscape scale. According to Wilson and Celaya (1998), removal of infested trees may provide some protection to surrounding trees, but these insects (western pine beetle) are very common, so removal of a few infested trees is not a guarantee of protection.

The Project Description describes a need to reduce the basal area per acre below 120 ft^2 because this is the threshold above which stands "are at imminent risk of bark beetle-associated mortality." This statement is apparently derived from Oliver (1995) as indicated by the Project Description. However, the U.S. Forest Service is not fully citing the findings by Oliver

(1995). The author of that study found that native beetles reduced stand density by only about 13-20% after ponderosa pine stands reached high stand density levels (greater than 120 ft^2 basal area per acre). After such a reduction by native beetles, those stands gradually became dense once again. Oliver (2005) again found that young ponderosa pine forests experienced only a 17% reduction in basal area per acre after stands became dense and that the forests experienced lower mortality levels years after the initial beetle-induced mortality. Not only is the potential reduction in stand density by native beetles not as dramatic as the public is being led to believe, this reduction is part of a natural forest succession process.

Moreover, stand data for the Project Area provided by the agency indicate that rather than being characterized by stand densities greater than historical conditions, the stands throughout the Project Area may actually be characterized as having a density deficit compared to historical conditions. According to the U.S. Forest Service's own data, the average basal area across all stands in the Project Area is approximately 86 ft^2 per acre and 110 ft^2 per acre across stands with more than 5 ft^2 per acre. It should be noted that the Project Description describes the stands as having an average basal area of "slightly over 120 [ft^2 per acre]," though an analysis of the data provided by the agency does not produce this result unless only stands with more than 30-40 ft^2 basal area per acre are averaged. Moreover, the U.S. Forest Service describes this basal area per acre as exceeding historical conditions. However, McIntyre et al. (2015) found that southern California forests historically (1920s and 1930s) had stand densities of approximately 160 ft^2 basal area per acre on average. Thus, current stand densities are actually lower in the Project Area than historical averages. This is problematic for two reasons: the U.S. Forest Service has provided misleading information in their Project Description and the Proposed Action would further exacerbate this stand density deficit. The Proposed Action includes thinning the Project Area to a range of 40 to 60 ft^2 basal area per acre. This would bring stand densities to 25-38% of historical conditions. And as detailed above, the potential mortality induced by bark beetles would likely be 13-20% in the Project Area. Bark beetle mortality would therefore potentially reduce stand densities in the Project Area to approximately 88 to 96 ft^2 basal area per acre (when using the 110 ft^2 basal area per acre figure described above). Thus, the Proposed Action would likely cause far greater tree mortality than could be potentially caused by bark beetles if left untreated. In other words, the U.S. Forest Service is proposing the Project in part to protect stands in the Project Area from bark beetle mortality, but by doing so would be more destructive (in terms of tree mortality) than such bark beetle activity would likely be.

Additionally, thinning could attract more beetles to the area through the release of terpenes from fresh wood chips, slash, or wounded green trees. If insect attack is a concern, the U.S. Forest Service must consider and disclose the factors that tend to attract insects and determine whether thinning will make things better or worse in the EA or EIS.

M. Benefits of Snags

The EA or EIS should discuss the retention of snags to benefit wildlife. For example, Verner et al. (1992) recommends at least 20 square feet per acre of basal area of large snags, or about 8

large snags per acre on average, for suitable California spotted owl habitat. Abundant large snags are essential for spotted owls because owl prey species depend on them.

In addition, the EA or EIS should note that higher densities of snags do not always result in higher fire intensity. Bond et al. (2009b) found no evidence that pre-fire mortality influenced fire severity in coniferous forests in the San Bernardino Mountains. They note that their "results provide compelling evidence that when fire does occur, stands with considerable tree mortality due to drought and insects will not burn at higher severity than stands without significant tree mortality, either in the short or long term" (Bond et al. 2009b).

N. Wildfire Frequency

The EA or EIS should evaluate fire frequency in the area in and around Project Area and incorporate this and other recent studies regarding fire frequency and severity in southern California forests. It should also include a fire history map of the area in and around the Project Area.

O. Consistency With Land Management Plan

The EA or EIS should evaluate whether and how the Project is consistent with the standards, guidelines, and desired conditions of the Land Management Plan for the Los Padres National Forest.

P. Frequency of Treatments

The Proposed Action is not clear about whether the U.S. Forest Service intends on reentering these stands at some point in the future, or repeating vegetation removal or prescribed burning treatments. The EA or EIS should disclose the frequency of retreatments, as well as thresholds that will prompt retreatment.

Q. Hazard Tree Guidelines

The Proposed Action states that "[t]he removal of hazard trees (live and dead) of all sizes would occur along utility lines, roads, trails and landings to provide for safety of wood workers and public throughout project implementation, except where restrictions for removal apply." The EA or EIS should disclose the criteria used to determine which trees constitute a safety hazard.

R. Economic Analysis

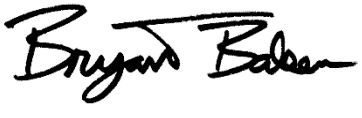
The EA or EIS should include a U.S. Forest Service cost estimate for any commercial tree removal associated with this project. Such an estimate should include administrative costs pertaining to analysis and appeals, costs of timber sale preparation and administration, costs of monitoring during and after implementation, per acre costs of slash piling and burning, per acre costs of brush maintenance following thinning as a result of canopy reduction; the projected timber sales receipts from the timber sale, and the total volume of the timber sale (in board feet of sawtimber and/or tons of biomass).

S. Pile Burning and Prescribed Burning

Pile burning may cause patches of extreme soil heating to the point where soil characteristics are changed. The EA or EIS should disclose the size and location of these patches across the Project Area. Piles result in heavy, localized impacts to soil quality. The EA or EIS should also evaluate the impacts of pile burning on soil structure and composition, as well as the regrowth capability of pile-burned areas.

Thank you for this opportunity to provide comments on the Project. Please provide us with all future public notices, environmental documents, and decision documents related to this project. Thank you for your efforts to protect the Los Padres National Forest.

Sincerely,



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Tables and Figures

Table 1. California condor roost sites in the Project Area and within 0.5 miles of the Project Area between December 2013 and December 2017. Roost sites were estimated using the criteria recommended by Cogan et al. (2012). The roost sites are organized from east to west in the table. Data provided by the USFWS.

Latitude	Longitude	Bird ID	Arrival Date	Arrival Time	Departure Date	Departure Time
34.834675	-118.910065	107	10/2/2014	18:38	10/3/2014	9:17
34.837056	-118.912200	449	10/30/2014	15:23	10/31/2014	9:57
34.831068	-118.913841	509	1/12/2016	15:56	1/13/2016	9:30
34.835755	-118.914945	107	10/20/2014	16:32	10/21/2014	7:08
34.838057	-118.915724	449	10/20/2014	16:33	10/23/2014	10:35
34.836887	-118.916361	449	10/21/2014	16:48	10/22/2014	12:41
34.846665	-118.938860	625	9/19/2015	17:31	9/20/2015	8:33
34.846834	-118.938938	585	9/19/2015	17:32	9/20/2015	8:44
34.846667	-118.939409	369	8/1/2017	17:24	8/2/2017	8:39
			8/2/2017	16:05	8/3/2017	12:26
34.837700	-118.942081	683	11/22/2015	14:11	11/23/2015	9:27
34.840813	-118.942638	483	9/30/2017	15:57	10/1/2017	8:05
34.845859	-118.955277	599	10/31/2017	17:55	11/1/2017	9:52
34.840189	-118.955449	805	11/18/2017	14:02	11/19/2017	10:51
34.850621	-118.955581	247	5/12/2017	19:49	5/13/2017	5:55
34.846605	-118.956734	21	10/3/2014	17:22	10/4/2014	9:48
34.846575	-118.956847	648	11/8/2014	16:12	11/9/2014	8:49
34.844116	-118.957008	493	9/13/2017	17:50	9/14/2017	7:18
34.848444	-118.959040	585	10/31/2015	17:24	11/1/2015	5:48
34.851345	-118.960885	774	6/22/2017	17:42	6/23/2017	8:59
34.851299	-118.961367	493	11/20/2014	15:06	11/21/2014	8:53
34.844266	-118.961710	846	10/6/2017	17:55	10/7/2017	9:53
34.844240	-118.962635	570	10/6/2017	17:50	10/7/2017	9:25
34.843874	-118.964566	262	10/12/2015	16:57	10/13/2015	9:39
34.849768	-118.966374	648	10/3/2017	17:26	10/4/2017	9:44
34.847843	-118.968353	683	11/14/2015	14:34	11/15/2015	12:45
34.843785	-118.981675	107	10/22/2014	16:16	10/23/2014	9:50
34.851046	-118.986073	648	9/21/2015	16:16	9/22/2015	9:25
34.842613	-118.987202	794	11/20/2017	16:30	11/21/2017	10:07
34.845150	-118.996186	480	7/21/2015	16:17	7/22/2015	11:20
34.856889	-119.014969	360	3/18/2016	17:38	3/19/2016	9:37
34.853827	-119.018518	740	10/18/2017	16:06	10/19/2017	7:25
34.854667	-119.052564	526	9/23/2017	16:11	9/25/2017	9:50
34.857081	-119.054245	374	9/1/2015	18:14	9/2/2015	8:39
34.852320	-119.078360	625	12/9/2017	14:18	12/10/2017	8:27
34.857635	-119.090960	625	5/2/2017	18:07	5/3/2017	9:49

34.857986	-119.093758	374	8/3/2017	17:38	8/4/2017	8:47
34.861537	-119.100612	480	9/23/2016	16:49	9/24/2016	9:50
34.869200	-119.102574	627	8/14/2017	17:40	8/15/2017	9:12

Figure 1. Proposed Tecuya Ridge Shaded Fuelbreak Project and Cuddy Valley Forest Health/Fuels Reduction Project. Both project areas (in this figure and subsequent figures) were redrawn from maps supplied in their respective project descriptions provided during scoping.

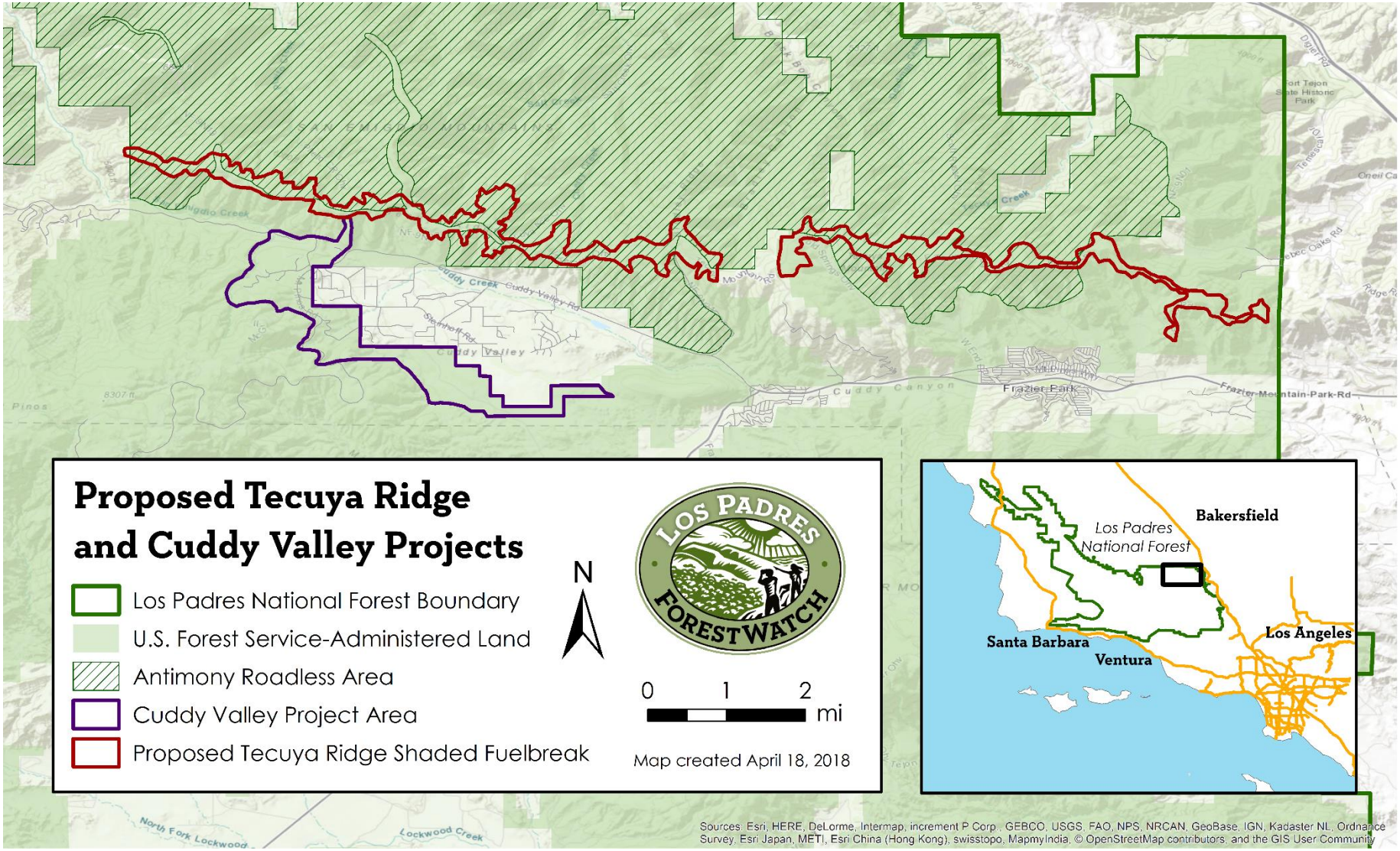

Figure 2. California condor roost sites near the Project Area estimated using condor tracking data (from December 2013 to December 2017) provided by the USFWS and techniques similar to those developed by Cogan et al. (2012). Roost buffer radii are 0.5 miles as directed by U.S. Forest Service (2005b).

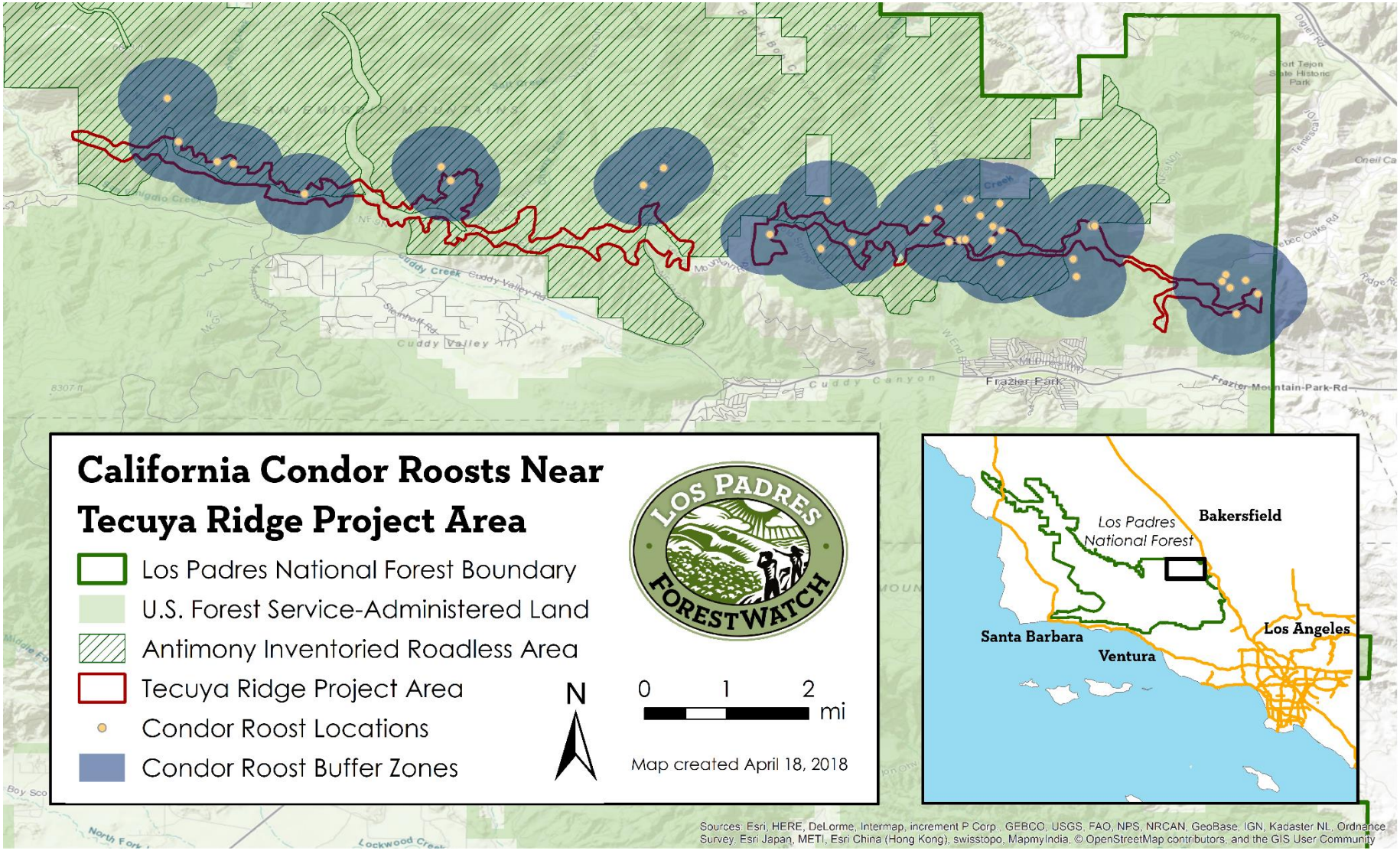

Figure 3. CSO activity centers (as designated by the U.S. Forest Service) and HRCs (estimated according to recommendations by the CSO Conservation Strategy) as well as predicted habitat (retrieved from the CNDDB(2018)) near the Project Area.

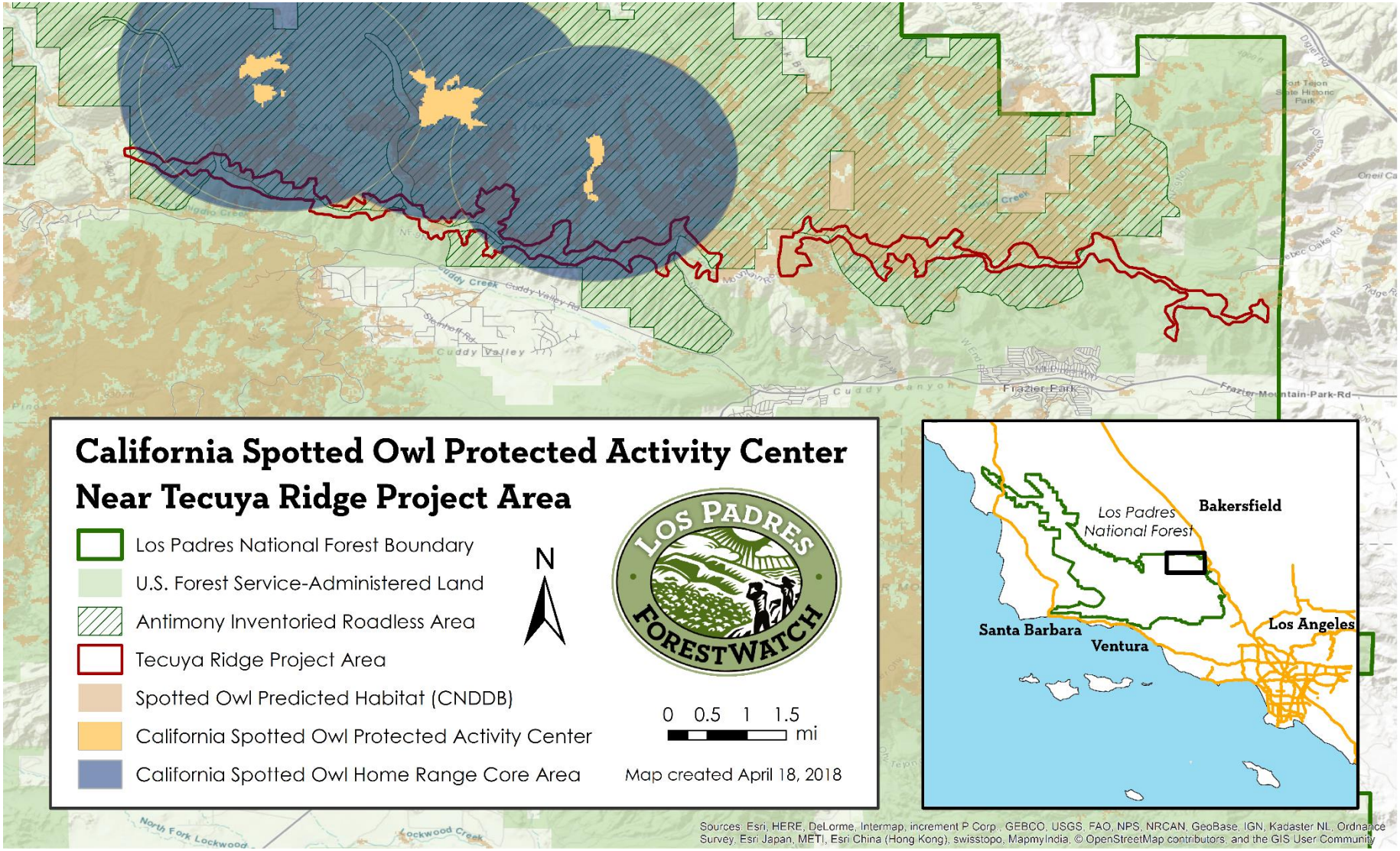

Figure 4. Northern goshawk predicted habitat — retrieved from the CNDDB (2018) — near the Project Area.

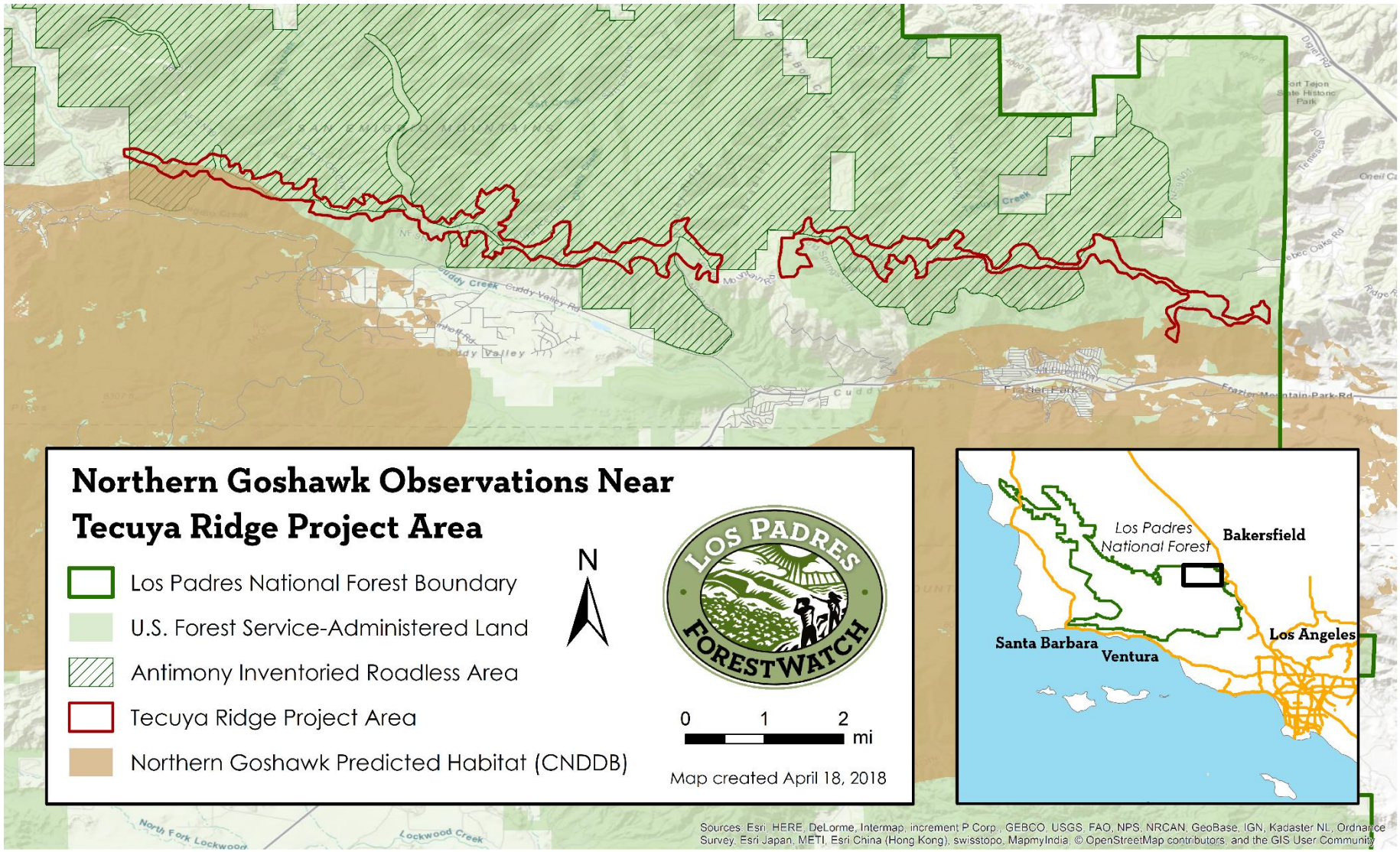

Figure 5. Tehachapi pocket mouse observations and predicted habitat — both retrieved from the CNDDB (2018) — near the Project Area.

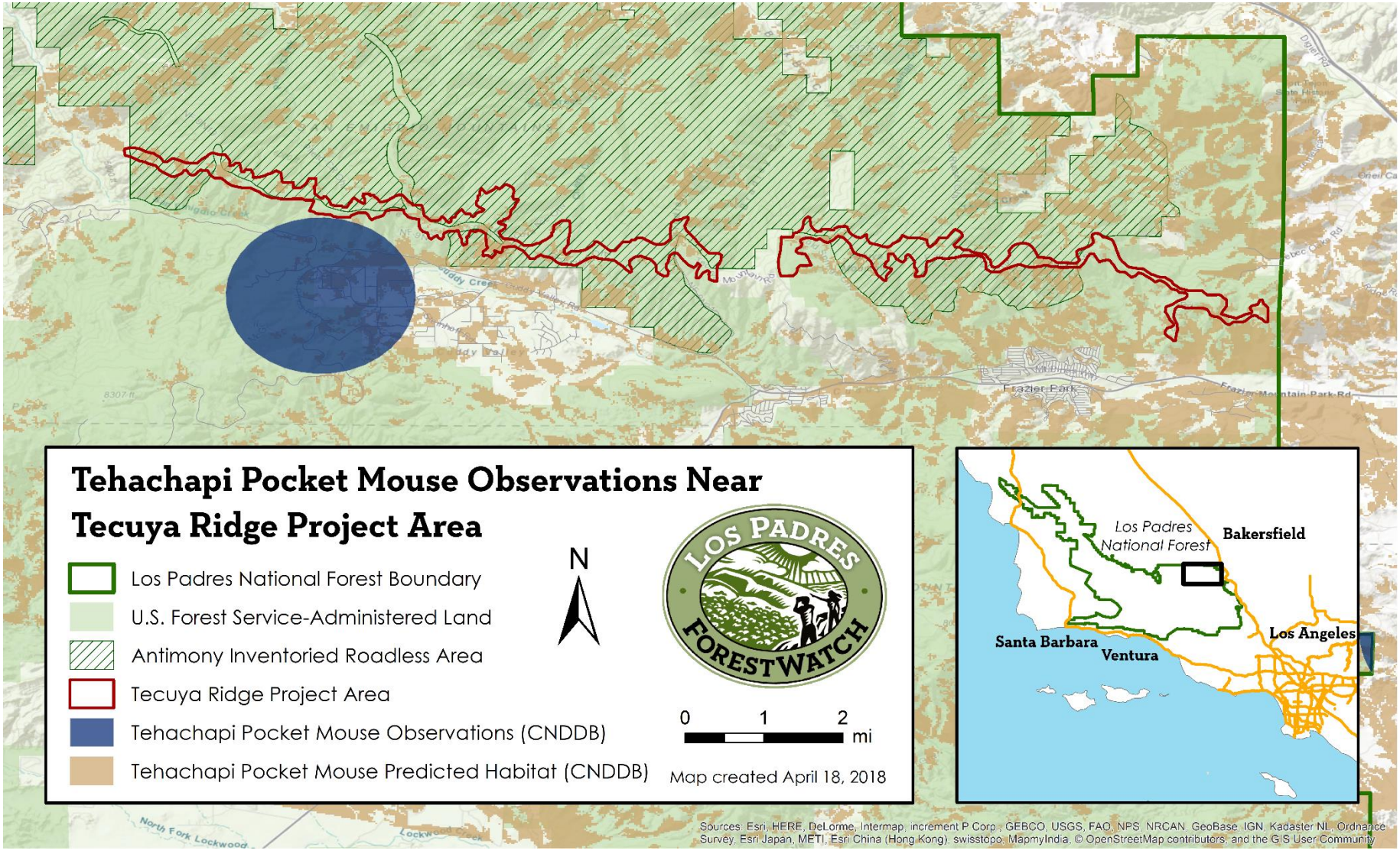

Figure 6. Sensitive plant species observations near the Project Area. All observations were retrieved from the CNDDB (2018).

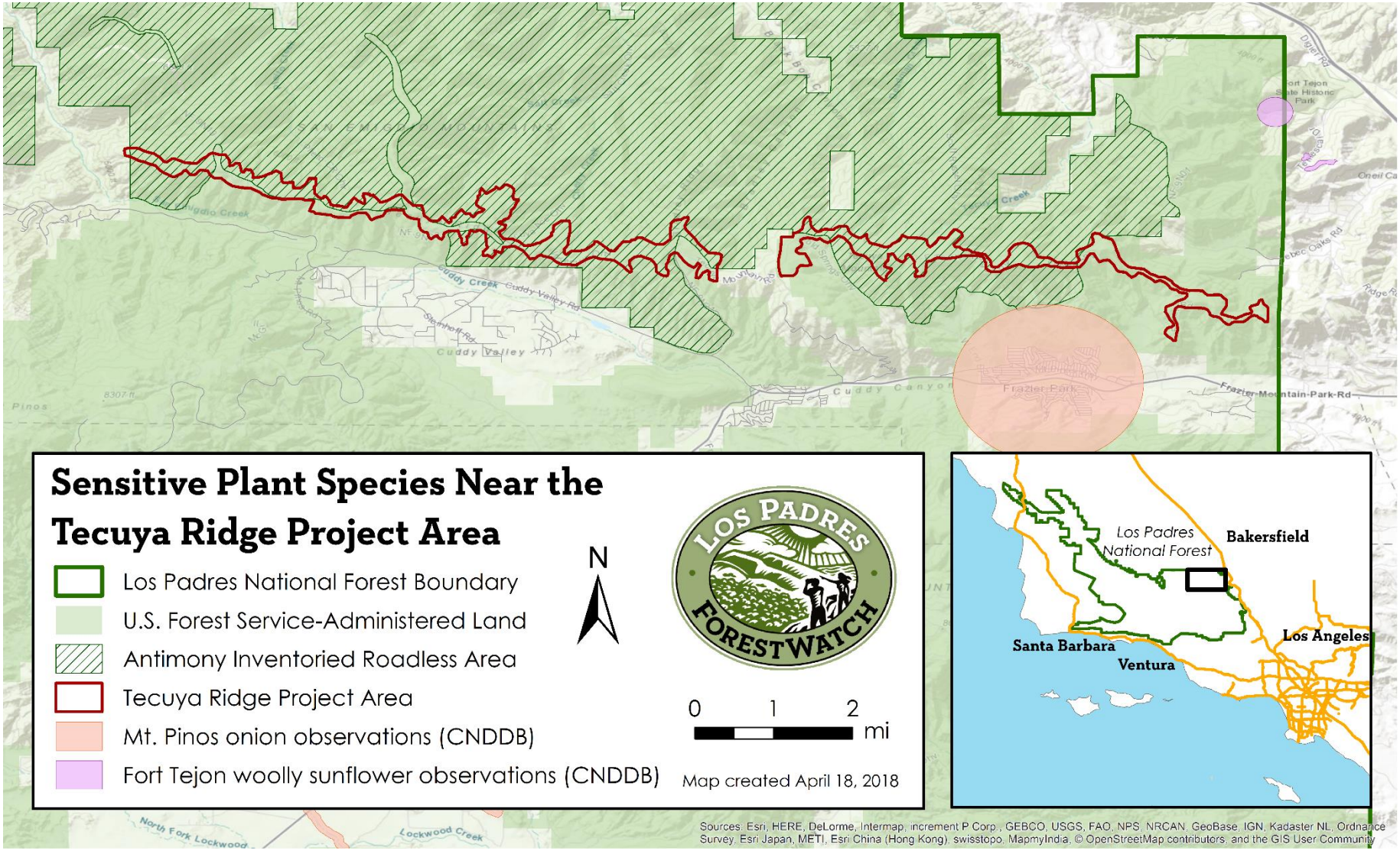

Figure 7. Projects identified by the Mt. Pinos CWPP near the Project Area. Defensible Space Zone project areas were redrawn from MPCFSC (2009).

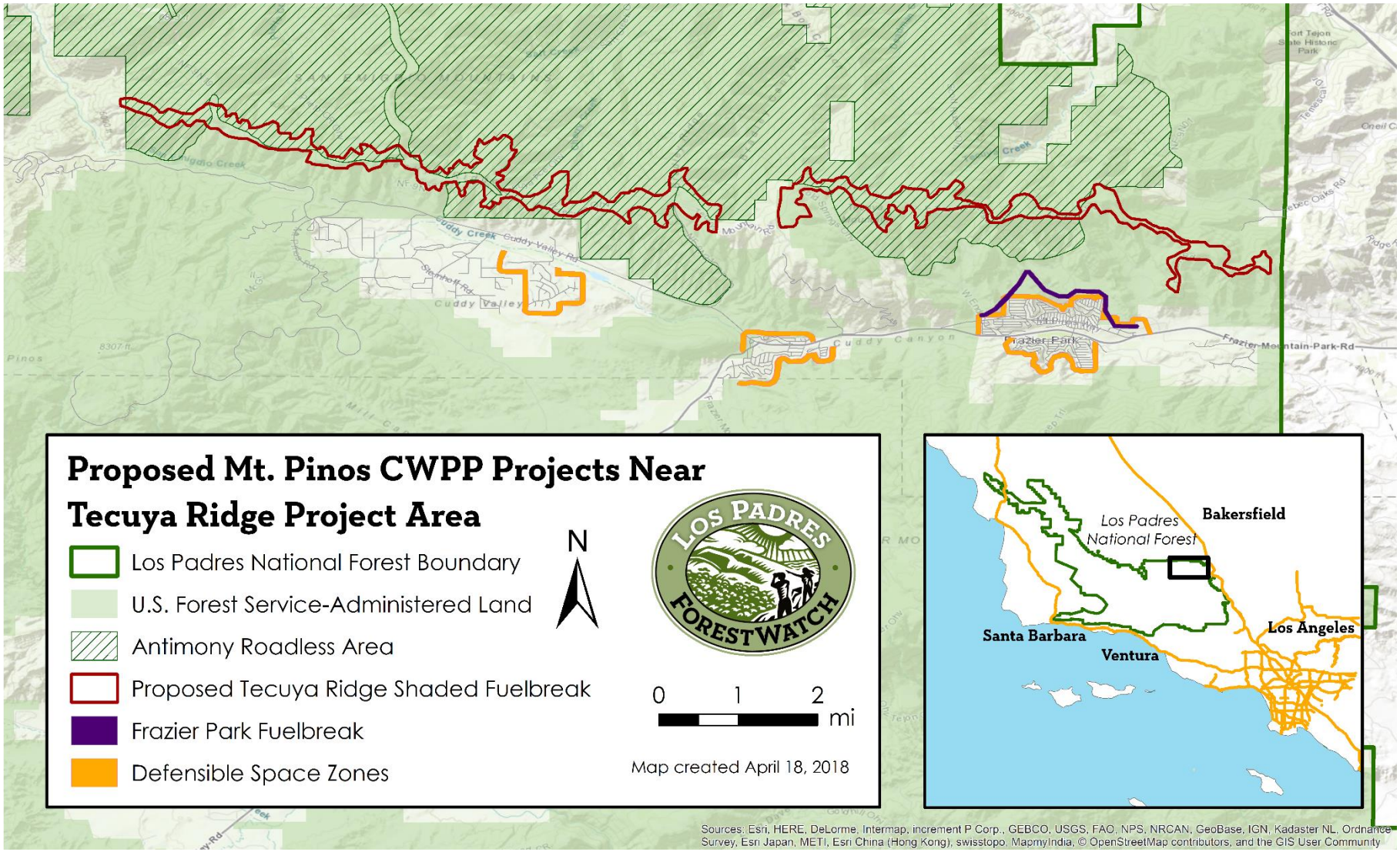

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EXHIBIT G

THE JOHN MUIR PROJECT
OF EARTH ISLAND INSTITUTE

CENTER for BIOLOGICAL DIVERSITY
Because life is good.

September 10, 2018

Los Padres National Forest
Mt. Pinos Ranger District
Attn: Gregory Thompson, Project Team Leader
34580 Lockwood Valley Rd, Frazier Park, CA 93225
gsthompson@fs.fed.us

Re: Tecuya Ridge Fuelbreak Project Supplemental Scoping Comments

Dear Mr. Thompson:

We are writing to supplement our previous comments regarding the Tecuya Ridge Fuelbreak Project ("Project") which were submitted on April 19, 2018. The Project entails constructing a 12-mile-long, 1,626-acre fuel break along Tecuya Ridge in the Mt. Pinos Ranger District of the Los Padres National Forest. The project would be accomplished through a commercial logging operation in mixed conifer stands as well as mastication and hand treatment of up to 95 percent of sagebrush-scrub within the Project Area — approximately 1,100 acres of which are within the Antimony Inventoried Roadless Area ("IRA").

Our previous comments detailed our concerns over the incorrect use of a categorical exclusion ("CE") for this project, as well as the need for preparation of an environmental impact statement ("EIS") due to the likely impacts to several extraordinary circumstances that are present in and around the Project area.

We have reviewed the Project Description issued as part of the scoping process as well as supplemental documentation in full, and we have several concerns about the Project and the potential lack of further documentation in an environmental assessment ("EA") or environmental impact statement ("EIS"). We hereby submit the following comments on the U.S. Forest Service's Tecuya Ridge Fuelbreak Project.

Thank you for considering these comments as the U.S. Forest Service examines ways to most effectively protect communities from wildfires while minimizing the environmental impacts of this project.

1. CALIFORNIA CONDOR ROOSTS IN AND AROUND THE PROJECT AREA

In our previous scoping comments, we delineated federally-endangered California condor (*Gymnogyps californianus*) roost sites using methods similar to those established by Cogan et al. (2012). Our analysis of condor tracking telemetry data covering the period of December 2013 to December 2017 provided by the U.S. Fish & Wildlife Service ("USFWS") resulted in the identification and delineation of 38 roosts within the Project Area or within 0.5 miles of the Project Area.

Since submitting those comments, we have further refined our methodology for delineating condor roost sites. Using the pseudocode provided in Cogan et al. (2012), we constructed an enhanced Python script that delineates three tiers of condor roost sites using condor tracking telemetry data. A roost site is considered to be a location that condors are spending the night, and must satisfy one of the following criteria:

Tier 1 Roost

An overnight stay, indicated by a telemetry record in the evening of one day and the next record for that particular bird occurring the next morning. These two records must be within 40 meters of each other, and the bird's logged ground speed must be less than 10 kilometers per hour according to Cogan et al. (2012)[1]. The location data provided with the first record of the next day was considered an approximate location of the roost site itself. For example, if a particular bird is recorded as being present in a location at the end of a day (e.g. 10:34 PM) and the very next record logged for that bird is within a 40-meter radius the next day (e.g. 5:07 AM) with no other telemetry records between, the Python script identifies this as a Tier 1 roost occurrence.

Tier 2 Roost

Most roosts are categorized under Tier 1. However, visual examination of telemetry data indicated that several instances of telemetry data clustering overnight may be roosts, but do not satisfy the Tier 1 parameters. In nearly all cases, Tier 1 parameters were not satisfied because the first record of the second day was slightly more than 40 meters away from the last record of the previous day. Often, this seemed to indicate one of two possibilities: 1) the location of the first record of the second day was inaccurate due to poor satellite reception (conditions that are sometimes present in heavily forested areas) or 2) the condor briefly left the roost to forage.

To account for these possibilities, the Python script was enhanced so that, if a particular bird was present at a location for the last record of the first day and then present for four consecutive hours at the same location (i.e. within a 40-meter radius) between midnight and

[1] Cogan, C.B., J. D'Elia, K. Convery, J. Brandt, and T. Bulgerin. 2012. Analysis of California condor (*Gymnogyps californianus*) activity using satellite telemetry data. *The Open Ornithology Journal* 5:82-93.

7:00 AM the next day despite the first record of that day being logged outside of the 40-meter radius, the script identifies this as a Tier 2 roost occurrence.

Tier 3 Roost

This type of roost occurrence accounts for the possibility of telemetry data outliers as describe as a potential reason why Tier 1 parameters are not initially met by potentially roost records. The Python script was further enhanced to identify whether up to the first three records for the second day are within a feasible flying distance from the previous or next record given the timestamps of those records. That is, if a bird is recorded as being located a distance away from the previous record location that is not feasible given the bird's known maximum flight speed (obtained from all available telemetry data for that bird between December 2013 and June 2018) and the difference of the two records' timestamps. If the bird could not have feasibly flown that distance within the time difference, the record is removed from consideration due to its likelihood as an outlier.

Additionally, some condor telemetry data files provided by USFWS indicate whether a particular record is an outlier. These records were also removed by the Python script during the analysis. If Tier 1 or Tier 2 parameters are met, but outlier records occurring between the first and second day identified using the methods above are removed, the script identifies this as a Tier 3 occurrence.

Using these methods, we conducted another analysis of condor tracking telemetry data from December 2013 to June 2018. This analysis delineated 40 condor roosts within the proposed fuel break location or within 0.5 miles of the proposed fuel break (Figure 1). Table 1 contains information about each roost, included location data, bird identification, timestamps, roost type, and the unique "EventID" for the telemetry record used as an estimate for the location of a roost. We would like to note that three of these roosts occurred in January and May of 2018. Please see our previous scoping comments for more information about why all of these roosts should be considered active and how that affects the Project.

2. OCCURRENCE OF YELLOW-BLOTCHED SALAMANDER IN PROJECT AREA

Since submitting our initial scoping comments, we have found data indicating the presence of the yellow-blotched salamander (*Ensatina eschscholtzii croceater*) on Tecuya Ridge. Two individuals were observed by Robert Hansen and Dan Holland one mile west of Tecuya Mountain on Scott Russell Road on April 5, 1981[2]. The exact location of the record is within the proposed fuel break boundary at approximately 6,750 feet in elevation (Figure 2).

Additionally, another observation of this species was recorded on March 3, 2013 via iNaturalist[3] on Tecuya Ridge near the location of Hansen and Holland's 1981 record.

The yellow-blotched salamander is currently listed as a sensitive species in Region 5 by the U.S.

[2] Robert Hansen, pers. comm., September 7, 2018
[3] https://www.inaturalist.org/observations/208790

Forest Service. The species' habitat requirements are outlined in the U.S. Forest Service's Species Account:

> Yellow-blotched salamanders occur in open woodlands dominated by black oak (Quercus kelloggii), blue oak (Q. douglasii), and gray pine (Pinus sabiniana) and in open forests dominated by Jeffrey pine (P. jeffreyi), ponderosa pine (P. ponderosa), and white fir (Abies concolor). They are also common in canyons among litter and debris from canyon live oaks (Q. chrysolepis) and extend onto slopes supporting California scrub oaks (Q. dumosa) and deerbrush (Ceanothus sp.) (Jennings and Hayes 1994). Colonies of Ensatina salamanders seem best developed in marginal belts between dense and sparse vegetation, that is, in "edge" situations (Stebbins 1951). Downed logs, leaf litter, and woody debris appear to be important habitat elements (Stebbins 1951). Ensatinas are commonly found in areas with considerable leaf litter, which serves as an insulating blanket to help conserve moisture and to buffer temperature fluctuations (Stebbins 1951).[4]

As this sensitive species relies on the woody debris and leaf litter characteristic of Tecuya Ridge — where the species has been known to occur — the U.S. Forest Service should prepare an environmental assessment ("EA") or EIS that analyzes the Project's potential impacts to the species and its habitat in the area. As part of this analysis, the U.S. Forest Service should also conduct focused surveys to better understand the distribution of *E. eschscholtzii croceater* along Tecuya Ridge. As such surveys have, to our knowledge, not been carried out along Tecuya Ridge before, considerable uncertainty about the presence of the species in the Project Area and the potential impacts of the Proposed Action exists, requiring the U.S. Forest Service to at least prepare an EA for the Project.

3. POTENTIAL FOR TEMPORARY ROAD CONSTRUCTION DURING THE PROJECT

The Project Description states this regarding road construction:

> A part of the project is within the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule, generally only smaller trees (21 inches diameter breast height or less) would be cut or removed within the IRA. Larger trees may be cut or removed within the IRA for safety or operability reasons. No new road construction or re-construction is proposed under this project.[5]

This is the only statement regarding road construction in the Project Description. As worded (i.e. "no new road construction"), the U.S. Forest Service has retained the possibility of

[4] [U.S. Forest Service] U.S. Department of Agriculture Forest Service. 2005. Species Accounts.
[5] U.S. Forest Service. 2018. Tecuya Ridge Project Description, pg. 7.

temporary road construction within the Antimony IRA. It should be noted that temporary road construction is prohibited in IRAs within the National Forest System.[6] Furthermore, none of the exemptions to the general prohibition against road construction outlined in the Roadless Rule apply to the Project. Indeed, the final rule and record of decision for Roadless Area Conservation in 2001 clarified these exceptions:

> The public health and safety exception at paragraph (b)(1) in the final rule applies only when needed to protect public health and safety in cases of an imminent threat of a catastrophic event that might result in the loss of life or property. It does not constitute permission to engage in routine forest health activities, such as temporary road construction for thinning to reduce mortality due to insect and disease infestation.[7]

These issues — in addition those we raised about the inconsistency of the Project with the Roadless Rule in our initial scoping comments — require that the U.S. Forest Service exclude the more than 1,000 acres of the Antimony IRA from the Proposed Action.

Thank you for this opportunity to provide comments on the Project. Again, please provide us with all future public notices, environmental documents, and decision documents related to this project.

Sincerely,

Bryant Baker, M.S., Conservation Director
Los Padres ForestWatch
PO Box 831
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Oakland, CA 94612

[7] Special Areas; Roadless Area Conservation; Final Rule. 2001. *Federal Register*, 66(9), pg. 3255.

Tables and Figures

Table 1. California condor roost sites in the Project Area and within 0.5 miles of the Project Area between December 2013 and June 2018. Roost sites were delineated using enhanced methods derived from Cogan et al. (2012). Note that the EventID is missing from two dates in 2018 as this parameter was not provided by the USFWS for that quarter's dataset.

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-118.914960	34.836660	2014-10-20 23:11 PDT	2014-10-21 00:20 PDT	107	Tier 1	487665044
-118.916336	34.836853	2014-10-21 18:10 PDT	2014-10-22 07:13 PDT	449	Tier 1	473131890
-118.915771	34.838024	2014-10-22 18:09 PDT	2014-10-23 07:14 PDT	449	Tier 1	473131847
-118.981710	34.844070	2014-10-22 23:55 PDT	2014-10-23 00:40 PDT	107	Tier 1	487665573
-118.957565	34.846722	2014-11-08 16:53 PST	2014-11-09 06:29 PST	648	Tier 1	479918248
-118.961410	34.851450	2014-11-20 23:54 PST	2014-11-21 00:59 PST	493	Tier 1	487951059
-118.996056	34.845238	2015-07-21 21:20 PDT	2015-07-22 04:45 PDT	480	Tier 1	986534650
-118.939117	34.847134	2015-09-19 20:05 PDT	2015-09-20 05:35 PDT	585	Tier 1	100252951
-118.938870	34.846870	2015-09-19 23:55 PDT	2015-09-20 00:27 PDT	625	Tier 1	100271915
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-118.913902	34.831108	2016-01-12 16:59 PST	2016-01-13 07:08 PST	509	Tier 1	113121109
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-118.939240	34.846588	2017-08-02 20:42 PDT	2017-08-03 01:02 PDT	369	Tier 1	3476709663
-119.093994	34.857941	2017-08-04 01:01 PDT	2017-08-04 05:24 PDT	374	Tier 2	3484663349
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-118.942459	34.840889	2017-09-30 19:25 PDT	2017-10-01 06:39 PDT	483	Tier 3	3735041657
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-119.079140	34.852580	2017-12-09 23:35 PST	2017-12-10 00:20 PST	625	Tier 1	4153090844
-118.940079	34.834980	2018-01-08 23:58:18 PDT	2018-01-09 00:10:40 PDT	805	Tier 1	N/A
-118.956757	34.849686	2018-01-14 23:51:11 PDT	2018-01-15 00:02:12 PDT	749	Tier 1	N/A
-119.007350	34.851260	2018-05-07 23:22 PDT	2018-05-08 00:06 PDT	77	Tier 1	5833995681

Figure 1. California condor roost sites near the Project Area estimated using condor tracking data (from December 2013 to June 2018) provided by the USFWS and enhanced methods derived from Cogan et al. (2012). Roost buffer radii are 0.5 miles as directed by U.S. Forest Service (2005b).

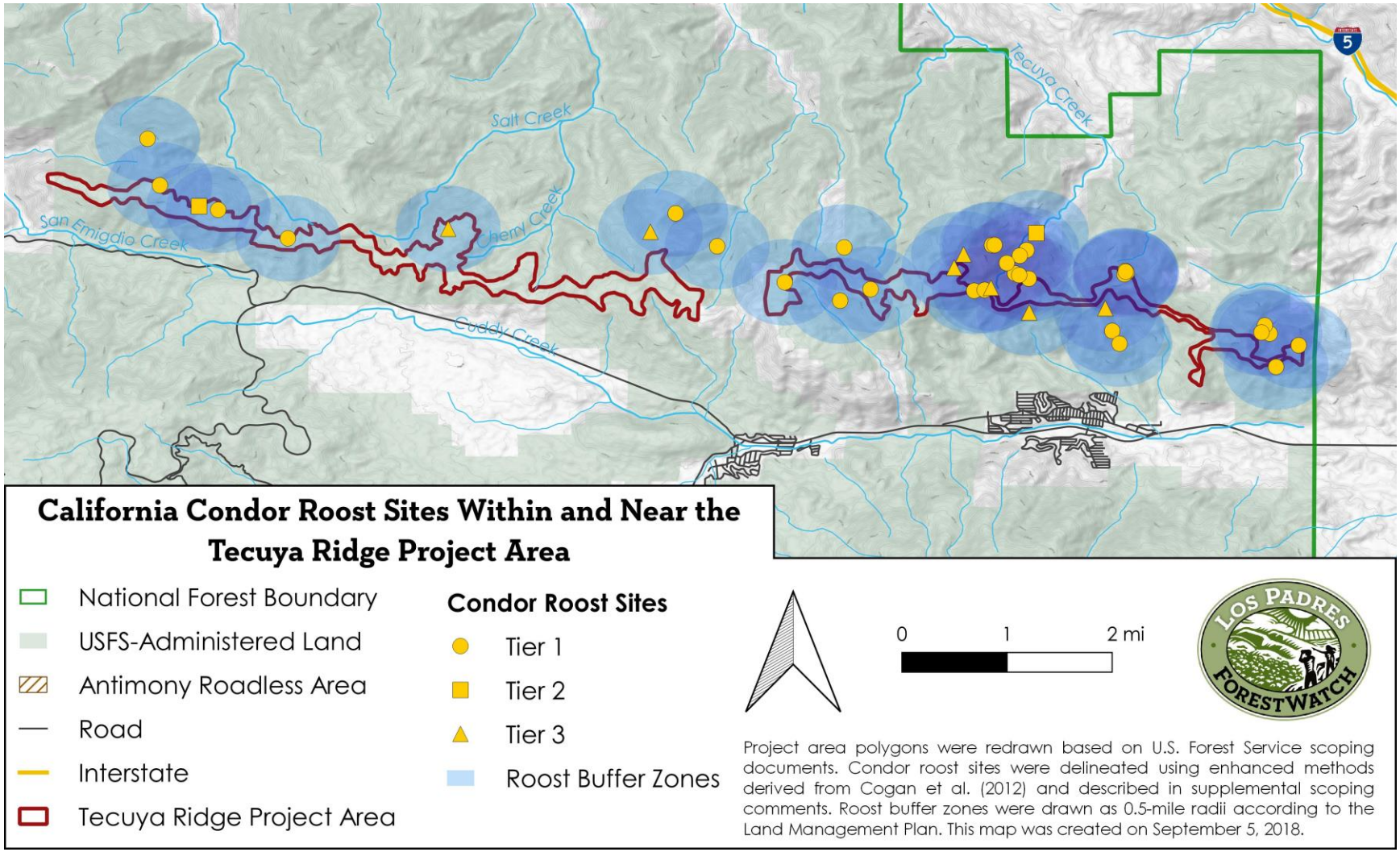


Figure 2. Observations of *Ensatina schscholtzii croceater* within the Project Area on Tecuya Ridge.

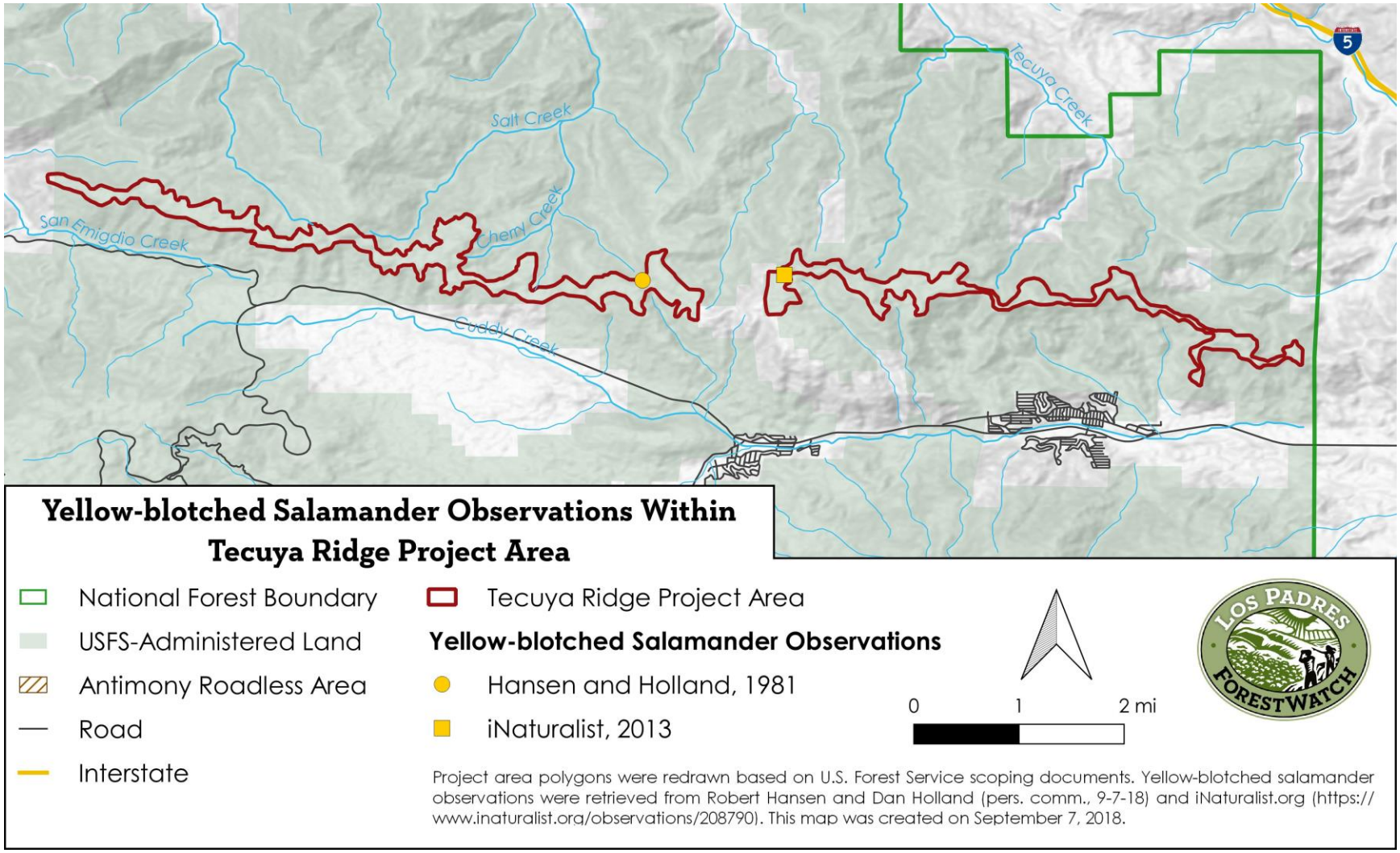


EXHIBIT H

April 16, 2019

Los Padres National Forest
Mt. Pinos Ranger District
Attn: Gregory Thompson, Project Team Leader
34580 Lockwood Valley Rd, Frazier Park, CA 93225
gsthompson@fs.fed.us

Re: Tecuya Ridge Fuelbreak Project Supplemental Scoping Comments

Dear Mr. Thompson:

We are writing to supplement our previous comments regarding the Tecuya Ridge Fuelbreak Project ("Project") which were submitted on April 19, 2018 and September 10, 2018 . The Project entails constructing a 12-mile-long, 1,626-acre fuel break along Tecuya Ridge in the Mt. Pinos Ranger District of the Los Padres National Forest. The project would be accomplished through a commercial logging operation in mixed conifer stands as well as mastication and hand treatment of up to 95 percent of sagebrush-scrub within the Project Area — approximately 1,100 acres of which are within the Antimony Inventoried Roadless Area ("IRA").

Our previous comments detailed our concerns over the incorrect use of a categorical exclusion ("CE") for this project, as well as the need for preparation of an environmental impact statement ("EIS") due to the likely impacts to several extraordinary circumstances that are present in and around the Project area.

We have reviewed the Project Description issued as part of the scoping process as well as supplemental documentation in full, and we have several concerns about the Project and the potential lack of further documentation in an environmental assessment ("EA") or environmental impact statement ("EIS"). We hereby submit the following comments on the U.S. Forest Service's Tecuya Ridge Fuelbreak Project.

Thank you for considering these comments as the U.S. Forest Service examines ways to most effectively protect communities from wildfires while minimizing the environmental impacts of this project.

CALIFORNIA CONDOR ROOSTS IN AND AROUND THE PROJECT AREA

In our previous scoping comments and supplemental comments, we delineated federally-endangered California condor (*Gymnogyps californianus*) roost sites using methods developed and enhanced from Cogan et al. (2012). Our analysis of condor tracking telemetry data covering the period of December 2013 to December 2018 provided by the U.S. Fish & Wildlife Service ("USFWS")—though data for the period of July 1, 2018 to September 30, 2018 were not included as they have yet to be provided to us—resulted in the identification and delineation of 47 roosts within the Project Area or within 0.5 miles of the Project Area.

Our methodology for delineating condor roost sites has not changed since submitting our supplemental comments on September 10, 2018, but they are described again below. Using the pseudocode provided in Cogan et al. (2012), we constructed an enhanced Python script that delineates three tiers of condor roost sites using condor tracking telemetry data. A roost site is considered to be a location that condors are spending the night, and must satisfy one of the following criteria:

Tier 1 Roost

An overnight stay, indicated by a telemetry record in the evening of one day and the next record for that particular bird occurring the next morning. These two records must be within 40 meters of each other, and the bird's logged ground speed must be less than 10 kilometers per hour according to Cogan et al. (2012)[1]. The location data provided with the first record of the next day was considered an approximate location of the roost site itself. For example, if a particular bird is recorded as being present in a location at the end of a day (e.g. 10:34 PM) and the very next record logged for that bird is within a 40-meter radius the next day (e.g. 5:07 AM) with no other telemetry records between, the Python script identifies this as a Tier 1 roost occurrence.

Tier 2 Roost

Most roosts are categorized under Tier 1. However, visual examination of telemetry data indicated that several instances of telemetry data clustering overnight may be roosts, but do not satisfy the Tier 1 parameters. In nearly all cases, Tier 1 parameters were not satisfied because the first record of the second day was slightly more than 40 meters away from the last record of the previous day. Often, this seemed to indicate one of two possibilities: 1) the location of the first record of the second day was inaccurate due to poor satellite reception (conditions that are sometimes present in heavily forested areas) or 2) the condor briefly left the roost to forage.

To account for these possibilities, the Python script was enhanced so that, if a particular bird

[1] Cogan, C.B., J. D'Elia, K. Convery, J. Brandt, and T. Bulgerin. 2012. Analysis of California condor (*Gymnogyps californianus*) activity using satellite telemetry data. *The Open Ornithology Journal* 5:82-93.

was present at a location for the last record of the first day and then present for four consecutive hours at the same location (i.e. within a 40-meter radius) between midnight and 7:00 AM the next day despite the first record of that day being logged outside of the 40-meter radius, the script identifies this as a Tier 2 roost occurrence.

Tier 3 Roost

This type of roost occurrence accounts for the possibility of telemetry data outliers as describe as a potential reason why Tier 1 parameters are not initially met by potentially roost records. The Python script was further enhanced to identify whether up to the first three records for the second day are within a feasible flying distance from the previous or next record given the timestamps of those records. That is, if a bird is recorded as being located a distance away from the previous record location that is not feasible given the bird's known maximum flight speed (obtained from all available telemetry data for that bird between December 2013 and June 2018) and the difference of the two records' timestamps. If the bird could not have feasibly flown that distance within the time difference, the record is removed from consideration due to its likelihood as an outlier.

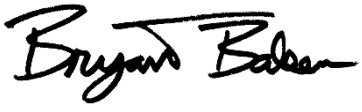
Additionally, some condor telemetry data files provided by USFWS indicate whether a particular record is an outlier. These records were also removed by the Python script during the analysis. If Tier 1 or Tier 2 parameters are met, but outlier records occurring between the first and second day identified using the methods above are removed, the script identifies this as a Tier 3 occurrence.

Using these methods, we conducted an analysis of condor tracking telemetry data from December 2013 to December 2018 (again, the period between July and September of 2018 was not included as those data have not yet been provided to us by the USFWS). This analysis delineated 47 condor roosts within the proposed fuel break location or within 0.5 miles of the proposed fuel break (Figure 1).

Table 1 contains information about each roost, included location data, bird identification, timestamps, roost type, and the unique "EventID" for the telemetry record used as an estimate for the location of a roost. We would like to note that seven of these roosts occurred in during the last quarter of 2018—the most recent data available. Please see our previous scoping comments for more information about why all of these roosts should be considered active and how that affects the Project.

Thank you for this opportunity to provide comments on the Project. Again, please provide us with all future public notices, environmental documents, and decision documents related to this project.

Sincerely,



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-118.975487	34.85064	2018-10-12 23:51 PDT	2018-10-13 00:02 PDT	740	Tier 1	7623672956
-118.930670	34.84065	2018-10-22 23:59 PDT	2018-10-23 00:06 PDT	570	Tier 1	7799013368
-118.916008	34.83772	2018-11-01 23:52 PDT	2018-11-02 00:04 PDT	462	Tier 1	7878607187
-118.910072	34.83912	2018-11-01 23:53 PDT	2018-11-02 00:03 PDT	772	Tier 1	7890137268
-118.907333	34.84034	2018-11-01 23:58 PDT	2018-11-02 00:09 PDT	509	Tier 1	7878609101
-118.907326	34.84037	2018-11-20 23:52 PST	2018-11-21 00:03 PST	616	Tier 1	7994670255
-118.903442	34.82953	2018-12-11 23:53 PST	2018-12-12 00:03 PST	493	Tier 1	8090621268

Figure 1. California condor roost sites near the Project Area estimated using condor tracking data (from December 2013 to December 2018, with the exception of data from July 1, 2018 to September 30, 2018 which have not yet been provided by the USFWS) provided by the USFWS and enhanced methods derived from Cogan et al. (2012). Roost buffer radii are 0.5 miles as directed by U.S. Forest Service (2005b).

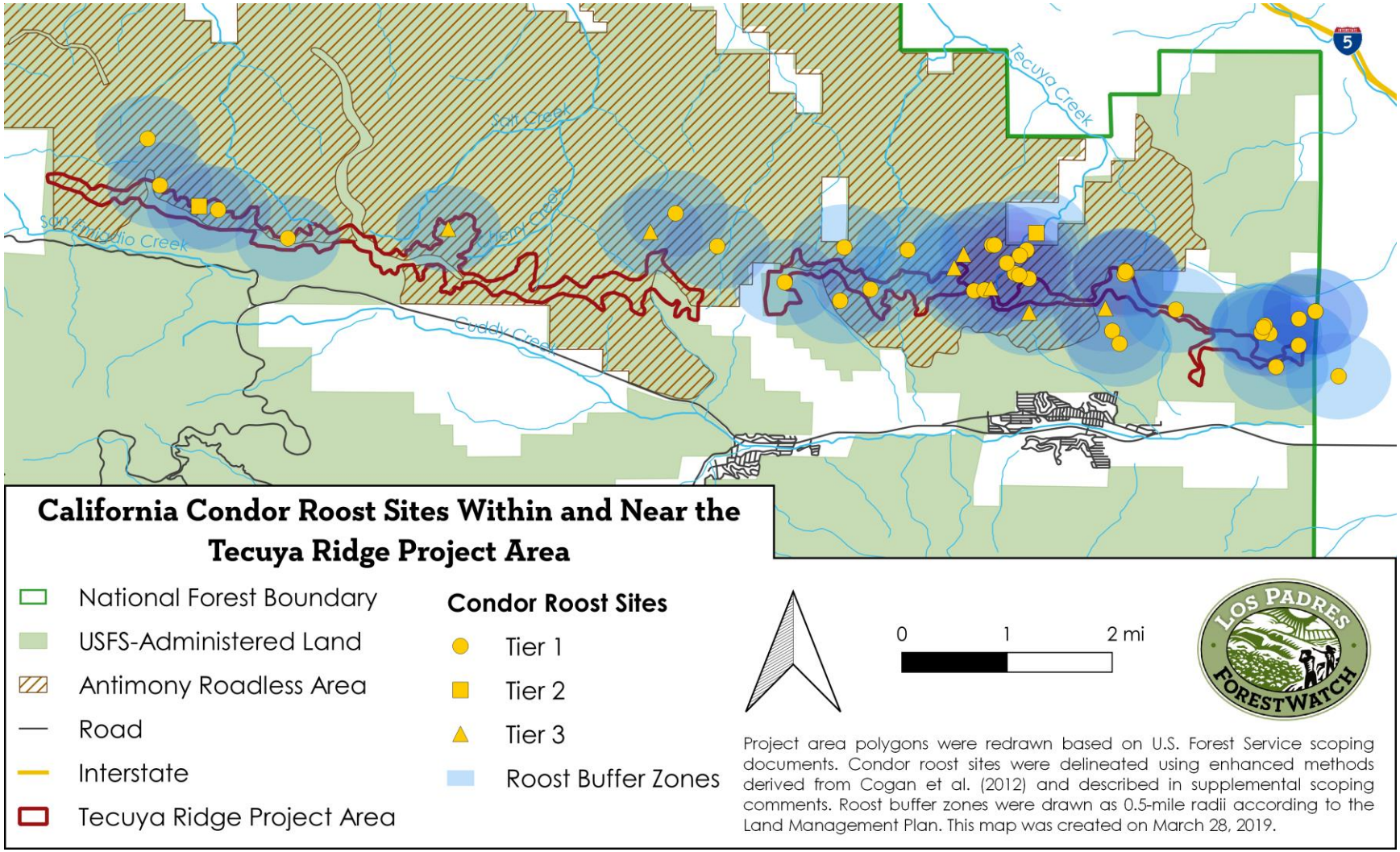

EXHIBIT I

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Open Access

Analysis of California Condor (*Gymnogyps californianus*) Activity Using Satellite Telemetry Data

Christopher B. Cogan*[1], Jesse D'Elia[2], Ken Convery[3], Joseph Brandt[3] and Tom Bulgerin[4]

[1]*Environmental Science and Resource Management Program, California State University Channel Islands, 1 University Dr. Camarillo, CA 93012, Redwood Mapping, 5416, USA*

[2]*U.S. Fish and Wildlife Service, Pacific Regional Office, 911 NE 11th Avenue, 4th Floor, Portland, OR 97232, USA*

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Abstract: We describe new methods for quantifying specific in-situ activities of wildlife, in this case the endangered California condor (*Gymnogyps californianus*). These methods extract information from hundreds of thousands of temporally continuous and spatially explicit satellite telemetry reports. Visual observations and ground-based telemetry can provide behavioral data, although the information is often spatially and temporally limited and sample sizes can be small for wide-ranging species. Automated satellite telemetry offers continuous position reporting and unbiased spatial coverage, but to date has lacked thematic content such as the time, place, and duration of particular activities. Procedures developed for this study use a combination of models and geographic information systems (GIS) to identify condor transit flight, perching, roosting, and nesting activity based only on hourly telemetry position reports. This approach combines the temporal and spatial advantages of automated telemetry with increased thematic quality from activity models. The analytical methods were applied to 340,694 satellite-based position records from 51 California condors which were collected from June 2005 to April 2012. We identified 31,268 extended perch locations and an additional 15,483 overnight roost locations by translating basic location, speed, and time data into characterizations of bird activities. This approach correctly identified nine of the ten known nest sites occupied by condors outfitted with telemetry transmitters based only on the telemetry data. The spatial locations of these activities were mapped using GIS. This represents a significant advantage over simple location and movement data normally associated with wildlife telemetry, and is applicable to a wide range of species.

Keywords: California condor, Satellite telemetry, GIS, Wildlife activity model.

INTRODUCTION

The use of satellites to track individual animals through space and time is revolutionizing our understanding of animal movements and habitat use [1-3]. Research on cryptic species that move long distances or inhabit remote or inaccessible areas has been especially aided by satellite telemetry, as the vantage point from space can provide a relatively unbiased look at how these individuals move and conduct activities [4]. Satellite telemetry is also well suited to the study of endangered species, where a timely and clear understanding of habitat needs and threats is often essential to apply effective management [5].

The California condor (*Gymnogyps californianus*) is an iconic endangered species, having received international attention by scientists, policy makers, and the general public for the last five decades [reviewed by 6]. The condor is considered a flagship endangered species, representing a considerable range of conservation challenges, and serves as an example of how science, captive breeding, reintroductions, and intensive management can save a species from the brink of extinction [6]. The condor is also a good candidate for investigating how we might mine satellite telemetry data for additional information useful for applied conservation because: (1) a large number of individuals in the population are outfitted with satellite telemetry, (2) condors use a wide variety of habitats and range over large areas, and (3) the population is expanding, meaning that it will be useful to managers if we can identify where condors are performing specific activities (e.g., nesting, perching, roosting).

California condors are one of the largest soaring birds on the planet [7]. With a massive wingspan, condors rarely use flapping flight; instead, they are masters of soaring flight. This is a critical adaptation, because as obligate scavengers they must be able to efficiently search vast areas for medium- to large-sized mammal carcasses [8, 9]. Condors are not considered habitat specialists [7], but they do have specific habitat requirements for certain activities. Nests are generally in mountainous areas in caves located on cliff faces, alt-

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hough sometimes in large trees [10]. Condors will typically roost in trees or on rock ledges. They forage primarily in grasslands or open woodlands where they can more easily locate food and scan for potential predators. California condors generally do not successfully breed until they are 6-8 years old (median age at first reproduction for females = 8.6; males = 8.1), but can live >50 years in captivity [11]. Breeding pairs generally fledge less than two chicks in three years due to their exceptionally long breeding cycle and the need for extended post-fledging parental care [12]. Their slow maturation, long breeding cycle, and low fecundity make populations sensitive to increases in adult mortality [12].

The California condor's historical range once extended from southern British Columbia to Baja California, but contracted to a relatively small area encompassing the mountains of southern California by the 1960s due to wanton shooting and contaminated food resources [6, 13]. The species was one of the first to be placed on the list of endangered species by the U.S. Fish and Wildlife Service in 1967, under the predecessor to today's U.S. Endangered Species Act. A recovery plan was formulated for the declining condor population in 1975 (U.S. Fish and Wildlife Service 1975) and following a series of reports that called for development of captive breeding strategies [14, 15], an intensive research program was initiated in the 1980s [6, 10]. As part of that research program condors were captured and fitted with radio transmitters for ground-based telemetry tracking [8]. This effort greatly improved our knowledge of condor movements and the habitats they used [16, 17]; however these telemetry studies were largely limited to line-of-sight radio signal reception. The California condor remains a critically endangered species and the primary threat to its continued survival is lead toxicosis [18, 19]. The pathway for lead ingestion is through gut piles left in the field by hunters after they remove the meat, or through animals that are shot and unrecovered [19, 20].

The condor population suffered further losses in the winter of 1984-1985 with a 40% decrease in the remaining wild population. Additional condor mortality in 1986 prompted a decision to remove all remaining condors from the wild to prevent substantial losses and to maximize the genetic diversity of the small captive flock [6]. All condors had been trapped and placed in captivity by 1987, with the world population numbering only 27 individuals. A successful captive breeding program and newly developed release techniques led to the first releases to the wild of captive bred condors in January, 1992. Released condors were outfitted with telemetry to monitor their movements.

Ground-based radio tracking of condors continues to be an essential tool for management of the species after nearly three decades of telemetry use. Field personnel have been able to use telemetry-derived location data to: (1) identify whether birds are stationary for long periods (which might indicate that they have been poisoned and are in need of assistance, or that they are deceased); (2) identify areas of seasonal or traditional use; (3) identify areas of potential conflict, where the birds and specific threats occur at the same locale; and (4) assess patterns of habitat expansion as the wild population increases.

By 2005, reliable satellite-based telemetry that integrated global positioning systems (GPS) began to offer an additional type of management information for condors. Satellite telemetry complemented the ground-based telemetry, offering precise hourly position reports during daytime that provided vastly superior temporal and spatial resolution. The satellite telemetry generated improved position reports, just as the growing population made thorough visual monitoring of each bird's activities more difficult. The application of ground-based radio telemetry data and visual observations effectively resulted in *high* thematic resolution (observed behavioral data) whereas the GPS telemetry program with a rarity of visual observations reverses the character of the data to have high spatial and temporal resolution but *low* thematic resolution.

Condor GPS data have already provided insights on bird movements and habitat occupancy [21, 22]. Here we present new methods for extracting more information from telemetry data. We describe the California condor satellite telemetry dataset for southern California and present a series of algorithms to increase the thematic resolution of GPS data. We also explore how this additional thematic resolution might improve our understanding of condor habitat use and we assess the management implications of these methods. Then we report on what is effectively a new population of condors formed in the years following captive breeding and release to the wild. This population may have activity patterns that differ from those of past decades. Our dataset is also unique, being the largest dataset of condor locations ever analyzed. We restrict our analysis to satellite telemetry data to explore its potential as a sole information source, as well as to minimize any bias from ground-based observation. Whereas our focus is on the California condor, we anticipate that these methods will have applications for other species where satellite telemetry monitoring is used.

MATERIALS AND METHODOLOGY

From 16 June 2005 through 3 April 2012, 51 condors released in southern California were fitted with patagial mount GPS telemetry units (Argos/GPS PTT, Microwave Telemetry, Inc., Columbia, MD) which upload condor movement data to the Argos satellite network. Approximately 40% of the released birds were equipped with satellite telemetry, with monthly and annual variation in the number of birds transmitting data. The specified horizontal accuracy of the solar powered GPS units is 18 meters, with a position recorded every hour during daytime (approximately 06:00 – 19:00). Vertical accuracy is specified as 22 m, however values roll over to restart with one meter at an altitude of 2048 m. We did not include altitude data in our models because of insufficient resolution to discriminate activities near the ground. Spatial resolution of the data is approximately 0.00017 degrees horizontal, or about 19 m latitude. The dataset for this analysis includes 340,694 point localities (Fig. **1**), with data volume and number of birds increasing since 2005 (Fig. **2**). Six of the 51 condors were newly outfitted with satellite telemetry in December 2009. Ten of the 51condors were not outfitted until December of 2011. These large end-of-year additions mask the summer data emphasis noted in annual summaries from other years (Fig. **2**). The transmitters are programmed to shut down at night to con-

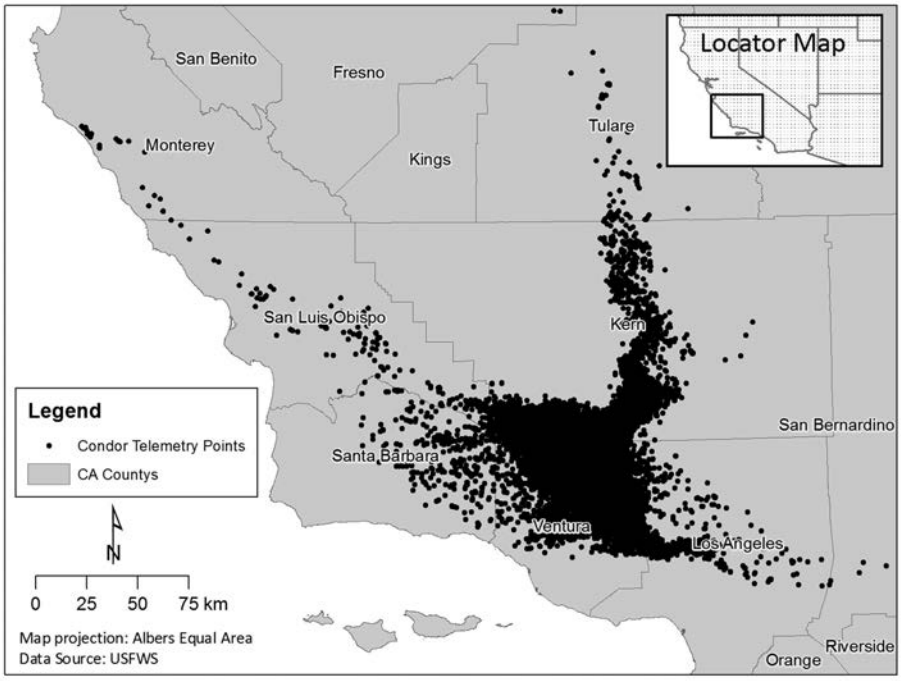

Fig. (1). California condor GPS telemetry locations in Southern California counties from 16 June 2005 through 3 April 2012.

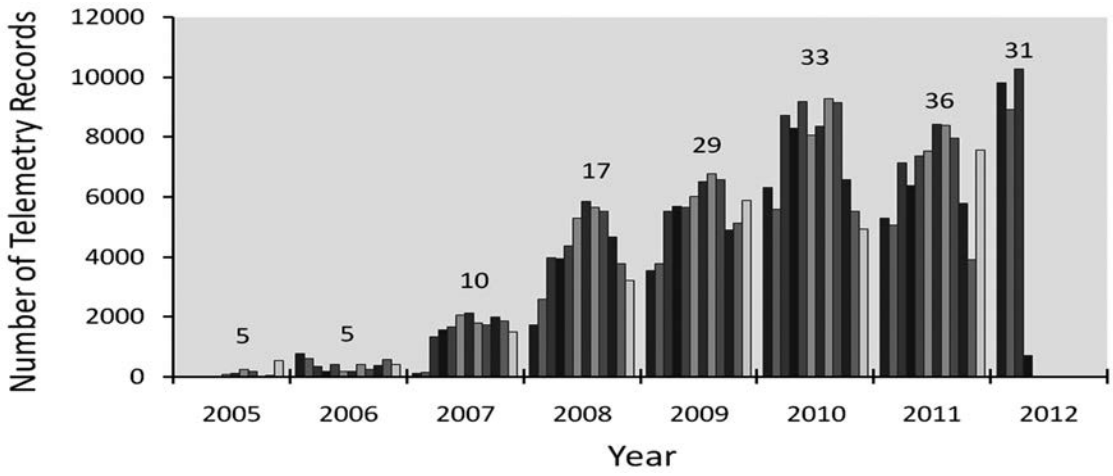

Fig. (2). Frequency distribution for number of condor telemetry records by year and month, 16 June 2005 – 3 April 2012. Each grey-shade bar represents one month. Values at the top of the bars are the total number of birds with satellite telemetry in each year. Some condors were equipped with telemetry late in the year. Note that years 2005 and 2012 are partial.

serve battery power. Each hourly record includes a transmitter number, location (latitude, longitude, and altitude), flight speed, date, and time. Missing position reports are common, due to limitations with satellite telemetry reception. Once downloaded, each record was linked to the identity of an individual bird, and validated for logical consistency. The data are formatted for use with Geographic Information System (GIS) software.

We used ArcMap GIS software [23] for visualization, mapping, and spatial analysis. We also used the GIS software to export data for use with the C++ programming language for temporal analysis and modeling. Our focus was on the detection of certain condor activities from telemetry data rather than habitat use generalizations which require individual condors as sampling units. We developed algorithms with four types of logical queries to detect spatio-temporal patterns in the data. One analysis looked at transit-only zones where condors fly over habitat but never land. We also analyzed the telemetry data to determine perch, roost, and nesting events to focus on stationary activities. We defined stationary birds as those remaining at one position within a 40 m radius, accommodating the precision and accuracy of the satellite telemetry and minor bird movements.

Our modeling approach is transcribed to language-independent pseudocode notation for brevity, and included as appendix material. Model inputs include all available satellite telemetry data, and output is a new GIS format map and database of specific activities. These four models categorized condor data according to the following criteria:

1). Transit Area Analysis Using Stationary vs. Non-Stationary Condor Activity Areas

We used the GPS speed value from each telemetry record to identify transit-only areas in contrast with locations where condors stop. We generated a 250 m map grid for the area of the southern California data, then assigned each grid cell a value equal to the minimum speed from all telemetry points within the cell. Grid cells with assigned values below 10 km hr^{-1} (~ 6 mph) were considered stationary records, allowing for GPS error and the need to include birds moving at less than flight speeds as "stationary."

2). Perching – Condor Activity where the Bird is Stationary

We defined perching in a general sense as stationary, non-flight activity in daytime that does not extend overnight. This activity was indicated in the telemetry data as two or more consecutive hourly reports from the same location, with GPS speed less than 10 $km \cdot h^{-1}$. Detecting the sequential stationary records allowed us to tally the number of hours associated with each perch event. See Appendix **A** for our perch activity pseudocode.

3). Roosting – Condor Activity where the Bird Remains Stationary Over Night

Our criteria for roosting assumed an individual condor has a position record in the evening matched within a 40 m radius by the first record the next day. Roosting duration is unlimited (unlike perching), including multi-day stationary periods with GPS speed less than 10 $km \cdot h^{-1}$. Our roost analysis was intended to produce two types of records: "matched" or "unmatched". The matched records have the last afternoon location coincident with the first morning position, yielding a high confidence roost report. The unmatched records have afternoon and morning (before 12:00) position reports, but in two locations. The unmatched records were labeled as "overnight events." We did not consider the overnight event records as roosts; however, they were useful indicators of condor movement during periods when telemetry was inactive in the late evening and early morning hours. Both matched and unmatched data were summarized for overall perspective, and additionally subdivided by month to reveal seasonal patterns. Our roost activity pseudocode is presented in Appendix **B**.

4). Nesting

We characterized nesting activity as courtship behavior by pairs of birds, followed by nest site selection, egg laying, and a chick hatching from the egg. Courtship involves a pair's frequent flights together and investigations of potential nest sites, so our initial focus was on synchronized locations involving two birds. Once the condors selected a nest site we looked for the continuous presence of one of the adults at a single location (± 40 m), with the two adults repeatedly exchanging nest duties. Nesting pairs were assumed monogamous within each season, so the identities of the two birds were expected to remain consistent with few other condors perching or roosting at the same location. Condor nest caves can easily block satellite telemetry signals, so we anticipated frequent data dropouts for birds on a nest. If a nest site was abandoned, frequent telemetry for both birds was expected to resume.

We began our nest analysis by building this general characterization into a logic that could be applied to satellite telemetry data. We then developed the nest logic into an algorithm to detect early courtship behavior, nest site activities, and failed nesting attempts. This analysis did require both nesting adults to have working telemetry units. Our nesting activity pseudocode is presented in Appendix **C**.

Identify Potentially Nesting Condor Pairs:

Our first task was to identify possible pairs of nesting birds that spent time together in a courtship period, using telemetry data from the first four months of the nesting season (1 January through 30 April). Our algorithm began with a search for all possible pairs of birds that had a position report at the same moment (independent of location). For each pair of birds we tallied the number of times there was a position report at the same time, referred to as the temporal sum ($\sum_T$). Next, we looked through all possible pairs of birds that were within 200 m of each other and summed the number of spatially matching records for the pair. This became our spatial sum ($\sum_S$). We based the 200 m distance for members of the pair on observations of courting birds in the field. To identify condor pairs that spend a proportionally large amount of time together, we calculated a "proximity ratio" by dividing the spatial sum by the temporal sum ($\sum_S$) / ($\sum_T$). There are many reasons why a pair of birds will travel together (e.g., feeding efficiency), so a large proximity ratio is not sufficient evidence to label a pair as nesting. Thus, we only used this ratio as a first filter to identify possible pairs. We required $\sum_T$ to be at least 50 telemetry reports in a given month to remove false positives from small dataset sizes. The proximity ratio needed to be greater than 0.40 to qualify as a possible breeding pair, indicating the pair was spending at least 40% of their time together. The 40% rule is a conservative value for condor pairs in courtship based on our field observations.

Identify Active Condor Nests:

After identifying pairs of condors that spent more than 40% of their time together, we looked for signs that a nest location had been selected. With one condor on the nest with poor telemetry, we looked for the other member of the pair to have a lone telemetry signal as it moved about to feed and roost. We identified this behavior by the rapid decrease in the temporal sum value for the pair. If the temporal sum from our identified pair of birds dropped by at least 80% (a major decrease in paired telemetry records), we predicted these birds to be nesting.

Locate the Nests:

For each nesting pair of condors, we looked for the single most common location for both birds. This point became our predicted nest location, rounded to the nearest 100 m. Courting birds will occasionally continue to investigate several potential nests in the days before final site selection. We

included each of the potential nest locations in our results when the data indicated this behavior.

Detect Nest Failure:

Typical nest duty exchanges by the adults will keep the proximity ratio low in the four months following the peak values associated with courtship. If that ratio increased to above 40%, we considered the birds to be together and outside the nest cave, indicating that they had abandoned the nest.

Accuracy Assessment for Nesting Model:

We compared our nest activity results with known nests from 2005-2012 to assess our telemetry data model. We measured accuracy in terms of the proportion of nests correctly predicted from the telemetry data, and in terms of the distance between the predicted location and the actual location as measured by biologists in the field.

Cartographic Methods Used for Presentation of Results:

Our perch, roost, and nesting output maps were based on point density in order to best visualize large numbers of data points. Density maps avoid the problem whereby large numbers of map points obscure themselves and introduce perception bias. These maps were derived using a convolution filter with an output raster cell size of 1 km and a kernel radius of 8 km for smoothing. The kernel radius determines the size of the area used to calculate an average point density, with larger areas generally resulting in lower values. We used an 8-class geometric interval classification on our final maps to discriminate a range of values, reporting density as the number of condor records per square kilometer.

RESULTS

We used hourly telemetry reports and logical algorithms based on our knowledge of condor ecology to identify transit-only zones and three condor activity types. Our results are presented here as a series of maps and charts, featuring transit, perching, roosting, and nesting activities.

Transit Area Analysis

The transit area analysis identified a central range area where all of the telemetry records were of condors in flight (Fig. **3**). Southern Kern County and central Ventura County were identified as areas of stationary activity, with additional non-stop (transit) areas on the outer fringes of the range. San Luis Obispo and Santa Barbara Counties were areas of mixed use. With this type of analysis, each 250 m grid cell was strictly classified as stationary or transit.

Perching

Our analysis detected 31,268 perch events that included 54,820 hourly telemetry records (16 % of all records) recorded between 16 June 2005 and 3 April 2012. All 51 condors in the dataset had perch events. The density values of perch locations ranged from zero (where no perch activity was detected) to 324 h/km^2 in areas with many perch events (Fig. **4**).

The perch records revealed that stationary activities were dominant in three main areas. The southern area is centered on the Hopper Mountain National Wildlife Refuge, to the northwest is the Bitter Creek National Wildlife Refuge, and to the northeast is the private Tejon Ranch Company. The highest density of perch locations was found at the Bitter Creek Refuge, where condors have been released from cap-

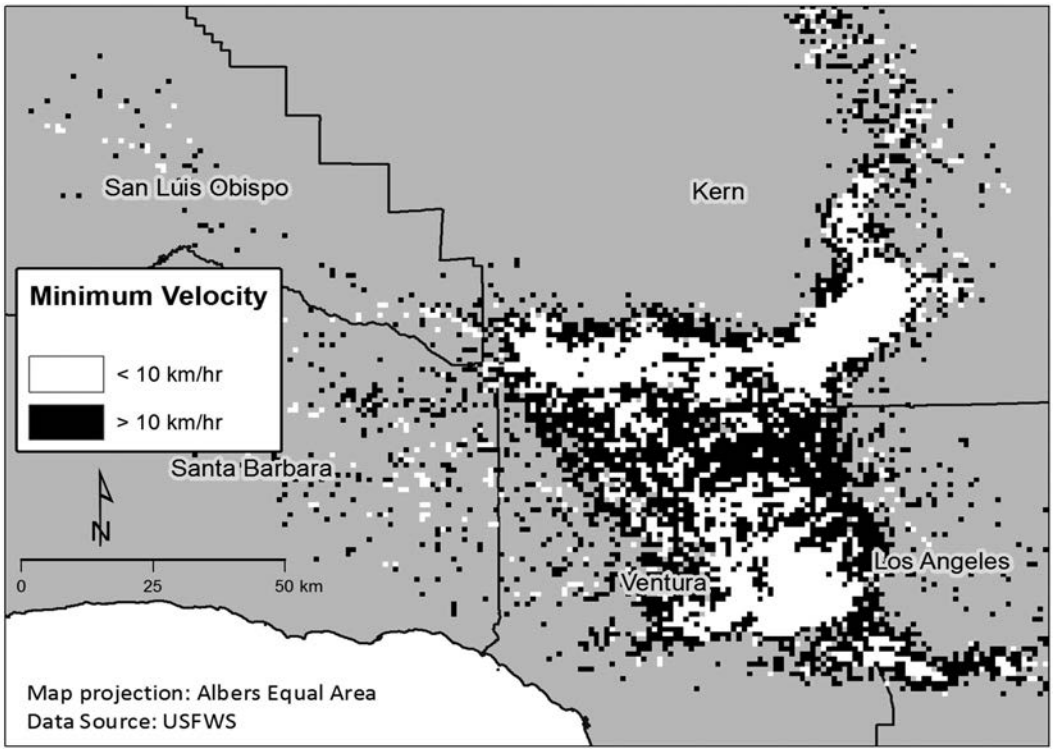

Fig. (3). Transit area analysis comparing stationary vs. non-stationary California condor activity in southern California. White areas represent 250 m grid cell locations that include stationary birds and black areas represent transit areas where speed was always greater than 10 km·h−1.

tivity and feeding operations occurred. Less frequent perch activity was found farther north in Monterey and Tulare Counties and as far south as central Los Angeles County. The northern perch locations in central Kern and Tulare Counties were recent range expansions dating from 2010 and 2011.

Roosting

We identified 15,483 roost events with matching evening and morning locations. All 51 condors with satellite telemetry had roosting events. The number of combined roost and non-matching overnight events records was 27,653. The majority of roost locations were in the same three areas where high density perch records occurred, with additional low densities of roost locations spread broadly across the range (Fig. **5**).

The 15,483 roost events represent 56% of the 27,653 combined roost and non-matching overnight events, and reflect limitations in the operational hours of the telemetry data. Proportions of roost events vs. the combined total of

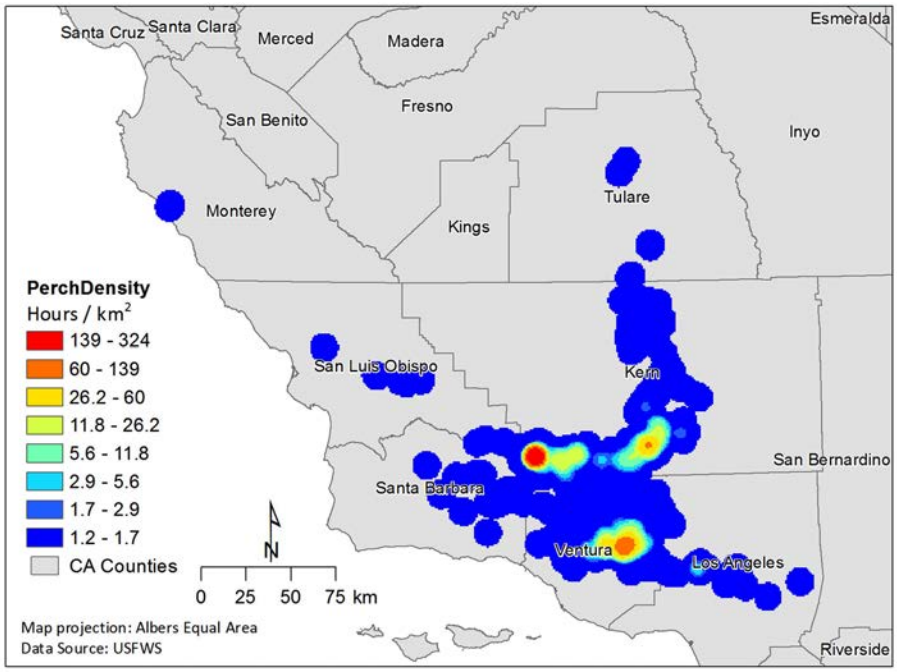

Fig. (4). California condor perch locations in southern California, 2005-2012, as determined by analysis of satellite telemetry data. Perch points from GPS positions are represented as a density field reflecting hours of perching per square km compiled over a seven-year period.

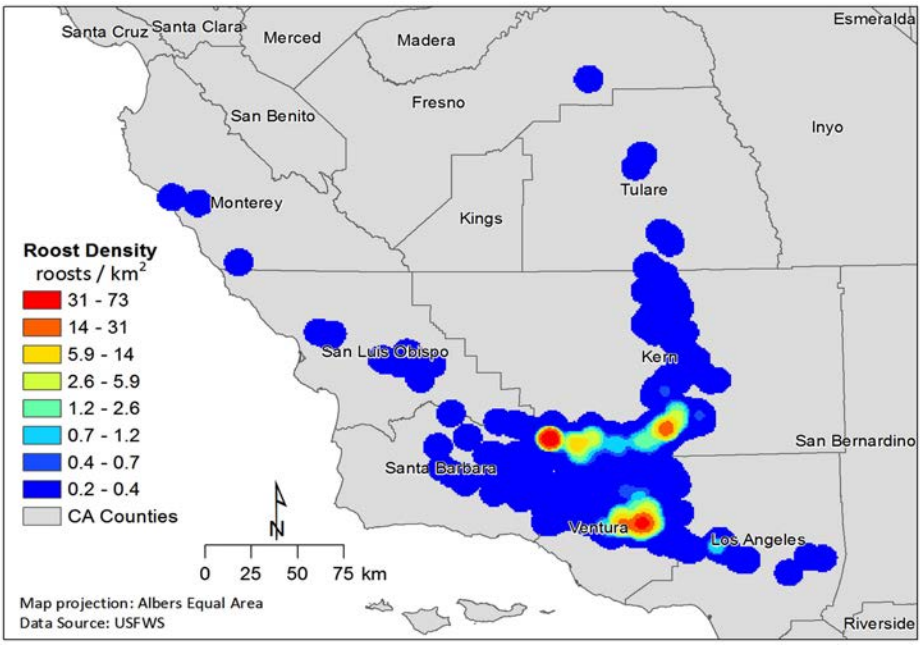

Fig. (5). California condor roosts in southern California, 2005 – 2012, as determined by analysis of satellite telemetry data. Roosts are represented as a density field of condor roost events with values ranging from zero to 73 roost events per square km using an 8 km density distribution kernel for smoothing.

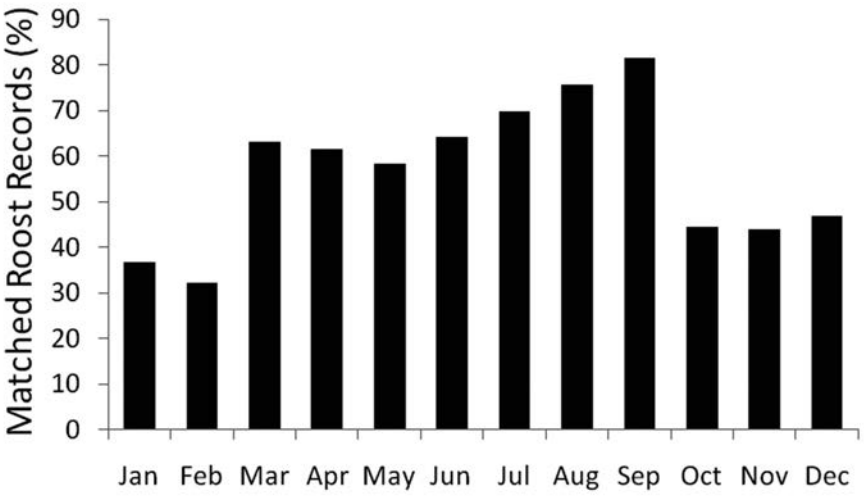

Fig. (6). Monthly proportions of condor matching roost events vs. the combined total of roost and overnight events. Average value over all months is 56%, based on 15,483 roost events from 2005 – 2012.

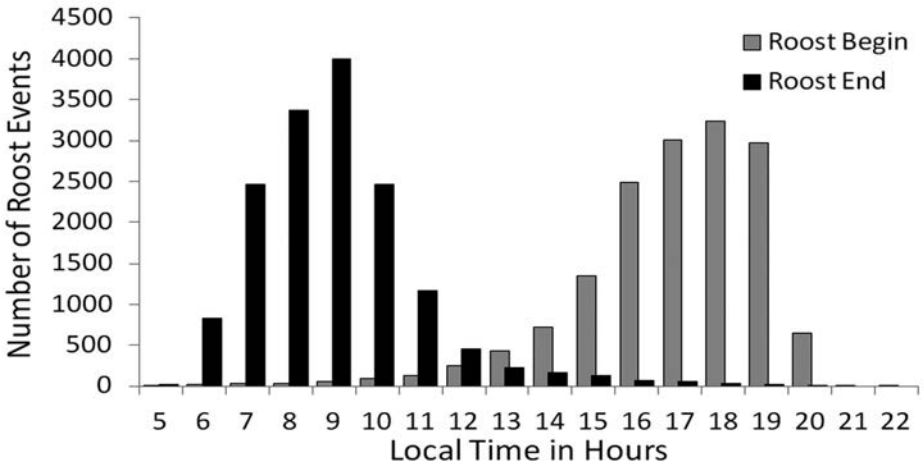

Fig. (7). Distribution of California condor roost end times (time of 1st morning flight) in black and roost begin times (time when birds stop flying for the day) in gray. Time of day as Pacific Standard Time for all records. Based on 15,483 roost events from 2005 – 2012.

roost and overnight events varied with season, with a higher proportion of the matching roosts occurring in summer months (Fig. **6**).

The roost start and end time analysis determined that the most common beginning time for roosting was 18:00 (local time) and the most common ending time was 09:00 (Fig. **7**). Monthly reporting of roost activity revealed a seasonal trend in the data, with 17:00 the most common roost begin time in January, shifting to 19:00 in July when days are longer (Fig. **8**).

Nesting

Our analysis independently detected nesting activity for nine of the 10 nesting condor pairs associated with satellite telemetered birds in southern California between 16 June 2005 and 3 April 2012. Other condors were also nesting, but they were not birds with functioning satellite telemetry. The single undetected nesting pair involved an egg that failed to hatch in 2009. The analysis identified an additional 11 potential condor pairs through our first-filter proximity analysis and then correctly classified these as non-nesting birds. Nest locations were also detected for all nine condor pairs. Five of the nests were detected with each having a single location. For the other four nests, the data indicated that each had 2-3 probable locations without a clear single candidate. Accuracy of the detected nest locations compared to field verified nests ranged from 16 to 681 m, with an average distance of 191 m. Alternate nest locations where nesting birds spent time during courtship but did not adopt the site were recorded as potential future nest locations. The maximum distance from true nests to the alternate locations investigated by the birds in courtship was 6.2 km; the minimum distance was 423 m, with an average of 2.9 km. The egg failed to hatch at two of the nine nests. The nest failure analysis using the $(\sum_S)$ / $(\sum_T)$ proximity ratio correctly identified one of these as a failed nest, however the second failed nest also had the female of the adult pair die so the paired bird telemetry data were unavailable.

DISCUSSION

Several condor activities are associated with particular habitat requirements. These include foraging, perching, feed-

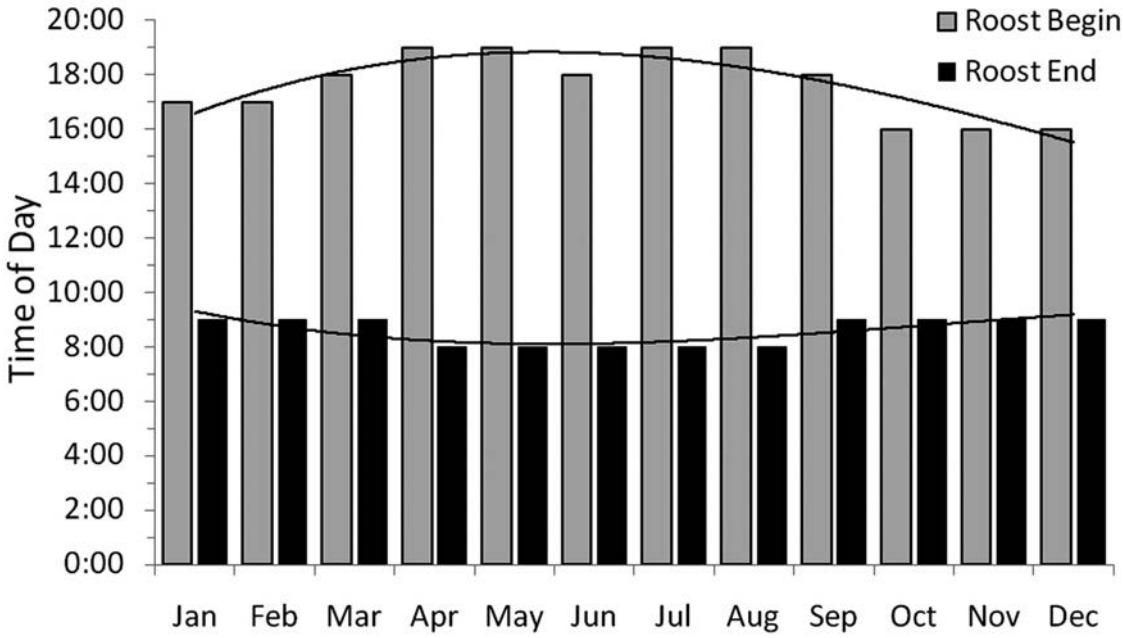

Fig. (8). Frequency distribution of the most common roost begin and end times by month. The curved trendlines indicate seasonal changes in roost activity. Time of day as Pacific Standard Time for all records. Based on 15,483 roost events from 2005 – 2012.

ing, nesting, roosting, bathing, and drinking [24]. When considering crucial habitat needs, condor biologists and land use managers have long recognized the importance of a holistic habitat picture [13], ensuring each required habitat type is available and protected for the species. For the condor, this habitat mosaic is often fragmented and distributed across many kilometers, making habitat identification and protection a challenge.

Ground-based animal sighting data can help to evaluate habitat use, however these studies are often plagued by at least three basic problems: (1) observations are typically not random or independent, (2) observation sample size is typically small (especially for rare or cryptic species), and (3) error or uncertainty in sighting data [17]. Satellite telemetry holds promise for addressing these issues by providing a large number of observations on a regular cycle with a high degree of positional accuracy. Our analysis indicates that if one can associate specific activities with the voluminous location information from satellite telemetry, an even clearer understanding of how animals use space is likely to emerge. Our analysis focused on these challenges, detecting specific locations for individual transit, perching, roosting, and nesting activities.

Transit analysis and perch detection

We identified transit zones and perch locations, finding overflight (transit) zones and 31,268 perch events (Fig. **4**). Whereas a condor could pause on a tree branch for a few moments then fly away, our perch model identified birds in the same location for two or more consecutive hourly reporting periods. Because our perch model was only based on stationary positions and hourly telemetry points, actual condor activity was probably varied, including possible drinking or feeding events. These "extended stationary" records revealed areas where individual condors spend more time on the ground. Our transit area analysis (Fig. **3**) also identified areas where condors were stationary; however this activity was determined using only speed data so was less sensitive to the duration of the stopover compared to perch detection. With both approaches we had similar results, finding that each condor used the far northern Ventura County more for transit and less for stationary activities. Both analytical approaches characterized central Ventura County and southern Kern Counties as habitat where stationary activities occur.

Any area where condors stop is an area of interest for condor management. Locations where condors spend the most time have additional needs for monitoring existing land use practices and proposed changes in land use. Two of the high density perch areas are currently in the vicinity of the Bitter Creek and Hopper Mountain National Wildlife Refuges where provided food attracts the birds. A third area is on the private Tejon Ranch Company recently recolonized by condors [22] where habitat protection measures are yet to be determined.

Roosting

The roost analysis identified locations where condors stay overnight. This analysis was sensitive to the daily operating hours of the telemetry transmitters, as some transmitters were programmed to stop transmitting before the individual condor reached a roost site for the evening. With adjustments for the season, most transmitters were programmed to begin transmitting at 06:00 or 07:00 and continue until 19:00 or in some cases 20:00 each day. If a condor continues to fly after transmitter shutdown, there will be no record of the roost site until the first record the next morning. Without matching evening and morning records, our analysis took the conservative approach and rejected these locations as confirmed roost sites. Our roost analysis serves management needs in three ways:

1) We identified and mapped high confidence roost events (Fig. **5**), identifying specific areas for further habitat assessment.

2) For mismatched overnight events we highlighted seasonal patterns, to identify inadequate transmitter settings for daily operating hours (Fig. **6**). These results suggested the operational hours for telemetry should be extended in January and February.

3) We generated statistics on start and end times for the overall roost activities (Fig. **7**), and categorized the data by month (Fig. **8**). The trendline for monthly roost times was consistent with day length in southern California. This provides a long-term perspective on roost schedules, and is particularly useful when there is a need to prioritize field observation hours.

Our analysis of roost activities provides critical data to support additional research using formal habitat use models. Records from 2012 and 2011 in northern Kern and Tulare Counties suggested a continuing range expansion into these historic habitats. Likewise, roost records in the remote Santa Barbara County wilderness areas suggested these historic nesting and roosting areas may be repopulated in the near future. From the perspective of endangered species management, increasing roost records in Santa Barbara County exemplify valuable information to assist with revised habitat assessments and interagency planning.

Nesting

Our nesting analysis was perhaps the most challenging, because of inherent limitations in nest site telemetry. Condors tend to nest in shallow caves on rock cliffs – locations that often shield the telemetry antenna from contact with Argos satellites. A condor shielded at a nest site can be characterized as much by an unusual lack of signal as by the multi-hour stationary signal that would otherwise be expected. Telemetry is also problematic when condors are approaching a nest, as they tend to enter a limited transmission zone as they descend into the canyons associated with the cliff sites. Detecting nine of the 10 nests associated with telemetry equipped condors presents a good case to expand the telemetry program to include more birds. In particular, we were able to identify this critical activity early in the courtship phase, before the egg was laid.

The early detection of condor pairs in courtship allows heightened field monitoring of potentially nesting birds. It is also critical to determine the nest location as soon as possible, to assess the area for hazards and alert the field teams to begin nest management protocols. California condors typically spend the first month of the nesting season in courtship, involving paired flights and time spent investigating several potential nest locations. Experienced field biologists will often observe nest site selection narrowing down to two or three possible sites, however the final site is often unclear until the egg is actually laid. The potential nest sites can be formerly active nests, but may also indicate new sites that will be used in future years. In some cases, our analysis highlighted more than one option for a nest location. This last minute uncertainty for the final nest location is consistent with field observations and represents valuable information to be saved as clues for future sites.

Two of our detected nest sites failed before the egg hatched. Our proximity ratio increased after a 2009 nest failure, correctly indicating both adults were away from the nest instead of incubating. A failed nest in 2011 did not result in the expected ratio increase, because the adult female had died near the time of the nest failure.

Implications for Telemetry Activity Models

Historically, condor researchers have used a variety of data and analytical techniques to detect and predict activity patterns. Functioning as a flagship species, and an endangered species, researchers have accumulated relatively large volumes of condor data presenting unique opportunities for the development and testing of telemetry activity models. Early work by Carl Koford [24] and others was based on field observations. Later researchers introduced new technologies such as photo surveys [25], GIS spatial analysis [16, 17], and habitat use analysis [22] to better understand the species. In this paper, we have analyzed both movement and specific activities for what is effectively a new population formed in the years following captive breeding and offspring release to the wild. Our telemetry analysis approach offers a methodology for comparing current habitat use to historic patterns, as well as for monitoring a growing population and an expanding range. This approach is uniquely suited to make best use of large volume satellite telemetry data that are growing daily.

Radio telemetry data such as the condor data analyzed here can be transitioned from basic locality report *data* to management-relevant *information* through a cautious interpretation of patterns. A challenge is to base the interpretation on sound knowledge of the species and a familiarity with the day-to-day activity patterns that are suggested by the telemetry data.

The Condor Recovery Program field teams use both ground-based and satellite telemetry for daily management operations. The ground-based data facilitate intermittent visual observations whereas the satellite data contributes frequent and precise location data. Combined, these data offer information on bird location, assist in the location of potentially injured birds, and offer clues to locations of critical interest such as nesting areas. These applications have transformed field operations for the condor, greatly increasing the ability of biologists to monitor and manage the reintroduced birds.

A second application of the telemetry data is the longer term retrospective, as a means to integrate months or years of data to build up a picture of activity patterns and habitat use. Biologists working in the field generally have an excellent sense of daily and seasonal patterns; however, is it difficult to formulate and maintain a synoptic overview of year to year patterns.

Our analysis methods have both short-term and long-term applications. Using only the satellite telemetry data, we have presented an analysis that achieves some of the advantage of visual observation, combined with the satellite-based ad-

vantage of vast volumes of long-term information with high accuracy GPS spatial data.

Information gained from satellite telemetry is invaluable for condor management. These data can guide us to improve decision making on a range of critical land use planning issues, such as zoning, lead exposure, recreation management, oil and gas extraction, wind farm placement, wilderness additions, and timber harvest planning. As intensive management operations diminish (and as the condor population increases), our ability to remotely monitor these birds will become increasingly important.

Using over 340,000 records of hourly telemetry data our analysis of the previous seven years of condor activity has provided insights to the key activities of transit flight, perching, roosting, and nesting. The results of our analysis are consistent with general knowledge of condor activities, but more importantly we can use these methods and the insights they provide to support and enhance decision making in specific habitat areas. Future research directions will likely include models for additional activities such as feeding, although currently this appears to be limited by GPS accuracy and precision. The activity analysis also enables additional research on habitat characterization, which can be accomplished by combining telemetry analysis with individual condors as sampling units, land cover data, and spatial analysis.

This analysis is designed to directly benefit the management of the California condor and its habitat. The work also serves as an example for other wildlife research on cryptic mobile species, with particular applications for intensive conservation management of endangered or threatened species. The combination of our spatio-temporal activity models and improving telemetry technology is well suited to better inform research and management for the increasing numbers of avian and mammalian taxa being studied using satellite telemetry. This advance allows us to move beyond basic animal movement tracking, and to refine our knowledge of animal activities through space and time.

CONFLICTS OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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Appendix A. Pseudocode for Critical Programming Elements to Detect Condor Perch Activity from Satellite Telemetry Data.

```
for every bird (b1) in the database {
 for every record d[n] {                    // possible start for a perching sequence
  perch = false;
  overnight = false;
  site = position of d[n];
  for every record d[n+m] after d[n] {      // search for a perching sequence
   // if bird is moving faster than 10 km/hr, this is the end of the sequence
   if ( speed of d[n+m] > VelocityCutoff )    exit loop;
   // if bird has moved more than 40m, this is the end of the sequence
   if ( site - position of d[n+m] > DistanceCutoff )     exit loop;
   // if the sequence extends overnight, don't count it as a perch event
   // don't exit the loop yet so that the we get the rest of the overnight sequence
   if ( time of d[n+m] == next day)  overnight = true;
   // if two or more hourly records are missing then be conservative and assume the sequence has ended
   if ( time of d[n+m] > time of d[n+m-1] + DiscontinuityCutoff )  exit loop;
   // if the bird has been at this location for at least one hour, it's a perch
   if ( time of d[n+m] - time of d[n] >= DurationCutoff ) perch = true;
  }
  // is the sequence really a perch?
  if ( (perch == true) and (overnight == false) )     save this as a perch record;
  // advance the loop to look for the starting point of a new sequence...
  if ( (perch == true) or (overnight == true) ) {
   // next start is after this sequence has ended
   d[n] = d[n+m];
  } else {
   // bird may have moved >40m from original site, but <40m from an intermediate point
   // start with intermediate point, use sliding window
   d[n] = d[n+1];
  }
 }
}
```

Appendix B. Pseudocode for Critical Programming Elements to Detect Condor Roost Activity from Satellite Telemetry Data.

```
for every bird (b1) in the database {
 for every record d[n] {                    // possible start for a roosting sequence
```

```
   overnight = false;
   site = position of d[n];
   for every record d[n+m] after d[n] {    // search for a roosting sequence
    // if bird is moving faster than 10 km/hr, this is the end of the sequence
    if ( speed of d[n+m] > VelocityCutoff )    exit loop;
    // if bird has moved more than 40m, this is the end of the sequence
    if ( site - position of d[n+m] > DistanceCutoff )    exit loop;
    // if the sequence extends overnight, then it is a roost
    // don't exit the loop yet so that the we get the rest of the sequence
    if ( time of d[n+m] == next day)  overnight = true;
    // if two or more hourly records are missing in the middle of the day
    // then be conservative and assume the sequence has ended
    if (( time of d[n+m] is not the first record of the day)
      and  ( time of d[n+m] > time of d[n+m-1] + DiscontinuityCutoff ))  exit loop;
   }
   // is the sequence really a roost?
   if ( overnight == true )    save this as a roost record;
   // advance the loop to look for the starting point of a new sequence...
   if ( overnight == true ) {
    // next start is after this sequence has ended
    d[n] = d[n+m];
   } else {
    // bird may have moved >40m from original site, but <40m from an intermediate point
    // start with intermediate point, use sliding window
    d[n] = d[n+1];
   }
  }
}
```

Appendix C. Pseudocode for Critical Programming Elements to Detect Condor Nesting Activity from Satellite Telemetry Data.

```
for every possible combination of birds (b1,b2) in the database {
 for every year {
  for every month in the year {       // January-December
   // make a table:
   // there's one row for each daylight hour during the month
   // there are two columns to hold the records for the two birds
   table[hours,2]
   // align the records for the two birds
   for every record (r1) for bird (b1) in the month {
    table[time of r1,1] = r1;
   }
   for every record (r2) for bird (b2) in the month {
    table[time of r2,2] = r2;
   }
   // count up the number of table lines where both birds have a record
   temporal_sum = 0;
   for every line in the table {
    if ((table[line,1] not empty) and (table[line,2] not empty))  temporal_sum = temporal_sum + 1;
   }
   // count up the number of table lines where we have a record of the two birds being near each other
   spatial_sum = 0;
   for every line in the table {
    if ((table[line,1] not empty) and (table[line,2] not empty)) {
     // if birds are closer than DistanceCutoff (40m) we consider them to be at the same place
     if ( position of table[line,1] - position of table[line,2] < DistanceCutoff )    spatial_sum = spatial_sum + 1;
    }
   }
   // save these two metrics for each month
   saved_temporal_sum[month] = temporal_sum;
   saved_spatial_sum[month] = spatial_sum;
  }
  // done collecting the metrics, now analyze them...
  // filter 1: finding possible courtship behavior
  possible_courtship = false;
  max_proximity_ratio = 0;
  for every month in the mating season {       // January-April
   // calculate the proximity ratio - what fraction of the time the birds are together
   proximity_ratio = saved_spatial_sum[month] / saved_temporal_sum[month];
```

```
    // we require at least 50 data points to filter out small sample errors
    // we set the threshold for possible courtship at 40%
    if ((saved_temporal_sum[month] >= 50) and (proximity_ratio >= 0.40)) {
      possible_courtship = true;
      if (proximity_ratio > max_proximity_ratio) {    // find the month with the highest ratio
        max_proximity_ratio = proximity_ratio;
        courtship_month = month;
      }
    }
  }

  if (possible_courtship == false)     no courtship, go on to the next year;
  // filter 2: look for nesting behavior
  nesting_behavior = false;
  for every month after courtship_month, max of four months {
    // check if there has been a significant drop (80%+) in the temporal sum since courtship
    temporal_sum_change = saved_temporal_sum[month] / saved_temporal_sum[courtship_month];
    if (temporal_sum_change < 0.20)     nesting_behavior = true;
  }
  if (nesting_behavior == true)     found a nesting pair for this year;
 }  // end of year loop
}  // end of bird pairing loop
```

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EXHIBIT J

FOREST-WIDE RECREATIONAL TARGET SHOOTING BIOLOGICAL ASSESSMENT FOR FEDERALLY-LISTED PLANT AND WILDLIFE SPECIES, LOS PADRES NATIONAL FOREST, CALIFORNIA.

Monterey, Santa Lucia, Santa Barbara, Ojai and Mt. Pinos Ranger Districts.

March 2019

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This document is prepared in conformance with the legal requirements set forth under section 7 of the Endangered Species Act of 1973 (19 U.S.C. 1536(c) as amended, 50 CFR 402, and standards established in Forest Service Manual direction (Section 2672.4 through 2672.42).

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1.0 INTRODUCTION

Recreational target shooting is a defined user activity that has historically occurred on National Forest Service (NFS) lands nation-wide. This usage of public lands has been included and analyzed in previous Forest Land Management Plans (FLMP), including the current document (USDA- Forest Service 2005a). The 4 southern California Forests Land Management Plan Environmental Impact Statement evaluated all programmatic activities performed by the US Forest Service (USFS) administrative management units, and assessed the potential impacts of these activities on a variety of resource interests.

As explained in the October 9, 2018 re-initiation letter addressed to the U.S. Fish and Wildlife Service (USFWS), the Los Padres National Forest (LPNF) has requested the re-initiation of formal consultation under Section 7 of the Endangered Species Act (ESA) on the LPNF's FLMP, for which the USFWS issued a revised biological opinion (FWS-05B0017-05F0009-R002) on September 3, 2013 to address impacts to federally-listed species and new or revised designated critical habitat, and to provide for incidental take anticipated with implementation of ongoing activities covered in the FLMP (USDI Fish and Wildlife Service 2013a, USDI- Fish and Wildlife Service 2013b). LPNF specifically seeks consultation and analysis on recreational target shooting on the LPNF, one of the on-going activities addressed in the FLMP, and the implementation of FLMP Standard 36 pertaining to recreational target shooting.

2.0 CONSULTATION TO DATE

Los Padres National Forest (LPNF) formerly consulted on programmatic activities which occur on the national forest lands under the current Four Southern California Forests Land Management Plan following the completion of the plan (USDA Forest Service 2005b). Following FLMP revisions which were completed around 2010-11, LPNF staff reinitiated Section 7 Consultation with USFWS regarding ongoing recreation related activities, including activities such as target shooting (USDA Forest Service 2012a). Formal consultation related to the FLMP was completed upon receipt of a biological opinion covering activities under the FLMP (USDI Fish and Wildlife Service 2013a) and individual biological opinions addressing programmatic activities occurring on each of the southern California forests, including recreational target shooting (USDI- Fish and Wildlife Service 2013b).

The FLMP does not set a particular timeline for implementation of management actions related to recreational target shooting. However, as explained in the LPNF's June 7, 2018 letter to the USFWS, a third-party stakeholder group has raised questions as to

whether any delay in implementing Standard 36 and the information contained in the stakeholder group's whitepaper titled "Forest in the Crosshairs: The Environmental & Health Impacts of Target Shooting in the Los Padres National Forest" (Los Padres Forest Watch 2016) constitutes new information requiring LPNF to reinitiate consultation under 50 CFR 402.16(b), and whether any delay in implementing Standard 36 modifies the proposed action in a manner that causes impacts to listed species or critical habitat that was not considered in the 2013 programmatic biological opinion for the FLMP, requiring the Forest to reinitiate consultation under 50 CFR 402.16(c).

After several months of conferencing with USFWS regarding this issue, LPNF decided to reinitiate formal consultation to reassess the existing conditions regarding known dispersed target shooting sites across the LPNF and to reassess potential impacts to federally-listed species and their critical habitat. The LPNF formally requested reinitiation of consultation by letter dated October 9, 2018. The USFWS acknowledged that request by letter dated October 25, 2018.

During the process of completing the analysis for this BA, LPNF requested data records from Los Padres Forest Watch (LPFW), the author of the "Forest in the Crosshairs" report, regarding spatial data, pictures, micro-trash data and other information related to target shooting sites which were identified as part of LPFW's report. This information was requested to assist in completing the most thorough assessment possible of the potential impacts of target shooting actions on federally-listed species across LPNF-managed lands. LPFW declined to comply with this request due to a concern that the requested information could be publicly disclosed. The requested information is not confidential, and would not be properly subject to a Freedom of Information Act (FOIA) exemption. Furthermore, the Forest Service's FOIA records show that since 2009 (the earliest responsive record in the database), information related to recreational target shooting on the LPNF has only been publicly requested under FOIA by LPFW. There is no basis to withhold or protect the requested information. For these reasons, the LPNF moved forward with its target shooting analysis using the best available data/science related to potential sources of impact and Threatened, Endangered, Proposed or Candidate (TEPC) species which were currently accessible.

In this BA, LPNF re-analyzed the potential impacts of recreational target shooting and any additional impacts that the current level of implementation of Standard 36 may have had on federally-listed species. LPNF staff identified 149 known target shooting locations across the Forest, which were incorporated into this analysis, including all permitted and designated shooting sites referenced in the FLMP.

3.0 CURRENT MANAGEMENT DIRECTION

3.1 Endangered Species Act of 1973

Under the direction of the Endangered Species Act (ESA) (16 USC 1536) federal action agencies are required to consult with the appropriate federal regulatory agency regarding

agency actions or actions on federal public lands which may directly or indirectly impact federally-listed TEPC species or their designated critical habitat.

Section 4(a) of the ESA provides guidance concerning protective regulations which protect federally-listed threatened and endangered species and their habitats. It provides authority to the Secretary of Interior and the federal regulatory agencies under their direction to institute protections for species which are deemed to warrant them due to threats to their population viability.

Section 7(a) of the ESA directs federal agencies to ensure that their actions will not be likely to jeopardize the continued existence of TEPC species or adversely modify their critical habitats. Further, Section 7(c) requires that federal action agencies are required to complete a BA prior to the implementation of a project to determine if federally-listed species might be affected.

Under the ESA's implementing regulations, re-initiation of formal consultation is required where a federal action agency retains discretionary involvement or control over a particular action and where: (a) the amount of take specified in an incidental take statement is exceeded; (b) "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;" (c) "the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion;" or (d) the identified action may affect a newly listed species or newly designated critical habitat. 50 CFR 402.16.

3.2 Forest Land Management Plan

Part 1 of the FLMP (USDA Forest Service 2005a) contains goals and desired conditions for resources based upon national priorities and the management challenges identified for the four Southern California national forests, including the LPNF. The goals listed in Part 1 of the FLMP have associated strategies (FLMP, Part2) and standards (FLMP, Part 3) (USDA Forest Service 2005a) that provide the general management direction for working toward the realization of the desired conditions described in Part 1.

As explained above, FLMP Part 3 includes Standard 36 related to recreational target shooting, which provides:

> Recreational target shooting will only be allowed in designated areas and ranges. Shooters shall remove their targets and spent shells when departing designated shooting areas. Shooters shall not use paintballs or other forms of ammunition that would result in visible residue except where authorized in ranges that operate under special-use permit.

Five existing designated target shooting areas and ranges on the LPNF are addressed in FLMP Part 2, Table 490, which is excerpted below (Table 1). However, FLMP Part 2 also addresses several areas across the LPNF where opportunities for designating managed recreational target shooting areas exist and contemplates future designations in these areas.[1] For purposes of analysis, the Chicken Springs shooting area off Happy Canyon Road on Santa Barbara Ranger District (SBRD) is also treated as a designated site, as the district has managed it as a designated site for over 20 years; with posted signage, barriers and parking. However, it was not formally recognized as a designated site during the FLMP analysis, and is not included in Table 490.

Table 1. (Table 490 from the FLMP) Designated Shooting Areas- Los Padres National Forest.

Component	Shooting Areas
Concession- Operated Sites	None
Permitted Gun Clubs: Limited or No Public Access	Winchester Canyon Gun Club Ojai Gun Club
Designated Shooting Sites by Forest Order (Other Shooting Restrictions May Apply)	3 Sites on Camino Cielo
Remainder of Forest	The rest of the Forest is generally closed to recreational shooting although sites have been identified where future recreational target shooting may be allowed under managed conditions per Standard 36.

3.3 Forest Service Regulations Regarding Recreational Target Shooting

The Forest Service regulations at 36 CFR Part 261, Subpart A, contain several prohibitions that are relevant to recreational target shooting. These regulations are detailed below (Table 2).

Table 2. Forest Service regulations identified in 36 CFR Part 261, Subpart A which regulate recreational target shooting and related activities as pertaining to Forest Service managed lands.

Regulation	Prohibited Action
36 CFR 261.10(d)	Prohibits discharging a firearm "in or within 150 yards of a residence, building, campsite, developed recreation site or occupied area," "across or on a National Forest System road or a body of water adjacent thereto, or in any manner or place whereby any person or property is exposed to injury or damage as a result in such discharge," and "into or within any cave."
36 CFR 261.5(b)	Prohibits "firing any tracer bullet or incendiary ammunition"

[1] See, e.g., LMP Part 2 pp. 48–60, 66, 73.

36 CFR 261.5(e)	Prohibits "causing and failing to maintain control of a fire that is not a prescribed fire that damages the National Forest System."
36 CFR 261.9	Prohibits damaging "any natural feature or other property of the United States" or "any plant that is classified as a threatened, endangered, sensitive, rare, or unique species" or "disturbing, injuring, destroying, or in any way damaging any prehistoric, historic, or archaeological resource, structure, site, artifact, or property."
36 CFR 261.11	Prohibits "placing in or near a stream, lake, or other water any substance which does or may pollute a stream, lake, or other water," "failing to dispose of all garbage . . . or rubbish either by removal from the site or area, or by depositing it into receptacles or at places provided for such purposes," and "dumping of any refuse, debris, trash or litter brought as such from private property or from land occupied under permit, except, where a container, dump or similar facility has been provided and is identified as such, to receive trash generated from private lands or lands occupied under permit."

Additional Forest Service regulations related to 36 CFR Part 261, Subpart B allow a Forest Supervisor to issue Forest Orders in areas under their jurisdiction. These regulations are detailed below (Table 3).

Table 3. Forest Service regulations identified in 36 CFR Part 261, Subpart B.

Regulation	Prohibited Action
36 CFR 261.50(a)	A Forest Supervisor may issue Forest Orders that close or restrict the use of described areas within the Forest over which the Forest Supervisor has jurisdiction.
36 CFR 261.50(e)	Any federal, state, or local officer, or member of an organized rescue or fire fighting force in the performance of an official duty is exempt from the Forest Order.
36 CFR 261.58(m)	A Forest Supervisor may prohibit discharging a firearm, air rifle, or gas gun in particular areas by Forest Order.

LPNF has historically issued numerous Forest Orders from 2005 to present (Appendix A) related to target shooting activities, involving seasonal closure of portions of the forest or closures related to special circumstances, such as public safety. Forest closure orders and federal regulations related to hunting were not included, as they are tangential to the analysis conducted in this document.

3.5 The John D. Dingell, Jr. Conservation, Management, and Recreation Act (Public Law No. 116-9)

On March 12, 2019, the President signed the John D. Dingell, Jr. Conservation, Management, and Recreation Act into law. This law may govern certain future LPNF decision-making processes pertaining to recreational target shooting management; however, the Forest Service has not yet issued direction for implementing this new law. The law, among other things, sets forth certain procedural requirements for implementing closures of National Forest System lands to recreational target shooting including consultation with State fish and wildlife agencies, public notice and comment, and issuance of a final decision that responds to the comments received.

4.0 EXISTING CONDITION

Target shooting was previously analyzed under the 2005 FLMP- Environmental Impact Statement (EIS) (USDA Forest Service 2005b) and subsequent Section 7 consultation document (USDA Forest Service 2005c). Following the completion of FLMP revisions in 2012, LPNF reinitiated formal consultation under the FLMP, following an analysis of ongoing programmatic activities (USDA Forest Service 2012a). Following the completion of that formal consultation, USFWS issued an updated BO covering programmatic ongoing activities (USDI Fish and Wildlife Service 2013a) occurring on the 4 southern California national forests and recreational activities occurring on LPNF (USDI Fish and Wildlife Service 2013b). This Jeopardy Analysis included consideration of Standard 36 as written under the FLMP.

Recreational target shooting is known to have occurred on LPNF lands for decades, both prior to, and since the current FLMP (USDA Forest Service 2005a). Currently LPNF has 2 permitted shooting ranges (Ojai Gun Club and Winchester Canyon Gun Club) which operate under special-use permits (SUP). The Ojai Gun Club (OGC) is located at Rose Valley on the Ojai Ranger District (ORD), while the Winchester Canyon Gun Club (WCGC) is located off West Camino Cielo Road (5N19), to the northwest of Goleta, CA on SBRD. Permitted shooting ranges on LPNF are managed by organizations who hold a SUP to operate the range, and are responsible for maintenance and management of the shooting range.

There are also 3 designated shooting areas identified in the FLMP located on SBRD, 2 are located off West Camino Cielo Road and 1 (Arroyo Burro shooting area) is located off East Camino Cielo Road (5N12). In addition to these sites, a 4th location (Chicken Springs shooting area) which is located on Happy Canyon Road on SBRD, is managed by the district and recognized through public usage as a designated shooting area; although it was not identified as a designated site in the FLMP. Chicken Springs has been operated as a designated shooting area for over 20 years, and has been treated in the analysis as a designated site, as it parallels other designated sites in terms of intensity of use, frequency of use, and potential impacts. Designated shooting areas are open to

public use, and users of these sites are responsible for cleaning up shooting areas of all spent ammunition casings, garbage and debris following their use, as specified under Standard 36 and 36 CFR Part 261, Subpart A.

In addition to the known permitted and designated shooting areas, there are numerous dispersed unauthorized sites across LPNF lands where target shooting occurs. The exact number of locations is unknown, despite efforts by LPNF staff to document them. LPNF staff were able to identify 149 sites; which included all permitted, designated and unauthorized locations documented in analysis.

While permitted shooting areas are kept relatively clean by the organizations that run them, both designated and unauthorized shooting areas contain varying amounts of macro- and micro-trash (ammunition casings, glass, plastic, electronic debris etc.) as a result of public negligence, and insufficient Forest Service recreation and law enforcement staff to enforce existing regulations. The density and saturation of micro and macro-trash found at shooting areas appears to be a function of a sites' proximity to human population centers, ease of access, and frequency/ intensity of use.

While designated shooting areas are typically cleaned up periodically through efforts of LPNF staff and various collaborating volunteer groups, dispersed unauthorized locations typically are not cleaned up by recreational target shooters, resulting in their potential to contribute lead, contaminants, and excessive amounts of micro- and macro-trash to the landscape, and potentially cause damage to wildlife and vegetation. The number of these dispersed unauthorized sites, the size of LPNF (≈ 1.8 million acres), and current staffing/ funding levels prevent law enforcement officers and recreation staff from citing each individual that engages in unauthorized recreational target shooting, which makes the management of the issue problematic.

In addition to the prohibitions imposed by the Forest Service regulations at 36 CFR Part 261, Subpart A , which are always in effect, LPNF annually implements a seasonal Forest Order that prohibits recreational target shooting. This seasonal Forest Order is subject to specific exceptions defined in each order, during times of high fire danger. LPNF has also previously implemented various site-specific shooting prohibitions to address public safety and resource damage concerns. Forest Order No. 05-07-00-19-01, which is effective from January 14, 2019 to January 13, 2020 prohibits discharging a firearm outside of the two permitted shooting ranges (Winchester Canyon and Ojai Gun Clubs), subject to certain exceptions listed in the Order. Forest Order No. 05-07-00-19-01 extended a similar prohibition that had been in place since July 7, 2018, when Forest Order No. 05-07-00-18-07 took effect.

As defined under 50 CFR 402.02, unauthorized target shooting does not qualify as a federal action under the ESA, as "federal actions" are identified as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas". Activities associated with unauthorized target shooting have occurred and will occur outside the agency's span of

control, as they are not permitted or sanctioned by the agency. However, for purposes of analysis, as it is problematic to separate agency actions from unauthorized activities, LPNF and USFWS staff have jointly agreed to analyze all target shooting activities occurring on LPNF to assess impacts to federally-listed plants and wildlife.

5.0 Incident Effects Analysis

5.1 Environmental Background

Unauthorized target shooting occurs at numerous known locations throughout LPNF. The majority of these sites are located in proximity to existing roads, either along roadside pull-offs or at dead-end parking areas intended for recreational trail access on all 5 ranger districts (Figures 1-6). In order to properly analyze the impacts of target shooting on plants and wildlife species and their primary constituent elements (PCE) of habitat (Table 4), it is necessary to differentiate between areas which are randomly and infrequently used for shooting, and established shooting areas (permitted and designated shooting areas, including Chicken Springs) that are visited regularly, and have consistent impacts on wildlife which may interact with these sites. Established shooting areas are generally characterized by some or all of the following criteria:

- Permanent or semi-permanent target infrastructure
- High densities of spent ammunition
- Residual garbage (glass, cardboard boxes, old electronic equipment etc.)
- Trampling
- Damaged vegetation

To effectively assess the potential impacts of a particular shooting area, a ranking scale was developed which incorporated estimated intensity and frequency of use, and other physical site characteristics. This risk ranking scale ranged from 1-5, with 1 being very low and 5 being very high.

5.2 Cumulative Effects Boundary

The area (spatial bounding) considered in cumulative effects analysis was constrained to the Site (site center point buffered at 400m) and Local (1.5 km buffer of the site center point) scales. The temporal bounding was established to include all effects occurring since the FLMP was approved in 2005, until 10 years in the future from the present date. Cumulative effects analysis will also include beneficial effects since 2005 related to closures (seasonal and permanent) and site clean-ups.

5.3 General Sources of Impact Related to Target Shooting

<u>Potential Sources of Impact are:</u>

1). On-Site Lead Contamination

2). Off-Site Lead Transport

3). On-Site Residual Polycyclic Aromatic Hydrocarbon Contamination

4). Sulphur Deposition

5). Micro- and Macro-trash Deposition

6). Electronic Waste Degradation

1). On-Site Lead Contamination

Lead and other contaminants are known to be present at various levels at recreational target shooting areas, based on the intensity of usage. Lead is the predominant contaminant associated with most shooting areas, and will likely continue to be for the fore-seeable future, as the current California law regulating usage of alternative non-lead ammunition pertains to hunting but not target shooting.

2). Off-Site Lead Transport

Previous sampling methodologies were conducted on Bear and San Jose Creeks (CDM Federal Programs Corporation 1999 and Rincon Consultants, Inc. 2000b in USDA Forest Service 2015) as part of the analysis for the Winchester Canyon Gun Club (WCGC) shooting area. At WCGC, lead was known to transport off-site from the soil samples taken within the shot-fall zone and downstream along the tributaries to Bear and San Jose Creeks just outside the shot-fall zone (USDA Forest Service 2015). The transport distance was limited in extent, as lead levels above the background level are not detectable at another set of sample points located further down the Bear Creek drainage. However, the decay level for lead transport along this drainage was unknown, as a suitably rigorous sampling methodology has not been applied to these areas to address this concern.

Other water quality samples taken from Lake Cachuma have indicated that soluble lead levels also do not exceed the background level (USDA Forest Service 2015). In order for lead particulate (shot or bullet fragments) to dissolve into solution the lead would need to be exposed an acidic solvent. Surface water in the vicinity of the WCGC SUP area is typically alkaline in nature, with pHs that average around 8.5 (Kristie Klose 2015, personal communication). Lead is typically bound up in the A-horizon of the soil profile as the lead oxide that forms as a result of corrosion of elemental lead bonds onto soil particles (George 2019).

3). On-Site Polycyclic Aromatic Hydrocarbon Contamination

Polycyclic Aromatic Hydrocarbon (PAH) were known to be used as a binding agent in the previously used clay targets for trap and skeet shooting. These clay targets were phased out in 2001 in favor of a more ecologically-friendly target alternative. This alternative is reported to be composed of calcium-magnesium carbonate (70%), sulphur (29%) and an undisclosed binding agent (1%) (USDA Forest Service 2006 in USDA

Forest Service 2015). PAH is only likely to be present at sites where skeet shooting has been a long occurring activity, as it has been phased out in newer clay targets (USDA Forest Service 2015).

4). Sulphur Concentration

As previously mentioned, alternative "clay" targets contain sulphur as part of their chemical composition. At WCGC, previous soil and water sampling have not identified sulphur as a key contaminant for which to test. Many of the previous soil and water quality tests conducted at the site (CDM Federal Programs Corporation 1999 and Rincon Consultants, Inc. 2000b in USDA Forest Service 2015) were conducted prior to the transition over to non-PAH alternative targets. In order to determine whether sulphur deposition may be occurring as a result of the non-PAH targets further testing will need to be completed at sites with high levels of skeet and trap shooting that utilize the targets (USDA Forest Service 2015).

5). Micro- and Macro-trash Deposition

Due to negligence on the part of many recreational target shooters, micro- and macro-trash is known to accumulate at almost all target shooting sites. While some designated shooting areas are periodically cleaned up, the numerous unauthorized sites typically are not. This causes trash (glass, plastic, furniture, electronics etc.) to accrue at some of these sites to a level where the presence of trash becomes a potential threat to wildlife.

6). Electronic Waste Degradation

While related to the previous issue of trash, electronic waste, which is frequently associated with higher intensity use sites, has additional problems due to the materials associated with manufacturing electronic products. Electronic devices such as computers, printers, monitors, televisions and refrigerators are frequently brought to target shooting sites to use as targets and left on the landscape as litter after they have been used. The degradation of these devices releases a variety of toxic chemicals into the environment which may lead to wider spread soil and water contamination and have potential for impacting local wildlife. The hazardous chemicals associated with this degradation process is why electronic devices in most municipalities are required to be properly recycled at approved facilities.

5.3 Preliminary Impact Analysis

Table 4. Preliminary Impact Analysis. Showing federally-listed wildlife and botanical species on the Los Padres NF and their potential to be affected by incident activities.

Birds **Common Name** ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Actions*** **(Yes, No or Possible)**
California condor *Gymnogyps californianus*	Federally Endangered	K, LA, M, SB, SLO, V	Cliffs and ledges on exposed rock formations for breeding. Open country, coastal chaparral, forested mountaintops for roosting (seasonally), possibly redwoods.	Yes	< 1 km	Possible- Condors may periodically fly or roost near shooting areas and could interact with and be affected by target shooting actions.
California least tern *Sterna antillarum browni*	Federally Endangered	M, SLO	Beaches, lakes, bays. Forages over open water.	No	> 15 km	No- Closest population is at Morro Bay in San Luis Obispo County.
Least Bell's vireo *Vireo bellii pusillus*	Federally Endangered	LA, K, SB, SLO, V	Riparian woodlands typically along streams < 2800' asl.	Yes	> 5 km	No- There are no known populations or suitable habitats that occur near shooting areas on LPNF lands.
Marbled murrelet *Brachyramphus marmoratus*	Federally Threatened	M	Large trees in old growth or late-successional conifer groves within 35 miles of the ocean.	No	> 15 km	No- The only suitable habitat for the species occurs on the Monterey RD, well outside the area of effect of target shooting actions.
Southwestern willow flycatcher *Empidonax traillii traillii*	Federally Endangered	SB, V, K, LA	Riparian tree/shrub habitat	Possible	> 15 km	No- There are no historic records of the species breeding in proximity to where target shooting actions occur. The closest known population occurs on the lower Santa Ynez River, near Buellton, CA.
Western snowy plover *Charadrius alexandrinus nivosus*	Federally Threatened	M, SB	Sandy/gravelly coastal beaches, alkali lakes	No	< 15 km	No- The only suitable habitat for the species occurs on the Monterey RD at San Carpoforo Beach, well outside the incident's area of effect.
Yellow-billed cuckoo, Western DPS *Coccyzus americanus*	Federally Threatened	SB, SLO, V	Riparian tree/shrub habitat for nesting & migrants	No	> 15km	No- While there may be suitable riparian habitat within the incident area, there are no historic records of the species on LPNF lands.

Mammals **Common Name** ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Activities*** **(Yes, No or Possible)**
San Joaquin kit fox *Vulpes macrotis mutica*	Federally Endangered	K, SB, SLO	Barren grasslands and arid habitats with minimal shrub cover.	No	> 15 km	No- San Joaquin Valley arid ecosystem obligate species. No suitable habitat for the species occurs in proximity to known shooting area locations. The species is also not known to occur in any of these areas.
Southern sea otter *Enhydra lutris nereis*	Federally Threatened	M	Marine habitats	No	> 15 km	No- Marine mammal. Target shooting actions occurs inland from marine habitats where the species occurs.
Giant kangaroo rat *Dipodomys ingens*	Federally Endangered	K, SB, SLO	Barren grasslands and arid habitats with minimal shrub cover.	No	> 15 km	No- San Joaquin Valley arid ecosystem obligate species. No suitable habitat for the species occurs in proximity to known shooting area locations. The species is also not known to occur in any of these areas.
Stellar sea lion *Eumetopias jubatus*	Federally Threatened	M	Marine habitats	No	> 15 km	No- Marine mammal. Target shooting occurs inland from marine habitats where the species occurs.
Reptiles						
Blunt-nosed leopard lizard *Gambelia silus*	Federally Threatened	SLO, SB, V & K	Arid shrub in San Joaquin Valley and adjacent valleys.	No	≈7.5km	No- Blunt-nosed leopard lizard are a San Joaquin Valley arid ecosystem obligate species. No suitable habitat or known locations for the species occurs in proximity to known shooting area locations.

Amphibians **Common Name** ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Activities*** **(Yes, No or Possible)**
Arroyo toad *Bufo californicus*	Federally Endangered	LA, SB, SLO, V	Low gradient reaches of perennial streams with sandy banks which serve as developmental and estivation habitat.	No	≈2.3 km	No- Suitable habitat and historic observations occur outside of the estimated area of effect. The closest occupied suitable habitat occurs 2.3km to the NE of Ojai Gun Club near the Piedra Blanca trailhead.
California red-legged frog *Rana draytonii*	Federally Threatened	LA, M, SB, SLO, V	Perennial streams with deep pools with vegetative bank cover and emergent vegetation for breeding habitat. <5000 feet asl.	Yes	Extant	Yes- The species is known to occur within suitable habitat in proximity to known target shooting locations and could potentially be affected by target shooting actions. Populations on Manzana Creek, Pine Canyon Creek and Chicken Spring Creek occur in proximity to known shooting areas.
Invertebrates						
Conservancy fairy shrimp *Branchinecta conservation*	Federally Endangered	K, M, SLO	Larger moderately turbid, cool-water vernal pools.	No	> 15 km	No- Species is not known to occur inside the LPNF administrative boundary. Nearest population is on the Carrizo Plain National Monument in San Luis Obispo County.
Kern primrose sphinx moth	Federally Endangered	K, V	Barren grasslands and arid habitats with minimal shrub cover.	N	Possible	Possible- The species may exist in certain locations where target shooting is known to occur.
Smith's blue butterfly *Euphilotes enoptes smithi*	Federally Endangered	M	Coastal chaparral with buckwheat host plants	No	> 15 km	No- Known target shooting areas to not occur in proximity to where known suitable habitat for the species exists.
Vernal pool fairy shrimp *Branchinecta lynchi*	Federally Threatened	All	Ephemeral pools with temperatures between 43 °F (6 °C) and 68 °F (20 °C).	No	Extant	Possible- It is possible that target shooting may affect primary constituent elements of habitat at occupied suitable habitats and directly or indirectly impact the species.

Critical Habitat Species ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Area*** **(Yes, No or Possible)**
Arroyo toad *Bufo californicus*	Federally Endangered	LA, SB, SLO, V	Low gradient reaches of perennial streams with sandy banks which serve as developmental/estivation habitat.	No	≈ 1.3 km	No- The closest critical habitat for the species occurs along Sespe Creek to the north of Ojai Gun Club in Rose Valley.
California condor *Gymnogyps californianus*	Federally Endangered	LA, SB, SLO, V	Cliffs and ledges on exposed rock formations for breeding. Open country, coastal chaparral, forested mountaintops for roosting (seasonally), possibly redwoods.	No	< 100 m	Possible- Target shooting sites along Squaw Flat Road occur close to critical habitat for the species.
California red-legged frog *Rana draytonii*	Federally Threatened	LA, M, SB, SLO, V	Perennial streams with deep pools with vegetative bank cover and emergent vegetation for breeding habitat. <1500 m asl.	Yes	Extant	Yes- Designated critical habitat for the species overlaps with where certain target shooting locations occur. Consequences of target shooting actions may impact primary constituent elements of habitat present in critical habitat.
Least Bell's vireo *Vireo bellii pusillus*	Federally Endangered	LA, K, SB, SLO, V	Riparian woodlands typically along streams < 2800' asl.	Possible	> 15 km	No- No critical habitat for the species exists within the area impacted by target shooting activities.
Southwestern willow flycatcher *Empidonax traillii traillii*	Federally Endangered	SB, V, K, LA	Riparian tree/shrub habitat	Possible	> 10 km	No- No critical habitat exists within proximity to the incident area.
Vernal pool fairy shrimp *Branchinecta lynchi*	Federally Threatened	All	Ephemeral pools with temperatures between 43 °F (6 °C) and 68 °F (20 °C).	No	Extant	Possible- Critical habitat for the species overlaps with areas where target shooting occurs and primary constituent elements of habitat may be impacted.

Plants **Common Name** ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Activities*** **(Yes, No or Possible)**
Camotta Canyon amole *Chlorogalum purpureum* var. *reductum*	Federally Threatened	SLO	Grassland, oak woodland, and oak savannah on well-drained red clay soils with substantial amounts of pebbles and gravels and a high (8:1) calcium-magnesium ratio.	P		Possible - The species is known to occur in an area along Red Hill Road on the SLRD where target shooting (skeet shooting) occurs.
Chorro Canyon bog thistle *Cirsium fontinale* var. *obispoense*	Federally Endangered	V	Perennial seeps and springs in serpentine soil and rock.	N	> 10 km	No - The species is not known to occur in proximity to where any target shooting may occur.
Kern mallow *Eremalche kernensis*	Federally Endangered	K, V, SB	Above 914 meters (3,000 ft), occurs in juniper woodland, on gravel and shale substrates	P		Possible – Species has been documented to be within 5 km of a target shooting site in similar habitat in Dry Canyon on the MPRD.
Southern mountain buckwheat *Eriogonum kennedyi* var. *austromontanum*	Federally Threatened	V	Pebble plains treeless openings within surrounding montane pinyon-juniper woodland or coniferous forest with clay soils covered with quartzite pebbles.	P		Possible – The species is located within 2 km of documented target shooting site in similar habitat on the MPRD.
Critical Habitat Species ***Scientific Name***	**Status**	**Location**	**Suitable Habitat**	**Occurs in Incident Area (Y/N/P)**	**Distance to Incident Area**	***Affected by Incident Area*** ***(Yes, No or Possible)***
Camotta Canyon amole *Chlorogalum purpureum* var. *reductum*	Federally Threatened	SLO	Grassland, oak woodland, and oak savannah on well-drained red clay soils with substantial amounts of pebbles and gravels and a high (8:1) calcium-magnesium ratio.	P		Possible – There are 3 know target shooting sites located in critical habitat on the Los Padres National Forest. Two of those sited are in unoccupied habitat not suitable for the species.

1/ Status: As listed in 50 CFR 17.11 & 17.12; State of California, The Resources Agency, Department of Fish and Game-list, dated September 1994; Federal Register Updates as published; plus updates from US Fish and Wildlife Service, Ventura Office every 90 days.

2/ K = Kern Co. LA = Los Angeles Co. M = Monterey Co. SB = Santa Barbara Co. SLO = San Luis Obispo Co. V = Ventura Co. MPRD = Mt. Pinos Ranger District SLRD = Santa Lucia Ranger District, LPNF = Los Padres National Forest

6.0 Secondary Effects Analysis- Species Accounts

6.1 *Federally-Listed Wildlife Species*

6.1.1 California condor and designated Critical Habitat

California condor (*Gymnogyps californianus*)

The California condor is the largest terrestrial bird in North America, and is 1 of 3 members of the Cathartidae family found on the continent. They are extremely large, having long, broad wings with wingspans of up to 9 ½ feet (290cm). Adult birds often weigh up to 23 lbs. (10.5 kg) (Sibley 2000). Adults have black plumage on the body and wings with a white lower wing lining. Juveniles are charcoal gray over the entire body, with dingy gray lower wing linings that whiten as the bird matures. The head and neck on both adults and juveniles is devoid of feathers. On adults the skin ranges from orange to orangish-pink, while on juveniles the skin is gray. In flight, the 7th-10th primaries in the wings are widely splayed to take advantage of minute variations in updrafts while soaring.

Occurrence:

As of the end of 2017, there were 290 condors living in the wild in California, Arizona and Baja California, Mexico (USDI Fish and Wildlife Service 2017). Both the wild and captive populations of California condors have continued to increase modestly through considerable management actions. The southern California population remained unchanged at 80 wild birds, while the central California population increased from 86 to 90 wild birds from previous 2016 numbers.

During the summer of 2008, the USFWS moved the condor feeding and release operation from Hopper Mountain to Bitter Creek Wildlife Refuge about 25 miles east of the incident area, and by the fall of 2008, almost half of the condors in California, except the Big Sur and Pinnacles birds, were in this vicinity. It appears likely that this area will be the center of activity for these condors during spring, summer, and fall for the foreseeable future. In winter the condors tend to move to the warmer Hopper Mountain refuge, which is adjacent to ORD. However, condors are very mobile and regularly visit other portions of LPNF on the Ojai, Mt. Pinos (MPRD), Santa Lucia (SLRD) and Monterey (MRD) ranger districts.

On the Los Padres NF there are 2 distinctive subgroups of the population that breed and forage within 3 activity polygons on different parts of the forest. One group utilizes habitats on the southeastern portion of the forest; nesting primarily in Hopper Mountain National Wildlife Refuge (NWR) and adjacent lands in the Sespe Wilderness and a few other areas of Los Padres NF. They forage within a large triangular polygon that covers a matrix of federal (BLM, NPS, USFS and USFWS), state and private lands, and have been observed as far away as Sequoia NF to the northeast. This subset of the population interacts periodically with another group of birds that forage within a 2nd activity polygon centered on Bitter Creek NWR, just north of the SLRD of LPNF. The other distinctive subset of the population nests and forages primarily within the Ventana Wilderness on the MRD of LPNF. These birds use a 3rd activity polygon, and focus foraging activities primarily along the Big Sur coast of central California where they forage off dead marine mammals.

California condors are monitored on a regular basis by a number of groups, including the USFWS at Hopper Mountain and Bitter Creek, the Ventana Wildlife Society (VWS) along the Big Sur coast, the National Park Service in conjunction with VWS at Pinnacles National Monument, as well as Cal Poly interns and volunteers at the Hi Mountain Lookout.

Over the past 13 years, since the current FLMP was finalized, the southern California and central coast condor populations have grown and continued to expand their range into historically inhabited areas on LPNF. The first successful nesting attempt since reintroduction in Santa Barbara County occurred during 2018 in the upper portion of the Sisquoc River watershed near the Sisquoc Condor Sanctuary. It is projected that condors will continue to expand on LPNF lands into western Santa Barbara and San Luis Obispo Counties in the near future.

Currently there are 10 designated critical habitat units for California condors (Federal Register 1977). Six (6) of the 10 units occur on LPNF managed lands on the Ojai, Mt. Pinos, Santa Barbara and Santa Lucia RD. Critical habitat is intended to include sufficient nesting, roosting and foraging habitats to sustain populations of condors. Several of these areas of critical habitat overlap with the 2 condor sanctuaries which occur on LPNF managed lands, the Sespe and Sisquoc Condor Sanctuaries. Both of these areas were set aside in the 1950's, prior to the condor being federally listed.

Habitat: Conventional nesting and roosting sites include cavities or ledges on cliffs, as well as large trees such as big-cone Douglas fir and ponderosa pine. Condors will also utilize snags for roosting and nesting. Nesting also occurs in caves and ledges on large, steep cliffs.

Condors have established nesting locations on four of the five ranger districts on LPNF (MRD, MPRD, ORD and SLRD). They are also regularly observed at specific roosting and foraging locations on these districts.

Threats:

General Threats:

Lead ingestion. Loss of nesting and foraging habitat due to human development. Eggshell thinning due to continued exposure to DDE (breakdown component of DDT). Ingestion of micro-trash. Habitat-use conflicts with human infrastructure; including inhabitations, oilfields, power transmission lines and wind-energy generation farms.

Factors that led to California condor's century-long decline include: illegal collection of adults and their eggs; poisoning by substances used to eradicate livestock predators; poisoning from ingestion of lead fragments of bullets embedded in animal carcasses; other forms of poisoning (DDT, cyanide, strychnine, compound 1080, antifreeze from car radiators); shooting; and collisions with structures such as electrical transmission lines. In addition, the roads, cities, housing tracts, and weekend mountain retreats of modern civilization have replaced much of the

open country condors historically used as foraging habitat. Their slow rate of reproduction and maturation undoubtedly make the California condor population as a whole more vulnerable to these threats (Stephenson and Calcarone 1999, U.S. Fish and Wildlife Service 2001).

Incident Specific Threats:
Micro-trash resulting from debris left on shooting areas. Noise disturbance. There is a minor risk of lead exposure if condors should ingest spent ammunition casings or micro-trash associated with target shooting sites. Condors could potentially be shot either intentionally or unintentionally if they are flying over target shooting sites.

Direct Effects:
Condor Analysis Constraints:
"Roosting condors" were defined as birds moving at less than 2.0 miles per hour. This approach eliminated a large amount of noise in the data where condors are passing over an area, but frequently flying hundreds or thousands of feet above ground level, and not likely to be impacted by actions occurring at the target shooting sites. This analysis strategy differed from an approach previously used by LPFW to analyze condor data by including all data points with a ground speed value < 10.0 mph. As condors are soaring birds which utilize thermal updrafts, they are circling frequently during flight, resulting in ground speeds which frequently register below 10 mph, even though the birds are not actually stationary.

Multiple data sets from 2016-2018 (USGS Science Base 2019) were used to provide adequate data points to isolate locations within the analysis area that are repeatedly visited and utilized as transient or long-term roosting sites. Data was limited to more recent years, as the data sets are extremely large and sufficiently robust enough to allow adequate sample size for purposes of spatial analysis for this assessment. Roosting behavior in proximity to target shooting areas was used as the basis for assessing potential risk associated with target shooting actions.

Given the large size of condor GPS telemetry datasets, there were relatively few locations where condors are known to roost which were within proximity of known target shooting locations. One such location occurred near Brush Mountain on MPRD (Figure 7) where condors utilized a transient roost within the Site buffer (400m buffer) to the shooting area while passing through. There was no indication in the data that the birds re-visited the location. Several sites on the Ojai RD along Squaw Flat Road (Figure 8) also showed usage of transient roost locations within the local buffer, but data didn't indicate that birds visited the actual site. There were other locations on the MRD and MPRD that showed that birds temporarily roosted within the 1.5km buffer of shooting areas, but did not visit the site location.

Currently there is no known linkage between micro-trash picked up by condors and an association with target shooting sites (J. Brandt and S. Kirkland, personal communication, 2018).

Analysis of GPS telemetry data supports this, as condors appear to spend very little time in proximity to target shooting areas. Of the hundreds of thousands of data points for roosting birds which were analyzed, there were only a few where condors roosted < 1.5km from a known target shooting location. No pattern of re-visitation was observed. While condors could feasibly be impacted through direct interaction with target shooting areas, it was currently considered unlikely. Currently there are no condor nesting locations in proximity to known target shooting locations, so direct effects related to noise disturbance were not considered to have any impact.

Within the foreseeable future it is predictable that condors will continue to expand within their range and reoccupy currently unutilized portions of their historic range. This expansion could potentially result in condors interacting with shooting areas on SLRD which they don't currently visit. However, based on the data, condors are not more likely to revisit target shooting sites, and further expansion of their range is not predicted to alter current behavioral patterns.

Indirect Effects:
Indirectly condors may be affected by the noise disturbance associated with target shooting areas, which potentially causes them to avoid areas of potential roosting and foraging habitat while target shooting sites are in use. This disturbance may alter condor behavior somewhat, but is not expected to have a measurable impact, as condors have abundant roosting and foraging habitat throughout their range on LPNF managed lands.

Target shooting may also indirectly impact the species by degrading the quality of suitable or critical habitat due to the accrual of micro- or meta-trash that can be associated with target shooting sites. Habitat may also be degraded due to the presence of toxic chemical compounds that can be associated with electronic waste on high intensity use sites. However, while there is potential risk for the species to be impacted indirectly by target shooting activities, there is currently no known nexus in the data or research released by USFWS Condor Recovery team connecting impacts to condors and recreational target shooting.

The Central Coast and Southern California condor populations are monitored extensively regarding both behavior and physiology to assess individual health and fitness, and to identify potential problems. As previously discussed, while lead toxicity is a known issue with the species, monitoring of behavior has indicated that exposure results primarily through condors scavenging on contaminated food sources (J. Brandt and S. Kirkland, personal communication 2018).

6.1.2 California red-legged frog and designated Critical Habitat

California red-legged frog is a large frog belonging to the *Rana* genus. They are gray, olive, tan or dark brown dorsally, with moderately large dark spots across the back. Ventrally they are whitish, with dark areas in the thoracic region, and whitish, with a distinctive reddish pigmentation, on the body and legs

from the pelvic region down. Frogs are 1.75-5.25" (4.45-13.34 cm) in length (snout to vent) (Nafis 2000-2018).

Habitat:
California red-legged frogs (CRLF) inhabit a variety of aquatic habitats, such as streams, ponds, backwaters, marshes, stock ponds and springs from sea level to approximately 1500m (USDI Fish and Wildlife Service 2002). They prefer aquatic habitats that retain sufficient water (>20cm) through July in order to support tadpole metamorphosis. Preferred aquatic habitats generally have overhanging vegetation or emergent vegetation along the banks which provides the frogs with shade (moisture retention) and escape cover. Emergent vegetation is also an important component because it serves as an anchor for deposited egg masses.

Occurrence:
On LPNF, occupied suitable habitats for California red-legged frogs occurs on the Monterey, Santa Lucia, Santa Barbara and Ojai Ranger Districts (RD) (NRIS Aquatics Database 2018, NRIS Wildlife Database 2018). The species occurs in several coastal creeks on the Monterey RD (Figure 2). On the Ojai RD (ORD), the species is known to occur in a few locations, primarily on the western side of the district, including North Fork of Matilija Creek, Murietta Canyon Creek and Matilija Creek (Figure 4). CRLF historically occurred on ORD as far east as Piru Creek, but haven't been observed there since 1983, likely due to the prevalence of aquatic invasive species such as largemouth bass and bullfrogs (Sweet 1993). On the Santa Barbara RD (Figure 5) it occurs at numerous locations along the Santa Ynez River (SYR) from the forest boundary just east of Lake Cachuma to Jameson Lake at the headwaters of the river, and other locations such as Agua Caliente, Mono and Indian Creeks. On the Santa Lucia RD (SLRD) the species occurs within several of the major watersheds, including the Sisquoc River, North Fork LaBrea Creek and Manzana Creek; as well as numerous smaller populations on smaller creek systems across Santa Lucia RD (Figure 6). In addition to the riparian habitats along creeks and the rivers, frogs also make use of upland areas during dispersal, and when utilizing habitats for refugia.

Critical habitat for the species (Figures 2 and 4-6) exists throughout LPNF managed lands on 4 of the 5 ranger districts.

<u>Threats</u>
General Threats:
Habitat loss due to sediment deposition, habitat degradation, conflicts with recreational usage of breeding habitats, vehicular traffic on low-water crossings. Urban development across most of the species' range has resulted in extensive loss and degradation of much of the previous habitat. Water management practices (construction and management of reservoirs, canals and aqueducts) throughout the species' range have caused additional extensive habitat loss and degradation. Competition with invasive species such as American bullfrog and red swamp crayfish limits the species reproductive capacity and eventual displaces the species from portions of its range.

Incident-specific Threats:
Activities related to target shooting could result in juvenile, sub-adult and adult frogs being shot or trampled. Any direct impacts to the species are highly likely to be fatal. Indirect impacts to the species

through degradation of suitable and critical habitat may result due to damaged vegetation and soil/water contamination resulting from by-products of target shooting activities.

Direct effects:
Target shooting actions may result in the direct injury or mortality of CRLF sub-adults or adults if they are present in areas where target shooting occurs. Special status wildlife were known to have been previously intentionally or accidentally killed at target shooting areas (LPNF Herpetological monitoring records 2000, 2001).

There is direct overlap with target shooting activities and known CRLF populations on Manzana Creek, Pine Canyon Creek and Chicken Spring Creek. While target shooting has been allowed to occur at Chicken Spring, target shooting at Nira Campground (CG), Brookshire CG, Horseshoe Springs CG and near the Lower Sunset Valley Road crossing are all unauthorized (Figures 9-11) and violations of 36 CFR Part 261 Subpart A (Table 2).

At both Manzana Creek sites, Horseshoe Spring CG, Brookshire CG and at Chicken Spring it is considered feasible that CRLF juveniles, sub-adults and adults may be injured or killed by target shooting activities. There are currently no mitigation measures proposed which would keep individuals from entering unauthorized shooting areas and being shot either voluntarily or involuntarily. As usage of these sites is already considered unauthorized, and punishable by fines (36 CFR Part 261 Subpart A), risks to CRLF are difficult to mitigate.

Indirect effects:
Environmental degradation is known to occur through the accumulation of micro- and macro-trash associated with target shooting activities. The accumulation of foreign materials may degrade PCEs of habitat and impair the ability of the species to use the habitat effectively. The presence of electronic waste, associated with higher intensity sites, such as Chicken Springs (Figure 9), may result in local soil and water contamination which may have detrimental impacts on amphibians occurring in proximity to the source of the contamination.

Wildfires can be an indirect consequence of target shooting activities, and have resulted from target shooting activities in the past. Wildfires may kill CRLF directly due to burned over aquatic habitats, or indirectly due to post-fire effects from debris flows (2017-18 Thomas Fire) or sedimentation events (2007 Zaca Fire and 2009 La Brea Fire) which kill or injure frogs, or degrade habitat to a degree where it can no longer be used effectively. Wildfires on LPNF are a regular occurrence, and ≈ 95% are related to anthropogenic ignition sources, a category which includes target shooting, arson, off-road vehicle traffic and vegetation maintenance. Wildfires are considered a feasible risk to CRLF, and factors which elevate the risk level of wildfires deserve further consideration for mitigation to help alleviate that risk.

6.1.3 Kern Primrose sphinx moth

The Kern primrose sphinx moth (KPSM) is 1 of 3 species of the genus *Euproserpinus,* which are members of the Sphingidae family. Adults are distinguished by a broad contrasting white band on the abdomen and the convex costal margins of the hindwing and forewing. White scaling is also present on the dorsal surface of the antenna (Jump et. al. 2006).

Specific characteristics related to emergence and habitat use are still not well known, and are being studied by local entomologists. Typical KPSM flight periods range from late February to early April (Jump et. al. 2006, USDI Fish and Wildlife Service 2007), but KPSM adults may delay emergence due to climatic conditions such as drought (Peter Jump 2013, personal communication).

Habitat:

KPSM inhabits arid barren habitats and grasslands typically associated with the San Joaquin Valley ecological community. Following emergence, larva utilize several species of the genus *Camissonia* (primrose and suncup species) as host plants (USDI- Fish and Wildlife Service 2007).

Occurrence:

There are only a few known locations (NRIS Wildlife Database 2018) where the species has previously occurred on LPNF lands in the vicinity of Cuyama Valley, Deer Park and Ballinger Canyons (Figure 8). There are other known locations outside the LPNF boundary. Another population exists at Walker Basin in the San Joaquin Valley of California (Jump et. al. 2006).

Threats

General Threats:

The greatest threats to the species result from agricultural and land development practices that have been implemented in parts of the Walker Basin and in the vicinity of the Carrizo Plain. Almond and pistachio orchards have consumed large portions of previously suitable habitat in the San Joaquin Valley. Similar development has also impacted a great extent of Cuyama Valley, which includes or is adjacent to LPNF managed lands (USDI Fish and Wildlife Service 2007).

Incident-specific Threats:

Off-road vehicle traffic associated with target shooting may result in injury or mortality to KPSM during emergence and development if target shooting is occurring in areas of occupied habitat. Disturbance and environmental degradation can be associated with higher intensity target shooting sites. High intensity use of sites could also result in soil compaction, repeated noise disturbance, accumulation of garbage, damage to vegetation and soil contamination.

Soil contamination associated with lead from ammunition, other heavy metals or toxins associated with electronic waste (frequently used as targets at shooting areas), and petro

chemicals associated with skeet shooting targets may indirectly affect the species by impacting the host plants that the species utilizes.

Direct Effects:
There was no overlap between known KPSM emergence areas and locations where target shooting is known to occur. While the analysis completed by LPNF may not include all existing target shooting locations, there was no indication in the available data that the species would be directly impacted by target shooting activities.

Indirect Effects:
Dry Canyon (a former military small arms and artillery range) on Mt. Pinos RD is within the proximity of the range of distribution for KPSM, but the species has never been known to occur in that area. Due to high intensity usage from 1941-45, Dry Canyon is known to have soil contamination associated with elevated levels of lead and other chemical compounds associated with military-grade munitions. However, due to the arid environment, there has been no indication of off-site transport of these chemical compounds potentially indirectly impacting the species.

Vernal pool fairy shrimp
The vernal pool fairy shrimp (VPFS) is found throughout the Central Valley of California to Shasta County in the north and the central Coast Ranges in the west. Additional populations in the Agate Desert region of Oregon near Medford have been reported (USDI Fish and Wildlife Service 2015). Disjunct populations have also been reported in San Luis Obispo, Santa Barbara, and Riverside counties. Most known locations are in the Sacramento and San Joaquin Valleys and along the eastern margin of the central Coast Ranges (USDA Forest Service 2005a).

Habitat:
VPFS inhabit rain-filled, ephemeral pools (i.e., vernal pools) that form in depressions, usually in grassland habitats (USDI Fish and Wildlife Service 2015). Pools must fill frequently enough and persist long enough for the species to complete its life cycle, which is completed entirely within vernal pools. Pools occupied by VPFS often have grass or mud bottoms and clear to tea-colored water and are often in basalt flow depression pools in unplowed grasslands. Water chemistry, including alkalinity, total dissolved solids, and pH, is one of the most important factors in determining the distribution of fairy shrimp (USDA Forest Service 2005a).

VPFS inhabit alkaline pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal pools, vernal swales, and other seasonal wetlands. Occupied habitats range in size from rock outcrop pools as small as 1 square yard (0.8 square meter) to large vernal pools up to 11 acres (4.5 hectares); the potential ponding depth of occupied habitat ranges from 1.2 to 48 inches (3 to 122 centimeters) (Eng et. al. 1990, USDA Forest Service 2005a).

Occurrence:
VPFS have recently been rediscovered at one location on the MPRD of the LPNF in Ventura County. Another record on the LPNF existed approximately 5 miles (8 km) southeast of this site; it was last verified in 1989 but is presumed still extant. Several small potreros in the mountains north of Santa Barbara on the LPNF are likely to be occupied (USDA- Forest Service 2005a). The USDA Forest Service has assumed 751 acres (304 hectares) of occupied habitat in consultations with the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 2001 from USDA- Forest Service 2005a).

Threats

General Threats:
Loss of habitat due to urban development. Winery development on the Central California coast in Santa Barbara and San Luis Obispo Counties has resulted in depreciated surface water. Off-highway vehicle traffic through vernal pool areas. Global climate change is projected to result in more frequent, severe droughts in the southwestern US, which would like result in alteration of environmental conditions conducive to providing habitat for the species.

Incident-specific Threats:
Off-road vehicle traffic associated with target shooting. Soil disturbance. Soil and water contamination related to leachate resulting from electronic waste, or petro chemicals associated with skeet shooting areas.

Direct Effects:
Alteration of potential suitable habitat due to soil compaction and damage to vegetation around target shooting locations. Two pools which previously existed at Chicken Springs Shooting Area (Figure 9) were known to have been altered by SBRD district staff using heavy equipment around 2001-2002. This action pre-dated the current FLMP, and Standard 36 to which this lawsuit is related. At that time, informal (non-protocol) surveys were completed by LPNF aquatic monitoring crews, but no VPFS were found in any of the pools at Chicken Spring (Valerie Hubbartt, personal communication 2019). Vernal pool fairy shrimp were documented to the northeast of Chicken Springs shooting area.

Critical habitat for the species may be impacted through soil compaction caused by off-highway vehicle traffic sometimes associated with recreational target shooting sites. Soil compaction can damage and impair vernal pool habitats that are vital for providing habitat for the species.

Indirect Effects:
Soil or water contamination may occur as a result of excessive levels of lead or heavy metals in the soil, resulting from leachate from electronic waste typically associated with high intensity shooting areas. Contamination could detrimentally impact both the species and their critical habitat.

There has been little soil or water contamination testing conducted related to the impacts of recreational target shooting on LPNF due to the lack of resources to complete it. The one exception is Winchester Canyon Gun Club, one of the permitted shooting areas operated under a SUP, where some lead-related soil and water contaminant testing has been previously completed (USDA Forest Service 2015).

Hydrological analysis (George 2019) related to recreational target shooting on LPNF indicated that under most circumstances on LPNF lands lead contamination is not an issue, as less corrosion of elemental lead occurs due to low humidity and above-average pH present in most local streams that makes lead less soluble. As a result, most elemental lead is bound up in the A-horizon of the soil profile, and is primarily transported through soil erosion events.
Other potential sources of soil and water contamination resulting from target shooting residues and e-waste are known to be potential sources of impact, but cannot be accurately assessed due to a lack of related research and relevant soil/water sampling to address this issue.

6.2 *Wildlife Cumulative Effects Analysis*

Cumulative effects integrated impacts to all species considered in secondary effects analysis. There are many commonalities in how other tangential activities impact federally-listed species. The potential cumulative impacts of a wide array of actions were addressed in extensive detail in the FLMP (USDA Forest Service 2005a), in ESA consultation documents (USDA Forest Service 2012b) and in the current programmatic biological opinions issued by US Fish and Wildlife Service (USDI Fish and Wildlife Service 2013a, 2013b, 2013c). Therefore, further analysis of cumulative effects related to these same issues tiers off work already completed (USDA-Forest Service 2005a and 2012).

This biological assessment will address specific activities which are directly/indirectly linked with target shooting

Site: The site footprint scale incorporated actions which occurred within 400 meters of the center point of the site. Noted actions incorporated into the analysis included:

- Recreational activities (Hiking, OHV use, camping, bird watching)
- Transportation system
- Biological surveys

Local: The local scale incorporated actions which occurred within 1 kilometer of the center point of the site. Noted actions incorporated into the analysis included:

- Illegal marijuana cultivation
- Wildfires
- Recreation activities (Bicycling, hunting)
- Biological surveys
- Transportation

- OHV use
- Grazing
- Fuels treatments

While various permitted activities have already been evaluated under previous Section 7 consultation documents (USDI- Fish and Wildlife Service 2013a, 2013b) the cumulative effects of illegal marijuana cultivation, wildfires and recreational target shooting were not assessed in previous analysis due to their unpredictable occurrence, or illegality behind the activity.

Wildfires have been known to result from unauthorized recreational target shooting and may indirectly affect species by causing mortality or altering suitable or critical habitat significantly to impair effective habitat use.

The wide-spread nature of recreational target shooting, when considered with other sources of impact, may exacerbate already deteriorated habitat conditions resulting from drought, post-fire effects and other permitted recreational activities or mission essential agency actions.

6.3 *Federally-Listed Plant Species*

6.3.1 *Chlorogalum purpureum* var. *reductum* (Camatta Canyon amole)

Background:
Camatta Canyon amole (Chlorogalum purpureum var. reductum) is a rare soap plant in the family, Agavaceae. This species was listed as a threatened by the U.S. Fish and Wildlife Service on March 20, 2000 (65 FR 14878). In addition, 4,770 (4,378 by our calculation) acres of critical habitat for the species were designated by USFWS on October .4. 2002 (67 FR 65414) USFWS stated that "It is threatened by illegal vehicle trespass into the population on Forest Service land, road maintenance, displacement by nonnative, annual grasses, and by livestock grazing depending upon the intensity of grazing use within the population area."

Consultation to Date:

- 1996 Original Biological Evaluation/Assessment written by the Forest for the Navajo allotment. The determination for the then Forest Service Region 5 sensitive amole was "may affect individuals but not likely to result in a trend toward federal listing."
- 1998 Camatta Canyon amole is proposed as Federally Threatened. The Forest appends the Navajo Biological Evaluation/Assessment to update determination for amole to may affect not likely to adversely affect, and asks USFWS for concurrence. USFWS requests that the Forest continue monitoring.
- 2002 Camatta Canyon amole is federally listed as threatened.
- 2002 Camatta Canyon amole is included in the Province Consultation Biological Opinion related to the 2005 Los Padres Forest Management Plan. The BO included the following conservation measures for Camatta Canyon amole:

- The Forest Service should investigate the possibility of acquiring fee title to or a conservation easement for the parcel on the other side of the road that supports this occurrence of the CCA.
- The Forest Service should monitor the condition of the welded pipe barrier fence and any barbed wire fence that protects the population from stray vehicles on a monthly basis and maintain reports of any damage and trespass. Breeches in the fences should be repaired promptly.
- The Forest Service should remove cattle from areas inhabited by the CCA.
- The Forest Service should map and monitor distribution of the CCA.
- The Forest Service should remove the staging area for OHVs that occurs just beyond the welded pipe barrier. The Forest Service should map and assess the condition of the occurrences of the CCA located outside the fences.
- The Forest Service should survey for this species before any additional OHV trails, roads, structures, or other facilities are located in the area.
- The Forest Service should analyze transect data it has collected to determine whether the data can provide insight into the population dynamics, reproduction, dormancy, seedling establishment, and other ecological aspects of the CCA.
- If land supporting the entire occurrence of the CCA can be acquired, the Forest Service should relocate the road to avoid habitat of the species. If the road can be relocated, the Forest Service should investigate whether the existing road surface can be restored.

- 2008 The Forest re-issued the term grazing permit for the Navajo allotment..
- 2010 Forest biologists meet with USFWS on the Navajo allotment and discuss a strategy for monitoring to be implemented in 2011.
- 2011 The Forest is preparing a long term monitoring plan and has arranged to collect plant data and meet with Connie Rutherford from USFWS on the allotment during the May blooming season for the Camatta Canyon amole, and is re-initiating consultation.
- 2015 Biological Opinion issued for ongoing activities consultation related to critical and occupied habitat. The BO included the following conservation measures for Camatta Canyon amole:
  - Ensure equipment operators and contracting officer's representatives avoid further widening and deepening of Forest Road 29515.
  - Ensure that equipment operators thoroughly wash, with water, any equipment used in road maintenance to reduce the risk of introducing nonnative plants and plant seed.
  - The biological assessment (USFS 2012) also contains a recommendation that to prevent further widening of Forest Road 29S15 carsonite signs be installed along the perimeter of the road delineating the intended narrower width. While listed as recommendation in the biological assessment (USFS 2012), we expect this measure will be implemented as it is supported by the District Ranger.

The U.S. Fish and Wildlife Service made the following recommendations in their 2015 BO:

1. We recommend that the USFS continue to implement a management plan for Camatta Canyon amole on the Los Padres National Forest, including surveys and a revised monitoring program.
2. We recommend that the USFS conduct research into designing a methodology for restoring cryptogamic crusts, and employ those methodologies to enhance and conserve Camatta Canyon amole on the LPNF.

The U.S. Fish and Wildlife Service made the following recommendations in their 2008 Five-year Review of the Camatta Canyon amole:

1. We recommend that the U.S. Forest Service prepare and implement a management plan for the Camatta Canyon amole on the Los Padres National Forest, including surveys and a monitoring program.
2. We recommend that the U.S. Forest Service implement measures to prevent trespass by vehicles, in particular motorcycles, into the Camatta Canyon amole area and designated critical habitat on the Los Padres National Forest. We recommend that the effectiveness of any implemented measures be monitored and then adaptive management actions taken.
3. We recommend that the U.S. Forest Service consult with the Service regarding its activities that may affect the Camatta Canyon amole and its designated critical habitat on the Los Padres National Forest, in particular cattle grazing.
4. We recommend that the U.S. Forest Service conduct research to determine the effects of gophers and feral pigs on the Camatta Canyon amole, and the relationship between the Camatta Canyon amole and cryptogamic crusts.
5. We recommend that the California Department of Transportation conduct surveys to determine the distribution of the Camatta Canyon amole along State Highway 58 (and adjacent private properties if possible) and submit a report of the survey results to the Service.

Habitat:

Chlorogalum purpureum var. *reductum* occurs in grassland, oak woodland, and oak savannah at elevations of 1,000-2,050 feet (305-625 meters) in the South Coast Ranges. Like other members of the century plant family, *C. p.* var. *reductum* probably develops root-hyphae relationships with a fungus. These mycorrhizal relationships can aid in nutrient and water uptake by the host plant and can alter growth and competitive interactions between species (U.S. Fish and Wildlife Service 2000).

At both known locations of *Chlorogalum purpureum* var. *reductum*, the plants grow in variously sized patches and are not uniformly distributed throughout the habitat, which is described as sparsely vegetated annual grasslands surrounded by blue oak (Quercus douglasii) woodland and

gray/foothill pines (*Pinus sabiniana*). Other native species found in the area include *Brodiaea coronaria, Clarkia purpurea, Crassula erecta, Dichelostemma capitatum*, and *Calycadenia villosa*, another sensitive species (USDA Forest Service 2000).

Chlorogalum purpureum var. *reductum* grows on well-drained red clay soils with substantial amounts of pebbles and gravels and a high (8:1) calcium-magnesium ratio (Lopez 1992). Despite reports to the contrary (Jernstedt, J. 1993, 2002, 2012), the substrate in this area is not serpentine (Lopez 1992). The taxon appears to be restricted to areas with rocky, nutrient-poor soils that tend to prevent herbivory by pocket gophers. In areas with better soils, nonnative annuals (e.g., *Bromus madritensis* ssp. *rubens, Erodium* spp., *Schismus barbatus, Avena barbata*) appear to be out competing *Chlorogalum purpureum* var. *reductum* for space, light, nutrients, and water (U.S. Fish and Wildlife Service 2000).

Occurrence:
Chlorogalum purpureum var. *reductum* is known from only two occurrences (California Native Plant Society 2001). Population trends are fluctuating. The number of plants in the larger occurrence varied substantially (between 56 and 500,000 plants) based on observations between 1982 and 1991 (California Natural Diversity Database 2004).

Threats
General Threats:
Forest Road 29S15, the graded dirt road that bisects the large population on public land, leads to private inholdings and residences within the Los Padres National Forest. This road is bounded on either side by a pipe barrier that was installed in about 1990 to prevent OHVs from using the site. A removable portion of the barrier and a barbed-wire section of fence have been routinely breached by OHVs. Such illegal use was noted to be increasing from 1995 through 1997 (U.S. Fish and Wildlife Service 2001). In 1998, after publication of the proposed rule to list the species (U.S. Fish and Wildlife Service 1998), the broken section of barbed wire fence was replaced with a single-post barrier, and sections of broken pipe barrier elsewhere were re-welded. Stephenson and Calcarone (1999) reported that despite being partially fenced, the area was still being used as an informal staging area for OHVs and cattle. However, monitoring of habitat in 2002, 2003, 2004, showed that the welded pipe barrier has proven to be an effective deterrent to unauthorized use of *C. purpureum* var. *reductum* habitat by OHV's. On average, only one trespass per year has been noted, and these events have resulted in only minor damage to plants and habitat. Monitoring of habitat from 2002- 2004 has also shown that livestock use of occupied habitat has either not occurred (2002) or in 2003- 2005 was very minimal (USDA Forest Service 2005a).

Maintenance grading of Forest Road 29S15, which is about 33 feet (10 meters) wide, is directly affecting *Chlorogalum purpureum* var. *reductum*. In recent years, grading has increased the width of the road by about 5-10 feet (1.5-3.0 meters), resulting in the loss of additional plants

and habitat. The road may indirectly affect *Chlorogalum purpureum* var. *reductum* habitat by altering local hydrologic function. Equipment used in the maintenance of this road can carry propagules of nonnative plants, potentially leading to the unintentional introduction of nonnative undesirable plant species. However, nonnative plants that are tolerant of the dry soils (e.g., *Bromus* sp. and *Erodium* sp.) are already present on site and have been a part of the annual grassland flora for more than 100 years. Other nonnative plant species, such as *Centaurea solstitialis*, have not been able to persist on site, and the risk of introducing seed from other nonnative species is low (USDI Fish and Wildlife Service 2001).

A few plants extend into the California Department of Transportation (Caltrans) right-of-way along the highway. Caltrans has designated both sides of the right-of-way in this area as Botanical Management Areas.

One cattle-grazing allotment overlaps the area occupied by the *Chlorogalum purpureum* var. *reductum*; livestock grazing occurs February-May. Livestock can trample and eat the aboveground portions of the plant and compact soils to the degree that plants may be unable to extend roots or stems or acquire water. The timing and extent of livestock use in the area where *Chlorogalum purpureum* var. *reductum* grows exerts substantial influence on the effects of grazing. The effects of livestock grazing on this taxon need further evaluation (U.S. Fish and Wildlife Service 2001).

Incident-specific Threats:
There were 3 target shooting sites identified and located within Camatta Canyon amole critical habitat on the Los Padres National Forest, with one of those sites located in occupied habitat. The site located in occupied habitat is at the eastern edge of the mesa where some of the highest density of the amole occur. This area, while classified as active, doesn't show any sign of recent use but in the past it was used as a site to launch clay targets for shotgun shooting over the canyon below the mesa. There are some shotgun shells and clay target debris present on the site. The other target shooting sites are classified as active but are well away from occupied habitat.

Direct Effects:
The main effect on the amole is that the above ground parts of this geophyte could be trampled and damaged if target shooting activities take place during the part of the year when the above ground parts of the plants are present at the site on the mesa. The other two sites could have some direct effect on critical habitat by concentrating use in a small area and by the deposition of trash at the sites both for targets and spent ammunition cases.

Indirect Effects:
No indirect effects of target shooting activities on the Camatta Canyon amole have been identified.

Cumulative Effects:

Grazing could occur in the same location as the known target shooting sites and can inflict direct physical damage to individual plants.

6.3.2 *Cirsium fontinale* var. *obispoense* (Chorro Creek bog thistle)

Background:
Cirsium fontinale var. *obispoense* is a biennial or short-lived perennial plant up to 2 meters (m) (6.6 feet (ft)) tall in the aster and sunflower family (Asteraceae). This species was listed as endangered by USFWS on December 15, 1994 (59 FR 64613).

There have been no consultations with USFWS regarding this species prior to this request.

Habitat:
Cirsium fontinale var. *obispoense* is a serpentine endemic (Chipping 1994; Safford et al. 2005). The plants occupy perennial seeps and springs in serpentine soil and rock, and they often grow in colonies (spatial groups of presumably separate individuals). At the occurrences where dense, non-native grasses grow (e.g., Laguna Lake Park), many individuals are unable to spread their leaves into a typical rosette. Instead, the plants somewhat resemble spiny romaine lettuce, most of which flower and set seed. As the grasses die back in mid-summer, the leaves of the plant fall outward and form a carpet around its center, which suppresses future grass growth. This results in a substantial amount of seed germination within the circle of old leaves during the following year and very little germination beyond the circle (Chipping 1994). The plants usually occur on slopes, with existing records at 37 to 381 m (120 to 1,250 ft.) elevation (California Department of Fish and Wildlife 2013a).

Occurrence:
The taxon is now known from 19 occurrences, including the type locality on Camp San Luis Obispo with 1,872 individuals in 2008. All known occurrences of *Cirsium fontinale* var. *obispoense* are west of the outer coast ranges of the Central Coast Region in San Luis Obispo County, California.

Threats
General Threats:
At the time of listing, the identified threats were cattle grazing (trampling and herbivory), proposed development and water diversions, road maintenance, inadequacy of existing regulatory mechanisms, stochastic events (in particular drought), and invasive plants (USDI Fish and Wildlife Service 1994).

Incident-specific Threats:
Chorro Creek bog thistle is not known to actually occur on the Los Padres National Forest but one known location is adjacent to the forest boundary southwest of the Cerro Alto lookout. The

location is well away for any roads or trails open to the public. There are no known target shooting areas near this potential location. Therefore, there are no known threats.

Direct Effects:
There are no direct effects from target shooting on Chorro Creek bog thistle.

Indirect Effects:
There are no indirect effects from target shooting on Chorro Creek bog thistle.

Cumulative Effects:
There are no cumulative effects related target shooting on Chorro Creek bog thistle.

6.3.3 *Eremalche parryi* ssp. *kernensis* (Kern mallow)

Background: Kern mallow was federally listed as endangered on July 19, 1990 (55 FR 29370) and a recovery plan for the species was approved on September 30, 1998 (USDI Fish and Wildlife Service 1998). The following species description, life history information, and threats are summarized from T.M. Sandoval and E.A. Cypher (2006).

Kern mallow can vary from single-stemmed to multiple-stemmed, with the central stem erect and the lateral stems trailing along the ground. The flowers have five petals, and the wheel-shaped fruits are divided into single-seeded segments. Controversy surrounding the taxonomy of this species centers on the gender, color, and size of flowers in Kern mallow versus Parry's mallow *(Eremalche parryi).* Some populations in the Kern/Parry's mallow complex are gynodioecious, meaning that a population contains a mixture of plants that have only pistillate (female) flowers and plants that have only bisexual flowers (with both male and female parts). Some experts believe that gynodioecious populations represent Kern mallow and those populations with only bisexual flowers are Parry's mallow, whereas others maintain that both Kern mallow and Parry's mallow are gynodioecious.

In June 1998, the Southwest Center for Biological Diversity (Center) filed a notice of intent to sue the United States Department of Agriculture, USFS, citing failure to consult with the Service on the existing Land Management Plans (LMPs) for the San Bernardino, Cleveland, Angeles, and Los Padres National Forests. The Center also noted that the USFS had failed to consult on individual ongoing actions and projects which implement the LMPs.

Consultation to Date:

- 1998, an agreement was approved between the USFS and the Service's Carlsbad and Ventura Fish and Wildlife offices. This agreement established an interagency team to facilitate a collaborative approach to consultations pursuant to section 7 of the Act. The principal focus of the team was to develop a province-wide consultation on all four National Forest's existing LMPs. However, the team recognized that those LMPs did not reflect the current status of listed species or their habitats. A single province-wide

consultation could not address the potential adverse effects occurring from ongoing activities, the second component of the lawsuit. In addition, the team expected such a consultation to take at least two years to complete.

- 1999, the Service signed a Consultation Strategy with the USFS that identified the need to consult immediately on ongoing actions. The two agencies identified 7 high-priority program areas that are likely to adversely affect listed species: (1) maintenance, repair, and use of the existing Forest Service road system; (2) use of existing developed recreation sites; (3) maintenance, repair, and use of the existing Forest Service trail system; (4) wildfire and prescribed burning activities; (5) grazing by livestock; (6) dispersed recreation use; and (7) special uses.
- 2005, the Service issued non-jeopardy and no adverse modification biological and conference opinions regarding the Revised Land Management Plans for the four southern California national forests (1-6-05-F-773.9). These opinions addressed the strategic direction for the four southern California national forests including the establishment of goals, objectives, standards and land use zoning, but did not address any specific activities or allow for any ground disturbing activities. Thus, all project activities under the LMPs that may affect listed species or critical habitats, including dispersed recreation and other ongoing uses, were subject to project- level analysis and section 7 consultation under the Act.
- 2012, the Ventura Fish and Wildlife Office received a request from the USFS to initiate formal consultation regarding the potential effects of the USFS's hiking trail system to listed species on Los Padres National Forest.
- 2013, the Ventura Fish and Wildlife Office responded with a letter requesting additional information in order to initiate the consultation.
- 2013, the Ventura Fish and Wildlife Office received additional information from the USFS in response to our March 28, 2013, letter.
- 2013 USFWS issued a biological opinion for ongoing activities associated with the off-highway vehicle program, Los Padres National Forest, California (8-8-12-F-42). The biological opinion concluded that the Los Padres National Forest's proposed continuation of ongoing activities in their OHV trail use and maintenance program is not likely to jeopardize the continued existence of Kern mallow.
- 2013 USFWS issued a biological opinion for the revised land management plans for the four southern California forests, California. The conclusion was that non-motorized trails, recreation management, special use permit administration, administrative infrastructure, fire and fuels management, livestock grazing/range management, and minerals management are not likely to jeopardize the continued existence of the Kern mallow. This conclusion was based on the following:
    1. The Forest Service will restrict vehicles and OHVs to designated roads and trails and will monitor OHV off-trail activities in Ballinger Canyon, which addresses the primary threats to this species. New projects will be implemented so that they

promote the recovery of Kern mallow.

2. Existing ground disturbance due to use of developed recreation facilities and OHV trails at Ballinger Canyon Off-Highway Vehicle area that impacts Kern mallow occupied habitat will be minimized by conservation measures to be implemented as appropriate to a particular site and activity as determined through site-specific section 7 consultation and analysis. Many of the potential impacts associated with use of these facilities and trails are expected to be minor or negligible upon implementation of appropriate minimization measures.
3. The Forest Service will undertake measures to prevent, control, and eradicate noxious weeds associated with activities at the developed recreation facilities and OHV trails in Kern mallow occupied habitat at Ballinger Canyon.
4. The LMP has proposed BMPs and standards to reduce the adverse effects of the various programs on the Kern mallow.
5. The low level impacts anticipated will not result in an appreciable reduction in the reproduction, numbers, or distribution of the Kern mallow on Forest Service lands or range-wide.
6. The overall quality of Kern mallow habitat would be improved as a result of habitat enhancement associated with the standards.

Habitat:

Typically, *E. parryi* subsp. *kernensis* favor areas where shrub cover is < 25% and average herbaceous cover ranges from 48–80% (USFWS 2013). It is predominately known to occur in arid habitats including alkali flats and eroded hillsides of the southern San Joaquin Valley and adjacent areas. In addition, *E. parryi* subsp. *kernensis* can grow in a variety of arid habitats depending on its elevation. At the lower elevations up to about 610 meters (2,000 ft), *E. parryi* subsp. *kernensis* is found in grassland and saltbush scrub habitat on substrates often described as alkaline, alluvial, shale, clay, and dry sandy loam. At mid-range elevations between about 610 and 914 meters (about 2,000 and 3,000 feet), the subspecies is commonly associated with *Ephedra californica* and at higher elevations, above 914 meters (3,000 ft), *E. parryi* subsp. *kernensis* occurs in juniper woodland, on gravel and shale substrates (USDI Fish and Wildlife Service 2013d).

Occurrence:

Since *E. parryi* subsp. *kernensis* is an arid-land annual, the phenology, reproduction, and population size can vary greatly depending on rainfall / drought cycles. As a result, population trends and occurrence status are quite variable. For example, records can vary from year to year, and a lack of plants at a location one year can be followed by hundreds the next (USDI Fish and Wildlife Service 2013d). According to the CNDDB (2013) Kern mallow occurs on USFS land in the Los Padres National Forest near Ballinger Campground, in Ballinger Canyon, in the western San Emigdio Mountains, Ventura County.

Threats

General Threats:
Threats to *E. parryi* subsp. *kernensis* identified in the 1990 final listing rule include destruction and modification of habitat due to agricultural land conversion, water development and exploration, off-road vehicle use, oil and gas exploration, road maintenance and expansion, and mineral extraction (USDI Fish and Wildlife Service 2013d). Presently, these factors continue to threaten the subspecies, along with the added threats of a high speed rail construction and the construction and operation of solar facilities. In addition, grazing and competition from non-native plant species continue to be threats for the subspecies. Grazing is often used as a habitat management tool throughout the range of *E. parryi* subsp. *kernensis* on Federal lands to eliminate competition from both non-native and native competitors (USDI Fish and Wildlife Service 2013d). Livestock grazing occurs on the Carrizo Plain National Monument, the LPNF, and is being considered for the Bitter Creek National Wildlife Refuge (CNDDB 2013, USDI Fish and Wildlife Service 2013d). The increased productivity of non-native annual grasses can also lead to increased fire frequency due to the build-up of fuel. *Eremalche parryi* subsp. *kernensis* does not occur in fire-adapted habitats and thus the native vegetation does not recover quickly after burning (USDI Fish and Wildlife Service 2013d). The most recent report on the subspecies from the USFWS (2013d) lists that of the known occurrences 59% are located on Federal lands and are subject to grazing, off-highway vehicles or other uses; 35% are located on private land or land where the ownership status was not known and only 2% were protected on state-owned preserves.

Incident-specific Threats:
If any plants are located at a shooting site then they could be damaged during the short time they are present during the growing season. However, because there are no known shooting sites that occur in known location for Kern mallow on the forest, it is highly unlikely that there are any effects of target shooting on it.

Direct Effects:
Plants could be trampled and damaged or killed if they are located at any target shooting sites.

Indirect Effects:
Continuous ground disturbance by foot traffic, vehicles or site modification from the installation of targets could allow invasion by non-native weedy species. These plants could compete with Kern mallow for resources.

Cumulative Effects:
There are active grazing allotments, OHV trails, hiking trails and roads in areas where Kern mallow has been found. All of these can have an effect on Kern mallow individuals.

6.3.4 Eriogonum kennedyi var. *austromontanum* (southern mountain buckwheat)

Background:
Southern mountain buckwheat was federally listed as threatened on September 14, 1998 (63 FR 49006). Southern mountain buckwheat critical habitat was designated on December 26, 2007 (72 FR 73092). Thirteen units of southern mountain buckwheat designated critical habitat include 904 acres of land within the San Bernardino Mountains (72 FR 73092). The units are in the Arrastre/Union Flat, Big Bear Lake, Fawnskin, Gold Mountain, Holcomb Valley, North Baldwin Lake, Sawmill, and South Baldwin Ridge/Erwin Lake complexes. The SBNF includes 872 acres of critical habitat, while 32 acres are on private land (72 FR 73092).

Southern mountain buckwheat is a woody-based perennial plant with stems forming loose cushion-like leafy mats, 6-14 inches (in) (14-36 centimeters) (cm)) wide. The leaves are oblanceolate and 0.2 to 0.4 in (0.5-1 cm) long, with dense white hair. The inflorescences are 3-6 in (8-15 cm) high, bearing head-like flower clusters (63 FR 49006). The perianth is white to rose and composed of inner and outer lobes that are similar in appearance. Southern mountain buckwheat is distinguished from *Eriogonum kennedyi* var. *kennedyi* and *E.* var. *alpigenum*, which also occur in the San Bernardino Mountains, by longer plant parts (inflorescences, leaves, fruits, and involucres) (63 FR 49006). Southern mountain buckwheat could also be confused with *E. wrightii* ssp. s*ubscaposum*, but *E. wrightii* ssp. s*ubscaposum* has racemose flower stalks, wider leaves, and shorter fruits and is found in pine forests rather than on pebble plain habitat (63 FR 49006).

The five-year review of southern mountain buckwheat (USDI Fish and Wildlife Service 2008) made no mention of occurrences found on the Los Padres National Forest. There is still debate on whether the taxon found on the Los Padres National Forest is southern mountain buckwheat, but the consensus among experts is that it is.

Consultation to Date:

- 2013 USFWS issued a biological opinion for the revised land management plans for the four southern California forests, California. The conclusion was that non-motorized trails, recreation management, special use permit administration, administrative infrastructure, fire and fuels management, livestock grazing/range management, and minerals management are not likely to jeopardize the continued existence of the southern mountain buckwheat. This conclusion was based on the following:
    1. The restriction of vehicles to designated roads and trails addresses one of the primary threats to this species. No permanent loss of occupied or designated critical habitat is expected under the Plans. New projects will be implemented so that they promote the recovery of southern mountain buckwheat. Expansion of facilities or new facilities will be designed to focus public use away from southern mountain buckwheat habitat. The Forest Service has taken steps to protect southern mountain buckwheat including the relocation of a number of activities outside of its habitat. The Forest Service has

closed the Snow Forest Ski Area and directed special use permit activities away from southern mountain buckwheat habitat.

2. Existing ground disturbance due to facilities and infrastructure such as utility lines, roads, trails, and recreation sites overlap 54 acres (5 percent) of occupied habitat and 29 acres (3 percent) of designated critical habitat within the Forests. Impacts due to activities in these areas and due to dispersed recreation will be minimized by conservation measures to be implemented as appropriate to a particular site and activity as determined through site-specific section 7 consultation and analysis. Many of the potential impacts associated with use of these facilities are expected to be minor or negligible upon implementation of appropriate minimization measures due to the lack of direct impacts and/or the low impact nature of the activities involved (i.e., such as periodic maintenance of existing powerlines and infrastructure or low intensity use of roads for administrative purposes). Finally, the Forest Service will undertake measures to prevent, control, and eradicate noxious weeds associated with activities in these areas.
3. The low level impacts anticipated will not result in an appreciable reduction in the reproduction, numbers, or distribution of the southern mountain buckwheat on Forest Service lands or range-wide.
4. Since the Plans propose protective standards addressing the major threats to this species as described above, including the requirement to keep vehicles on designated roads and trails and focus on preventing additional habitat loss, impacts to critical habitat under the Plans should not affect the function of the overall designation to provide conservation and recovery benefits to this species.

While this biological opinion address all four southern California national forest, it did not specifically address the situation on the Los Padres.

Habitat:

Southern mountain buckwheat is found on pebble plain habitat and is associated with Bear Valley sandwort (*Arenaria ursina*) and ash-gray (Indian) paintbrush (*Castilleja cinerea*) (USFS 2002). Pebble plains are characteristically treeless openings within surrounding montane pinyon-juniper woodland or coniferous forest with clay soils covered with quartzite pebbles. They have extremely low infiltration rates and high runoff potentials (63 FR 49006). The surface of undisturbed pebble plain habitat is about 31-38 percent vegetation, 15 percent plant litter, 45-47 percent rock pavement, and 0.89-1.2 percent bare soil (USDA Forest Service 2002). Most occurrences are at elevations between 6,000 to 9,500 feet (ft) (1,800 to 2,300 meters (m)) (63 FR 49006).

Occurrence:

Southern mountain buckwheat has the most restricted range of the pebble plain endemic plants, although it may be the most dominant plant where it does occur. Currently, southern mountain buckwheat is known to occur in nine pebble plain complexes, including the Broom Flat Complex

that was not known to be occupied by southern mountain buckwheat at the time of listing. The pebble plain complexes supporting southern mountain buckwheat include Arrastre/Union Flat, Big Bear Lake, Broom Flat, Fawnskin, Gold Mountain, Holcomb Valley, North Baldwin Lake, Sawmill, and South Baldwin Ridge/Erwin Lake. There are 8 documented occurrences of southern mountain buckwheat located on the Los Padres National Forest if their identification is correct. There are five in the Grade Valley area, two along Lockwood Valley Road and one in the Mount Pinos Botanical Special Interest Area. The last is likely a misidentified *Eriogonum kennedyi* var. *alpigenum* which is found in the SIA.

Threats

General Threats:
Habitat destruction, degradation, and fragmentation resulting from urbanization and off-road vehicle activity were identified among other threats to southern mountain buckwheat at the time of listing, and these activities remain the primary threats today.

Incident-specific Threats:
If any plants are located at a shooting site then they could be damaged or killed by trampling or removal due to clearing at the target shooting site. However, because there are no known shooting sites that occur in known locations for southern mountain buckwheat on the forest, it is highly unlikely that there are any effects of target shooting on it.

Direct Effects:
Plants could be trampled and damaged or killed if they are located at any target shooting sites.

Indirect Effects:
Continuous ground disturbance by foot traffic, vehicles or site modification from the installation of targets could allow invasion by non-native weedy species. These plants could compete with southern mountain buckwheat for resources.

Cumulative Effects:
There is potential for OHV and vehicle traffic in the Grade Valley area and road maintenance along Grade Valley Road. There is also potential effects of road maintenance along Lockwood Valley Road near where the occurrences are near the road.

7.0 Determination Summary

7.1 *Federally-listed Wildlife Species*

California condor and their critical habitat: I have determined that actions related to forest-wide recreational target shooting **May Affect**, but are **Not Likely to Adversely Affect** California condors and their critical habitat. While lead toxicity is a prevalent issue for species recovery for condors, analysis of condor behavior both by USFWS and LPNF indicated that it is unlikely that birds are picking up lead from target shooting sites. Lead ingestion by condors is believed to be

attributed to foraging on animal carcasses resulting from hunting and varmint shooting activities. Due to the condor's extensive range, cumulative effects of activities such as target shooting on LPNF lands are overshadowed by broader issues regarding the usage of lead ammunition.

California red-legged frog and their critical habitat: I have determined that actions related to forest-wide recreational target shooting **May Affect**, and are **Likely to Adversely Affect** California red-legged frogs and their critical habitat. While the majority of target shooting locations are not expected to impact either the species or critical habitat, there are a few target shooting sites located in sensitive locations where the potential for impacts is not avoidable. Further, when considered under the broader scope of cumulative effects analysis, the wide-spread nature of recreational target shooting and its connection with causing wildfires elevates the potential for the activity to adversely impact California red-legged frogs and their critical habitat.

Kern primrose sphinx moth: I have determined that actions related to forest-wide recreational target shooting will have **No Effect** on Kern primrose sphinx moth populations. There were no known shooting areas in proximity to KPSM locations, and activities related to target shooting are not expected to impact them directly or indirectly.

Vernal pool fairy shrimp and their critical habitat: I have determined that actions related to forest-wide target shooting **May Affect**, but are **Not Likely to Adversely Affect** vernal pool fairy shrimp individuals, and **May Affect**, and are **Likely to Adversely Affect** vernal pool fairy shrimp critical habitat. This is primarily due to the presence of the Chicken Springs shooting area sites (Figure 9), which are located within critical habitat for the species and cause consistent management issues for district staff due to high intensity/ frequency of use.

7.2 *Federally-listed Plant Species*

***Chlorogalum purpureum* var. *reductum* (Camatta Canyon amole) and its critical habitat:** Target shooting activities in the *Chlorogalum purpureum* var. *reductum* occupied and critical habitat have resulted in damage to some individuals over time. While individuals have been affected, no alarming changes have been observed in the population. It is my determination that target shooting on the Los Padres National Forest **may affect** but is **not likely to adversely affect** *Chlorogalum purpureum* var. *reductum* and its designated critical habitat.

***Cirsium fontinale* var. *obispoense* (Chorro Creek bog thistle):** The result is that there is **no effect** on Chorro Creek bog thistle by target shooting on the Los Padres National Forest.

***Eremalche parryi* ssp. *kernensis* (Kern mallow):** The result is that the shooting activity taking place in the occupied habitat of the Kern mallow **may affect** but is **not likely to adversely affect** the population.

***Eriogonum kennedyi* var. *austromontanum* (southern mountain buckwheat):** The result is that the shooting activity taking place in the occupied habitat of the southern mountain buckwheat **may affect** but is **not likely to adversely affect** the population.

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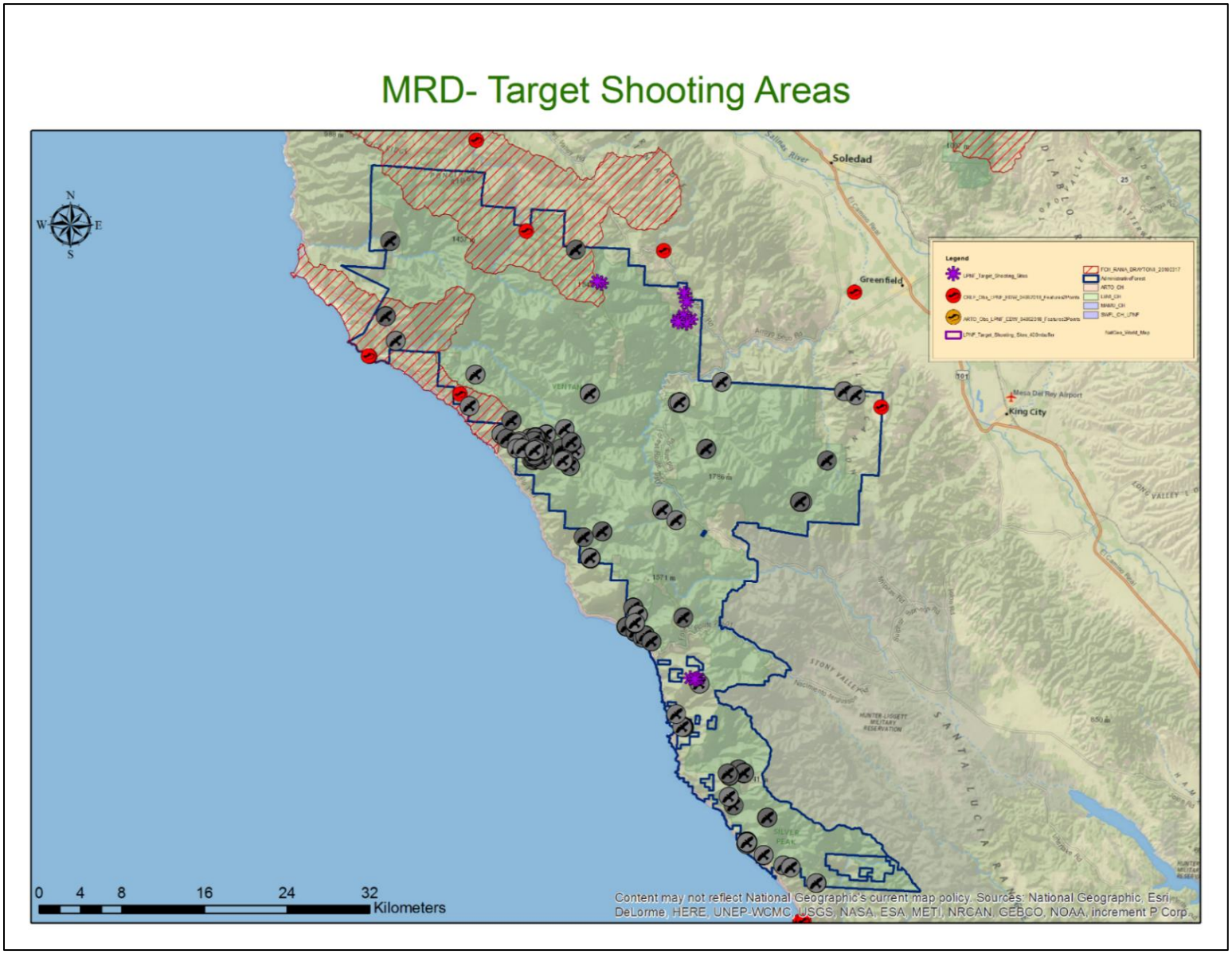
9.0 Figures

Figure 1. Target shooting areas on the Los Padres National Forest identified by Forest Service staff.

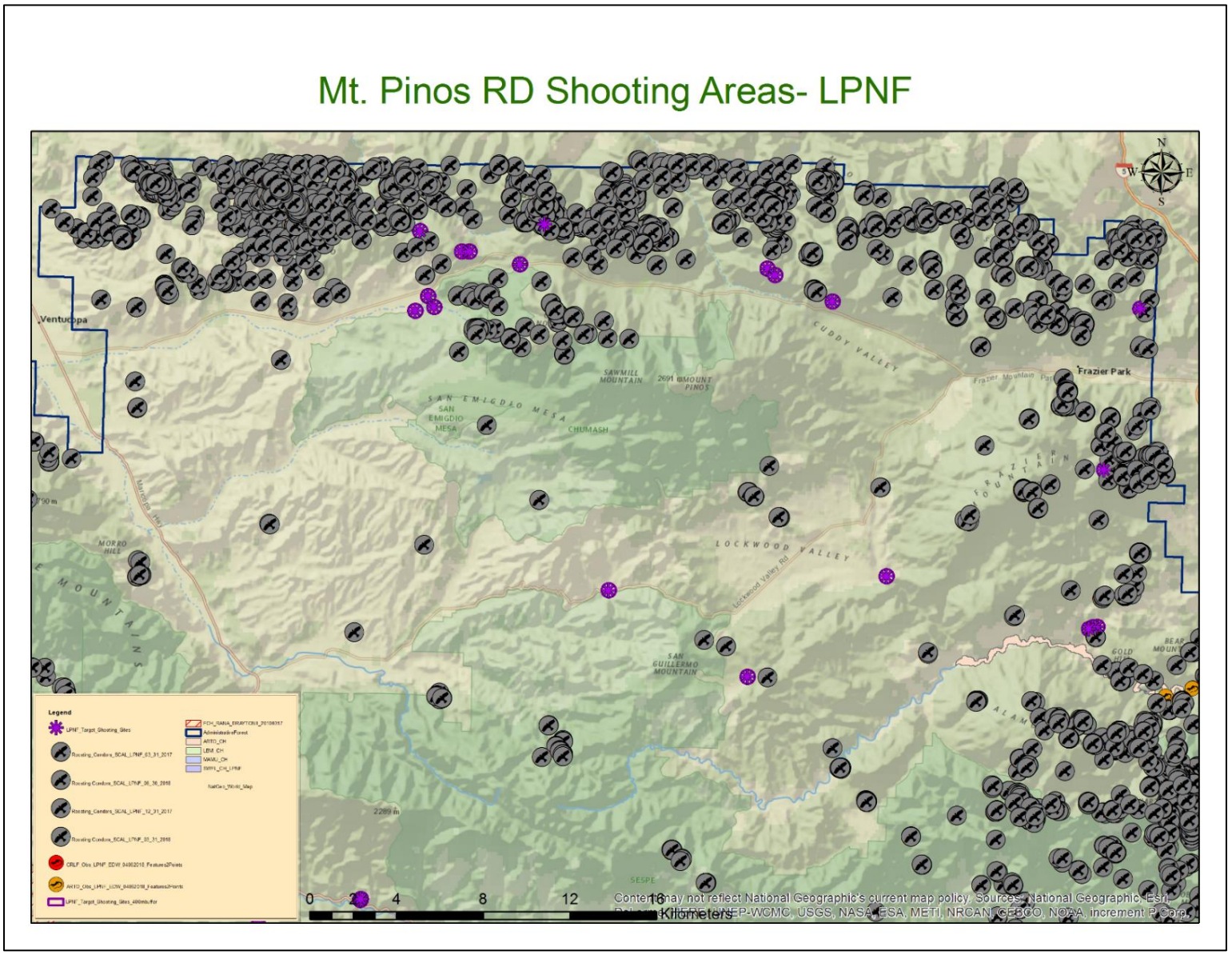
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 2. Target shooting areas on the Monterey RD of Los Padres National Forest identified by Forest Service staff.



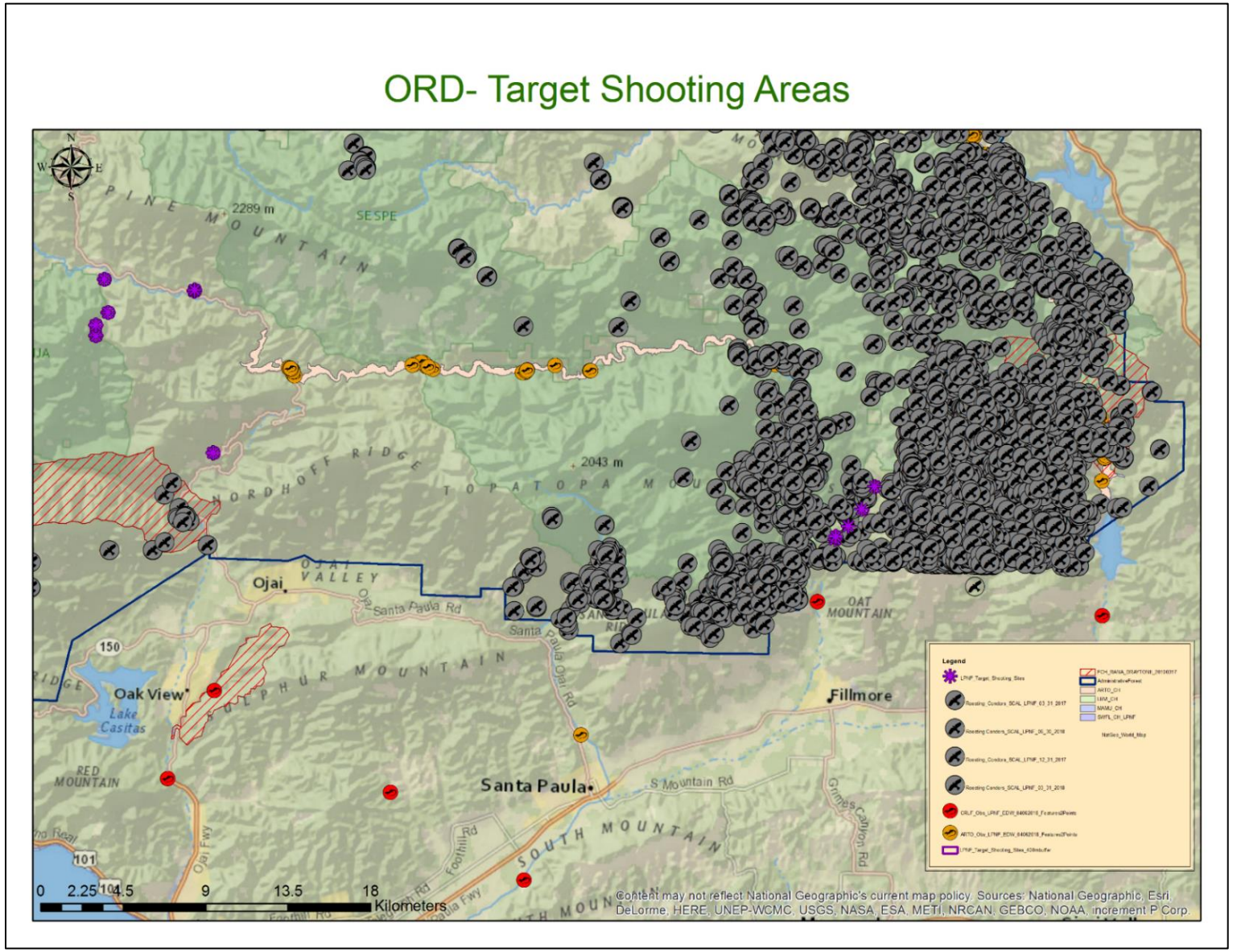
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 3. Target shooting areas on Mt. Pinos Ranger District of the Los Padres National Forest identified by Forest Service staff.



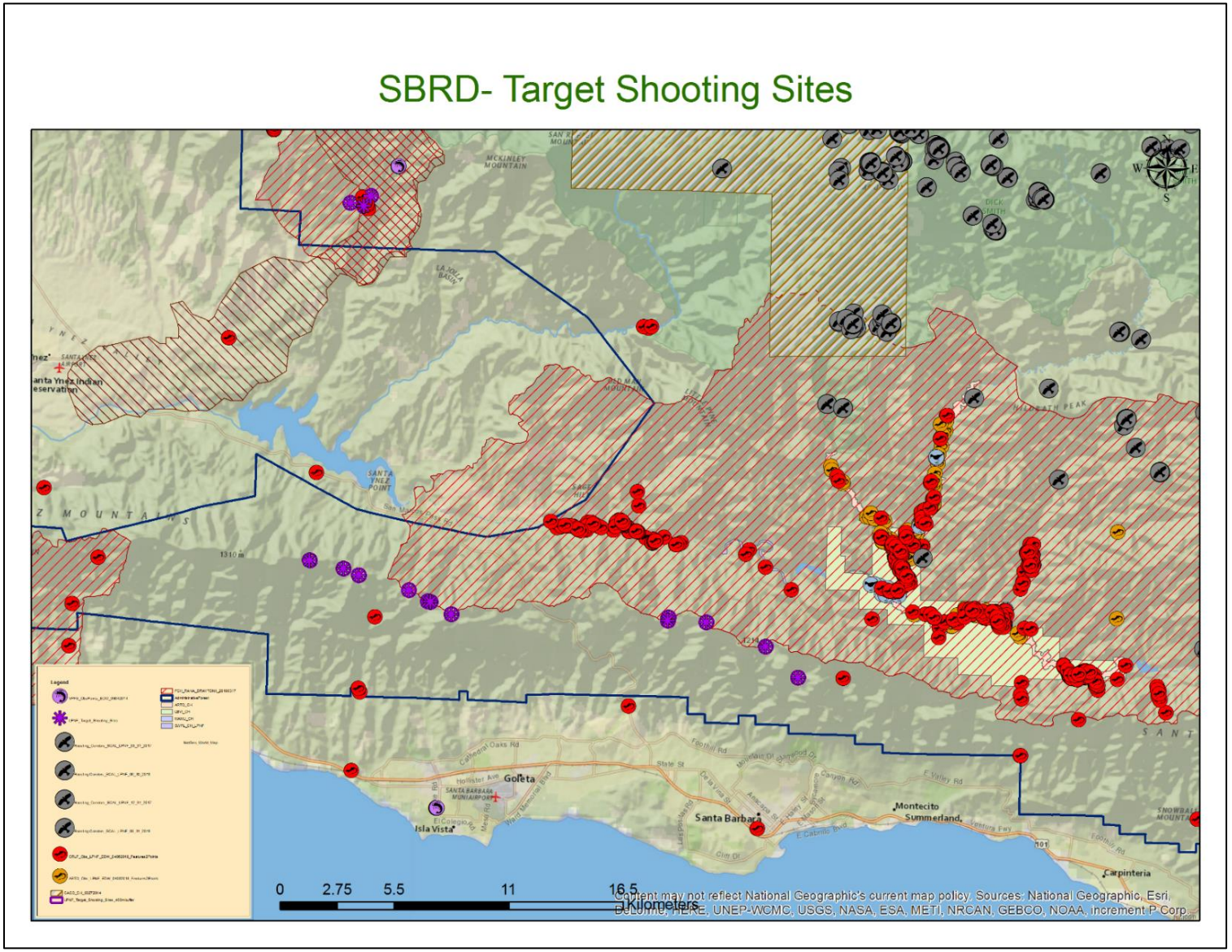
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 4. Target shooting areas on Ojai Ranger District of the Los Padres National Forest identified by Forest Service staff.



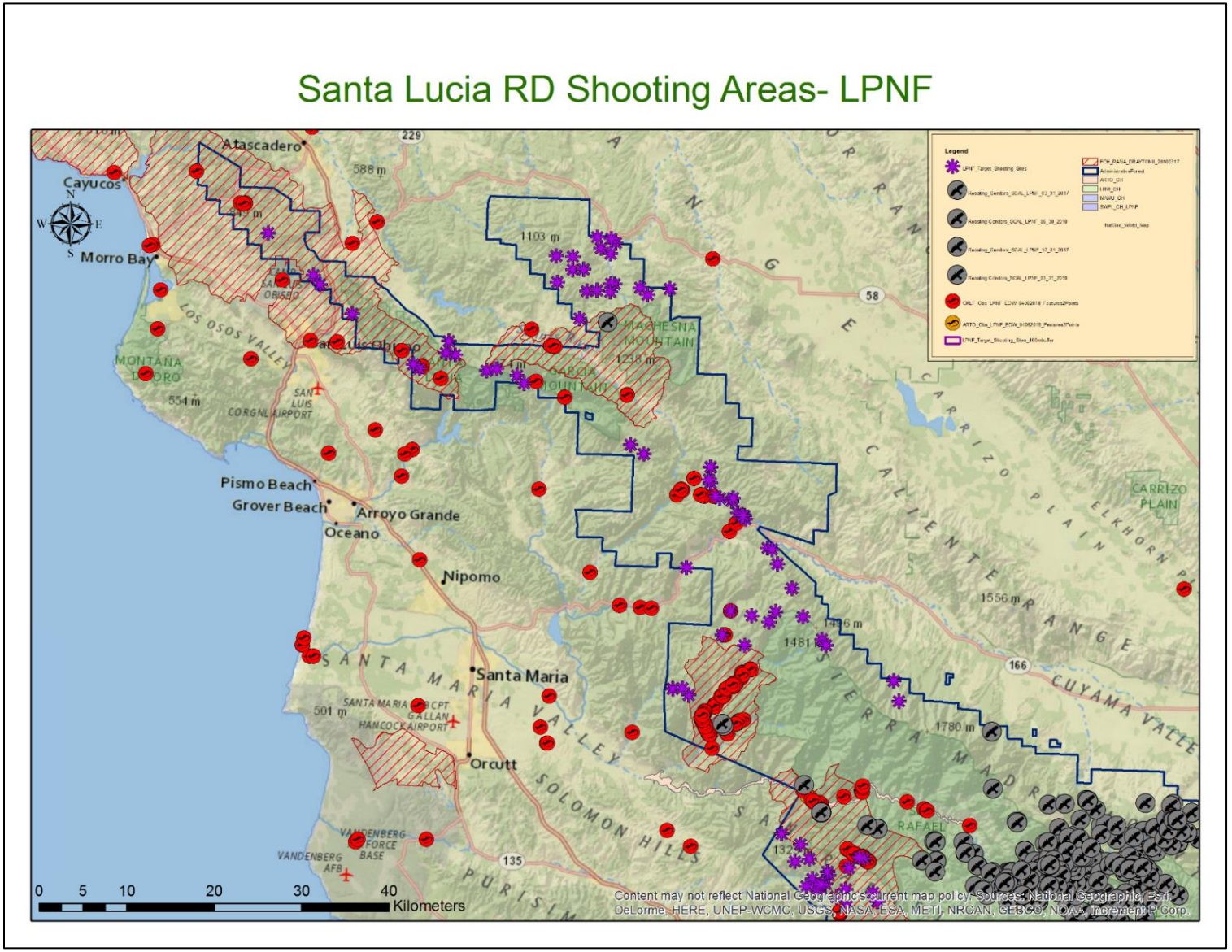
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 5. Target shooting areas on Santa Barbara Ranger District of Los Padres National Forest identified by Forest Service staff.



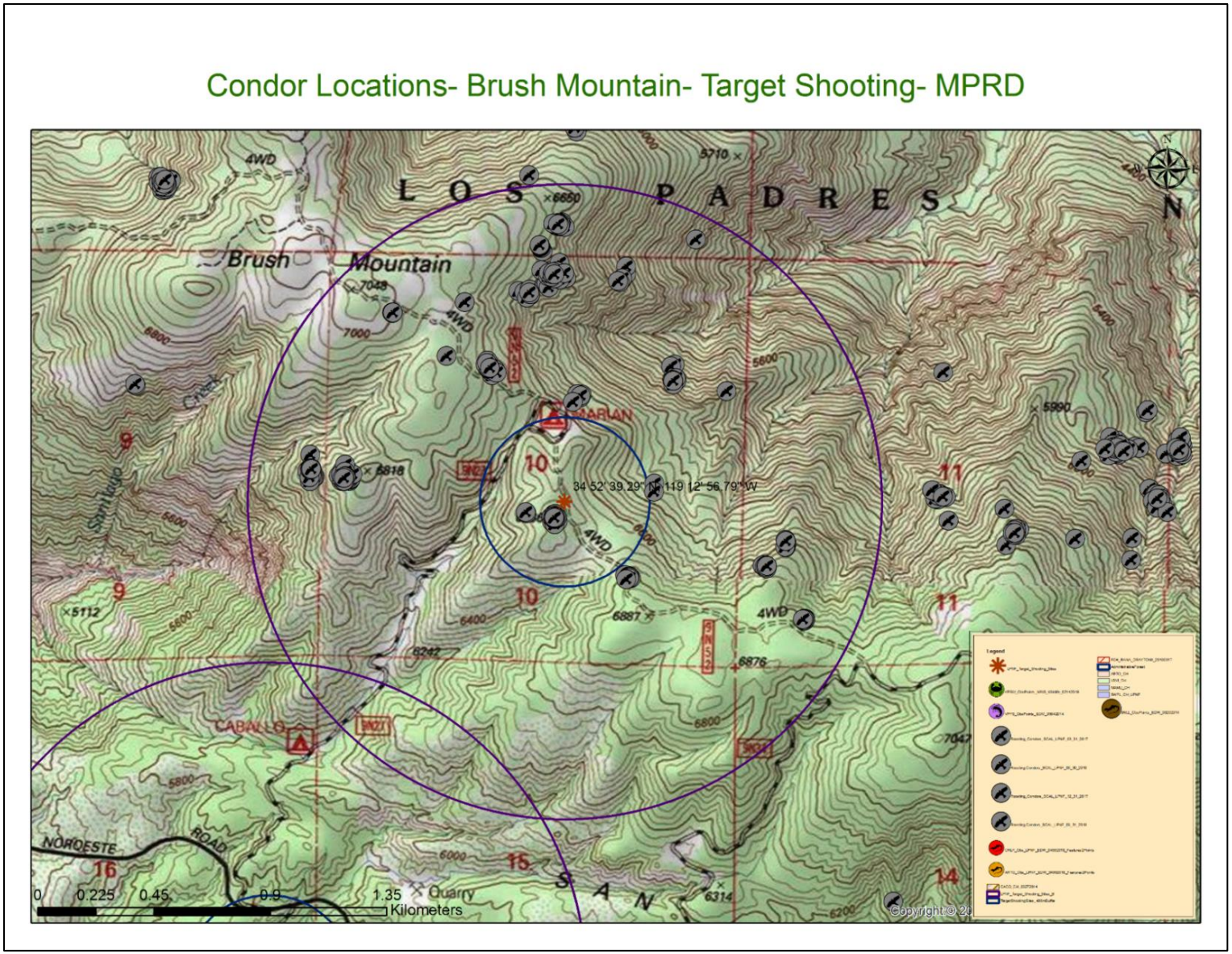
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 6. Target shooting areas on Santa Lucia Ranger District of Los Padres National Forest identified by Forest Service staff.



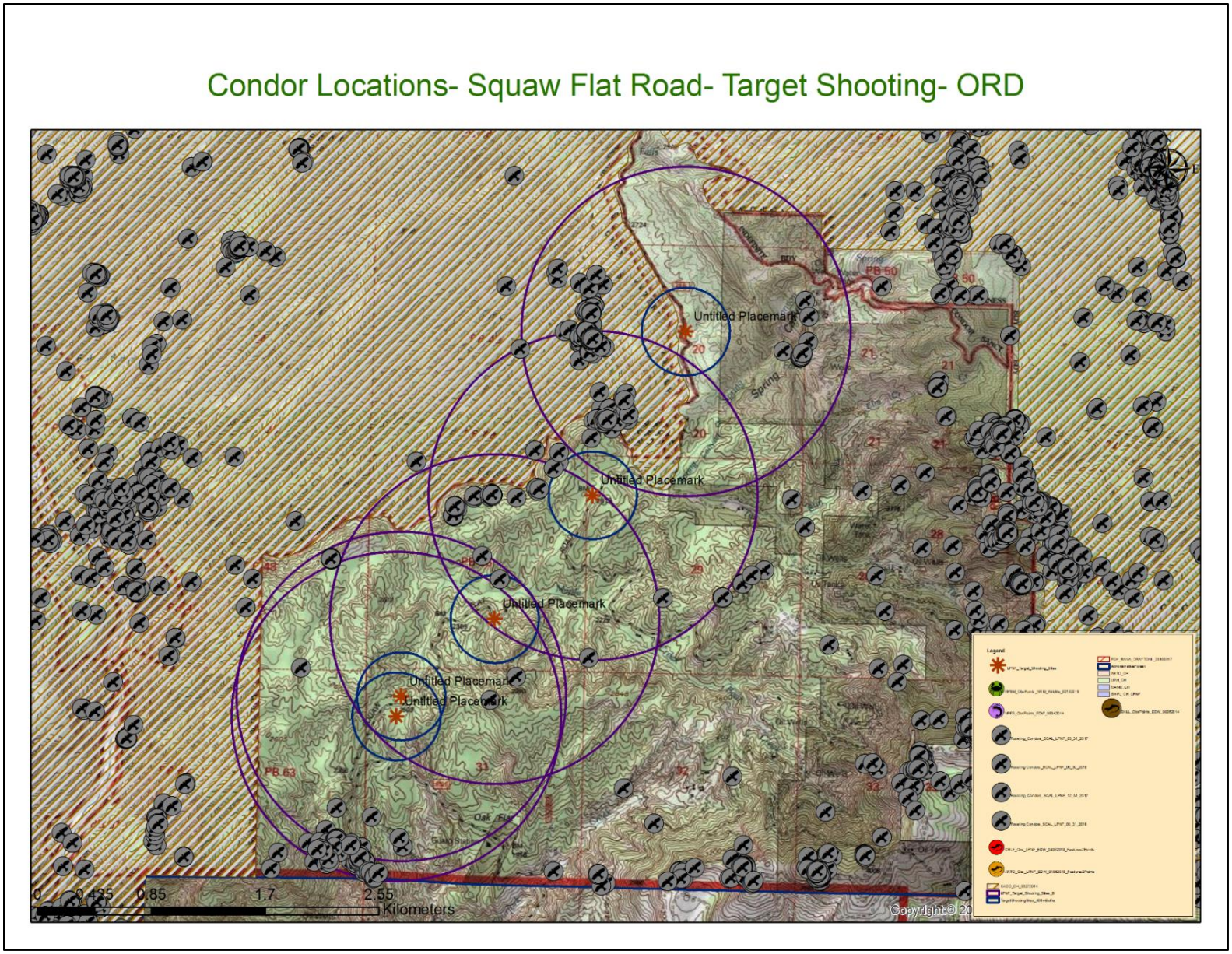
Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, and CH: critical habitat.

Figure 7. Showing condor roosting locations in regards to a target shooting location near Brush Mountain on Mt. Pinos RD.



Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, CH: critical habitat and BNLL: blunt-nosed leopard lizard.

Figure 8. Condor locations in relation to target shooting sites on Squaw Flat Road on Ojai RD.



Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, CH: critical habitat and BNLL: blunt-nosed leopard lizard.

Figure 9. California red-legged frog locations in relation to the Chicken Springs shooting area on Santa Barbara RD.

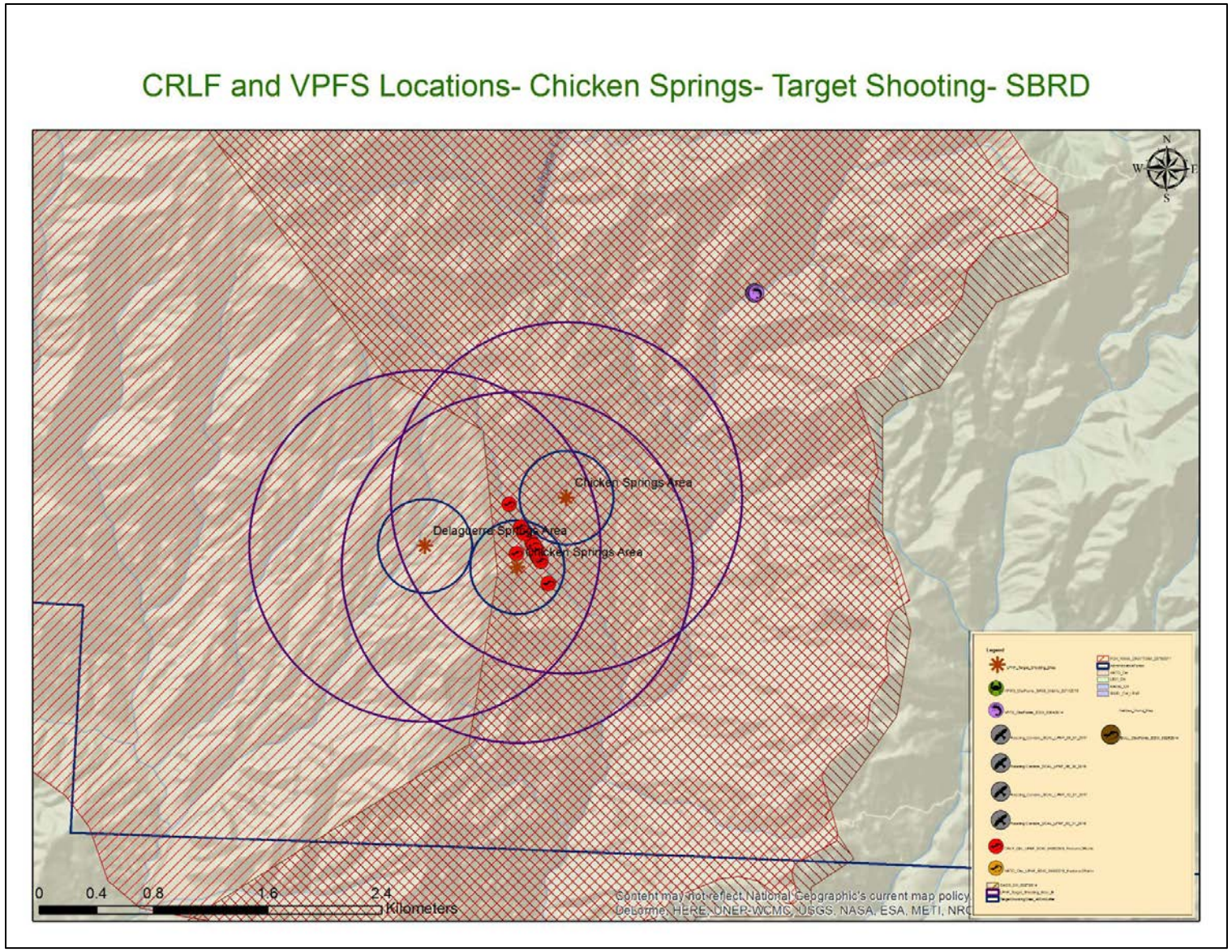


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Figure 10. California red-legged frog locations and critical habitat in relation to Nira Campground and Manzana Creek target shooting locations.

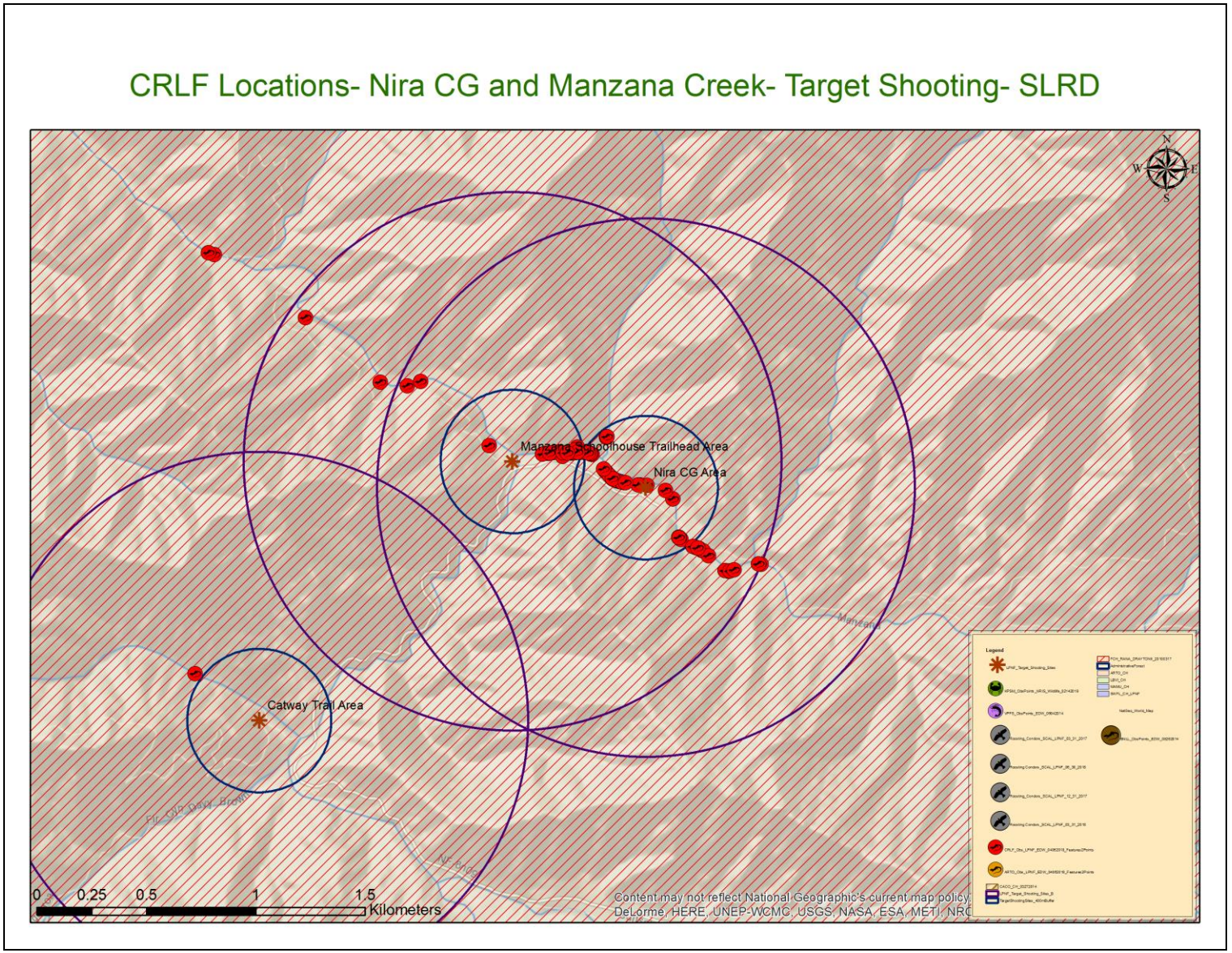

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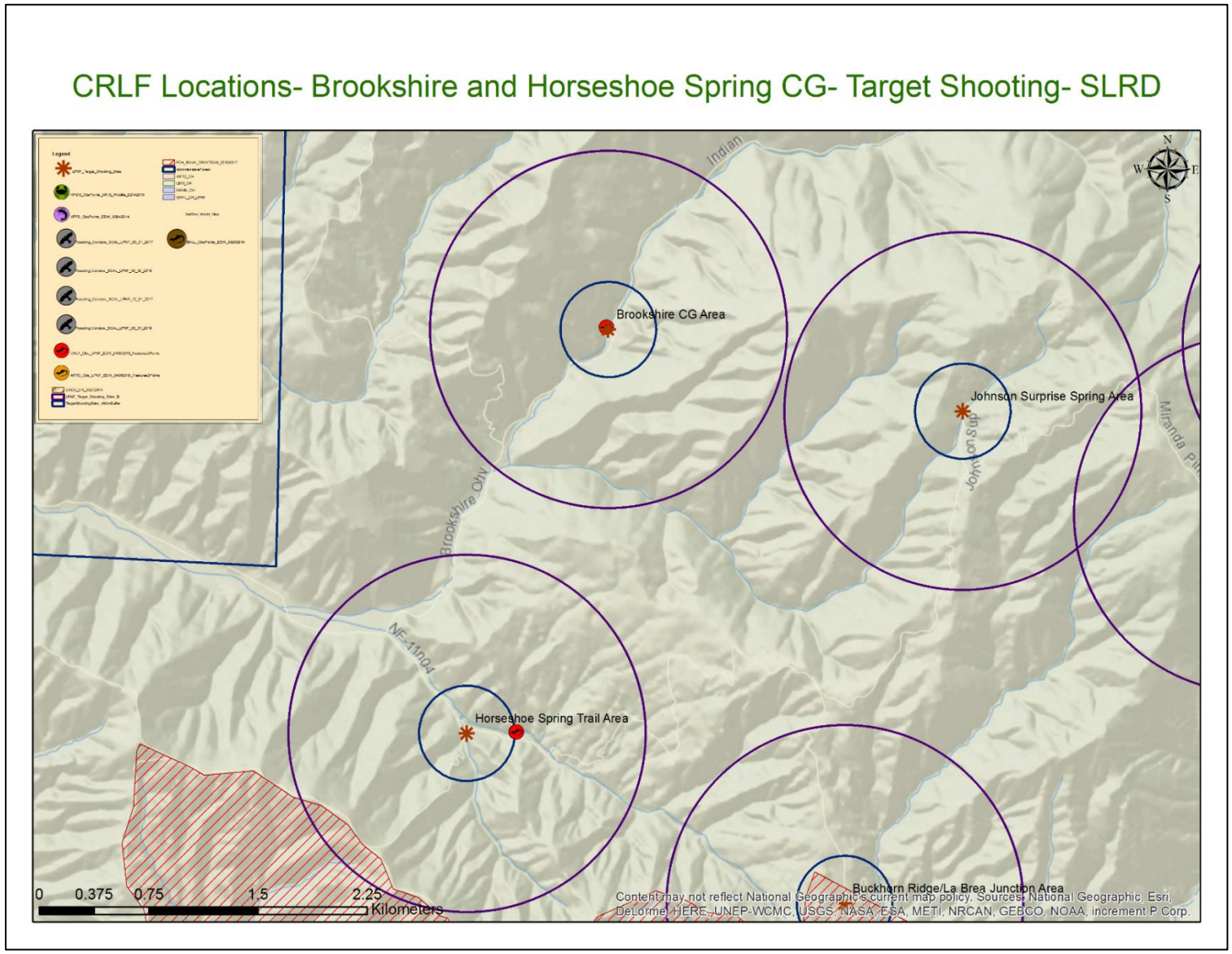
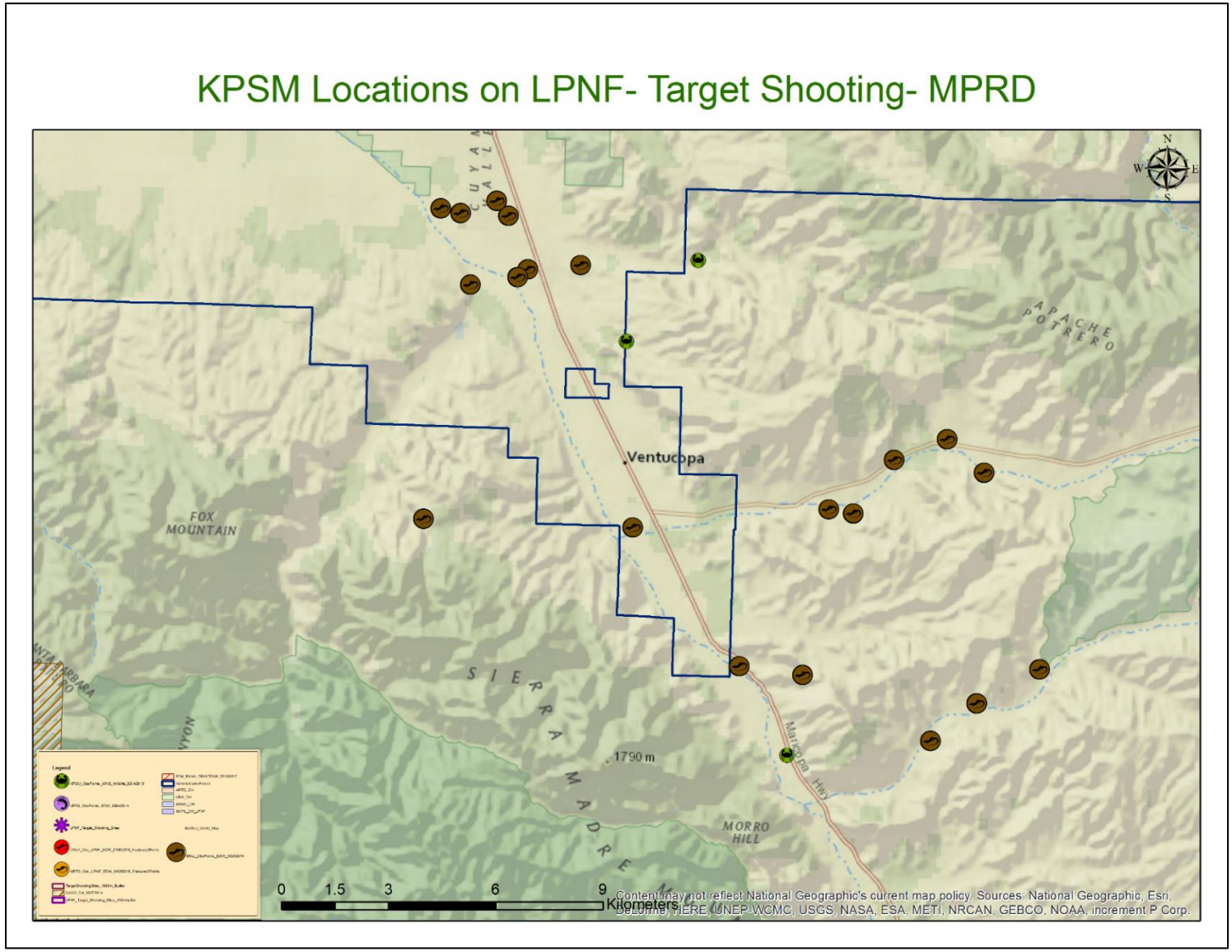
Figure 11. California red-legged frog locations in relation to Brookshire and Horseshoe Springs Campgrounds.



Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, CH: critical habitat and BNLL: blunt-nosed leopard lizard.

Figure 12. Kern primrose sphinx moth locations on Los Padres National Forest.



Legend Abbreviations: LPNF: Los Padres National Forest, CRLF: California red-legged frog, LBVI: least Bell's vireo, ARTO: arroyo toad, VPFS: vernal pool fairy shrimp, SWFL: southwestern willow flycatcher, CH: critical habitat and BNLL: blunt-nosed leopard lizard.

Appendix A- Forest Closure Orders

Summary: Any violation of a current Forest Order related to target shooting (Forest Order 05-07-00-19-01) and the prohibitions found at 36 CFR Part 261, Subpart A, is punishable by a fine of not more than $5,000 for an individual or $10,000 for an organization, or imprisonment for not more than 6 months, or both. 16 USC 551 and 18 USC 3559, 3571, and 3581. Recreational target shooting that violates the prohibitions found in 36 CFR 261, Subpart A, or the prohibitions imposed by a Forest Order issued pursuant to 36 CFR 261, Subpart B, are not considered federal actions, as they aren't permitted under Forest Service regulations.

Forest Order Number	Status
05-07-00-19-01	Current
05-07-00-18-07	Expired
05-07-00-17-11	Expired
05-07-00-17-09	Expired
05-07-55-17-04	Expired
05-07-00-16-15	Expired
16-06	Expired
16-04	Expired
15-04	Expired
15-05	Expired
14-09	Expired
14-03	Expired
14-04	Expired
14-01	Expired
13-05	Expired
13-03	Expired
13-01	Expired
13-02	Expired
12-07	Expired
12-05	Expired
12-02	Expired
12-01	Expired
11-06	Expired
10-9-2500-1	Expired
09-23-2500-1	Expired
09-11-5100-08	Expired
08-08-5100-07	Expired
07-09-5100-7	Expired
07-07-5100-05	Expired
06-06-5100-05	Expired

EXHIBIT K

---------- Forwarded message ----------
From: **MaryAnne Theilmann** <matheilmann@googlemail.com>
Date: Fri, Apr 20, 2018 at 6:15 AM
Subject: Condors and Cuddy Valley
To: Jill Mills <sbjilly@gmail.com>, Ted Theilmann <theilmann2@cox.net>

Los Padres ForestWatch Opposes Logging in Condor Country
Timber companies target 2,800 acres of trees near Mt. Pinos along the Tecuya Ridge.

BY GWENDOLYN WU

--
Rick Nye
Refuge Manager, Seal Beach NWR
562-254-4352 cell | 562 799-3827 fax
800 Seal Beach Blvd, Bldg 226, Seal Beach, CA 90740

"Kirkland, Steve" <steve_kirkland@fws.gov>

From:	"Kirkland, Steve" <steve_kirkland@fws.gov>
Sent:	Mon Apr 23 2018 12:00:11 GMT-0600 (MDT)
To:	"Gilligan, Kirk" <kirk_gilligan@fws.gov>
CC:	David Ledig <david_ledig@fws.gov>, Joseph Brandt <Joseph_Brandt@fws.gov>, Thomas Cline <thomas_cline@fws.gov>
Subject:	Re: [EXTERNAL] Fwd: Condors and Cuddy Valley

FYI:

This is the project.

Joseph provided the science base link to proofed gps data to the FS biologist in February.

The main message to anyone talking with the Friends is that a shaded fuel break with purpose of reducing the excessive fuel load caused by suppression, insects and drought, is not a threat to the condor as stated by Los Padres Forest Watch, and that all places condor roost must be completely avoided.

The FS's proposed action statement in the link below provides the detail and how this project is likely covered under a CATX.

LPFW:
" With less than 300 condors in the wild, preserving their habitat on public lands like the Los Padres National Forest is critically important. Our analysis of four years of condor data revealed 14 roosting sites within the Tecuya Ridge project area and an additional 24 roosting sites within a half-mile of the project area. Roosts — ancient trees that condors use for rest and shelter during long flights across the landscape — are vitally important to the long-term survival of the species. The Forest Service's own standards prohibit intrusive activities within a half-mile of condor roosts. Over 65% of the Tecuya Ridge project area is within this half-mile roost buffer zone, yet the Forest Service does not plan to fully analyze how the project will impact these critical sites"

https://www.fs.usda.gov/project/?project=52502&exp=overview

EXHIBIT L

Los Padres National Forest

Antimony Inventoried Roadless Area

Mount Pinos Ranger District

Overview

Location and vicinity, including access by type of road or trail: The 40,513 acre Antimony Inventoried Roadless Area (IRA) is located within the Mount Pinos Ranger District of the Los Padres National Forest. The area is adjacent to the small communities of Frazier Park, Lake of the Woods, Pinyon Pines Estates and Pine Mountain Club; all approximately two hours north of Los Angeles. Most of the area lies north of or adjacent to the San Andreas Rift Zone. The area is split by a deep drainage known as San Emigdio Creek. Other drainages include Pleito, Salt and Cherry Creeks and Black Bob, Deadman, Cloudburst and Santiago Canyons. A strip of private land, part of the 95,000 acre Wildlands Conservancy Wind Wolves Preserve, bisects the area along San Emigdio Canyon. In addition, major paved roads and residential developments along the periphery impact the serenity of the area along the southern boundary. Centrally located on the southern edge is the Pine Mountain Club subdivision. Further to the eastern boundary are the communities of Cuddy Valley, Lake of the Woods and Frazier Park. Extensive private lands are found on the northern border. These lands are along Black Bob Canyon, Salt Creek, Pleito Creek, Devil's Kitchen and others. Private landowners do not provide access through these lands.

Geography, topography and vegetation (including the ecosystem type(s): The area consists of folded and faulted non-marine sedimentary rock formations south of the fault and a mixture of intensified fractured and faulted granite, gneiss and schist north of it. Numerous small peaks and drainages that primarily flow into the San Joaquin Valley characterize the topography. Elevations range from 3,250 feet up to 7,495 feet atop San Emigdio Peak.

Approximately 48% of the total area of Antimony is pinyon woodlands (*Pinus monophylla*), Great Basin sagebrush (7%) and other conifers like (big-cone Douglas-fir (*Pseudotsuga macrocarpa*). 'Eastside' pine (5%) is present and a minor amount of mixed conifer forest occupies the highest elevations. Annual grasslands comprise approximately 1,300 acres and are not very prevalent. There is a minor component of coastal sage scrub with buckwheat (*Eriogonum* spp.) and rabbitbrush (*Chrysothamnus nauseosus)* as the dominant cover. There are also 26 acres of valley oak (*Quercus lobata*) and 3,100 acres of canyon live oak (*Quercus chrysolepis*).

Current uses of the area: Recreation use in Antimony is generally light except for a few holiday weekends and a couple of popular destinations within the areas. Portions of the area receive intensive, seasonal use by hunters and year-round use by off highway vehicle (OHV) enthusiasts and mountain bikers. The area is used for wood gathering, recreational target shooting and pinyon nut collection.

The unit is bisected in the middle by the Wind Wolves Preserve, a north-south private land corridor in San Emigdio Canyon connecting to the Pine Mountain Club community. Private land extends into the unit but it is 'cherry-stemmed' from inclusion. Only one private land in-holding (120 acres in size) is located in Black Bob Canyon (Township 9 North, Range 20 West, Sections 15 and 22).

There are six primitive campgrounds (Valle Vista, Caballo, Marian, Pleito Creek, Salt Creek and Cherry Creek). Each contains picnic tables, fire rings and rustic toilets. These campgrounds are accessed by roads outside the boundary of Antimony or by 14.4 miles of motorized trails (19W01, 20W01, 20W14, 20W17, 21W01, 22W12, 21W06) within Antimony.

There is a wildlife viewing area west of Valle Vista Camp. A portion of the Bitter Creek National Wildlife Refuge is adjacent to the western portion of the unit. The Wind Wolves Preserve is adjacent to the northern portion of the unit.

There are three active and one vacant livestock grazing allotment. There are several permitted roads associated with these allotments.

There are uranium, antimony, gold, and silver mines in the area that are no longer in operation. Evidence of mining operations and associated access roads can still be seen on the landscape but are not current uses.

There is one shaded fuel break in the conceptual planning phase on Tecuya Ridge from San Emigdio on the Forest boundary, east on Tecuya Ridge to Tecuya Mountain and to the Forest boundary. There are fuel breaks, planned prescribed burns and roads that are maintained around the communities near Antimony (Unit D of the Pine Mountain Club Project for example). There is one water source and seven helispots in the area identified for potential use during fire management operations.

Snow play occurs along a half-mile section of State Highway 95 (Potrero Highway) at the eastern section of this unit between Forest Road 9N21 and the private land boundary. Visitors park along the side of this highway and play in the snow on the hillside.

There are two ozone-monitoring plots where vegetation sampling occurs.

Appearance and surroundings (such as the characteristics of contiguous areas): The area is about 24 miles long and three miles wide. Its linear configuration affords few locations where one can get away from the impacts of humans, particularly along the south facing slopes from Apache Saddle (at the fire station) to the eastern boundary of the area. About half of the vegetation is coniferous forest and one quarter is shrubland.

The area serves as a scenic backdrop to the rural mountain communities of Frazier Park, Pinyon Pines Estates, Lake of the Woods and Pine Mountain Club. The forested mountains with perennial streams provide an attractive landscape. Recreation trails, OHV routes and campgrounds provide access to this area. The level of development here is consistent with the surrounding private land.

Approximately 1% (497 acres) of Antimony illustrates scenic attractiveness characteristics that are distinctive (Scenic Attractiveness Class A). These characteristics are based upon the perceptions of landform, vegetation patterns, water characteristics, and cultural features that combine to provide unusual, unique, or outstanding landscapes. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern and balance.

Key attractions, if any, such as sensitive wildlife and scenic landmarks: There are excellent vistas of the southern San Joaquin Valley from the ridge tops of Antimony. Special attractions to the area include the San Andreas Rift Zone and formations near the fault that moved here from their

original location near the Salton Sea. There are opportunities to view the California condor (*Gymnogyps californianus*) and California spotted owl (*Strix occidentalis*). There is a wildlife viewing area west of Valle Vista Camp. A portion of the Bitter Creek National Wildlife Refuge is adjacent to the western portion of the Antimony unit and the Wind Wolves Preserve to the north.

Capability

The areas potential for wilderness is described using characteristics that make the area appropriate and valuable for wilderness, regardless of the area's availability or need. The principal wilderness characteristics that follow are generally, but not necessarily, listed in order of importance or desirability.

Naturalness of the area: There are no perennial streams that run through Antimony. All streams are intermittent or ephemeral as this area is in the desert montane landscape on the rain shadowed inland, or Cuyama Valley side, of the coastal ranges. Santiago Canyon runs for about five miles through this unit but is intermittent, flowing during the winter and spring, but not enough to establish willows or other non-herbaceous riparian vegetation. It does not support any riparian or aquatic wildlife species. There are no impoundments along that portion of Santiago Creek within the unit or within the Forest itself.

In general the health of the plant community is vigorous, with mature pinyon pine and juniper and some mature conifer that has not been burned frequently. The smaller patches of high elevation conifer here and throughout the Forest are at risk from excessive fire frequency.

About 59% of Antimony is managed to maintain a High Scenic Integrity Objective (SIO) in which the landscape appears unaltered to the casual observer. Another 41% of the unit is managed to maintain the integrity of a Moderate SIO in which management activities may appear slightly altered but never dominate the appearance of the landscape. All National Forest System lands within the unit meet or exceed these objectives although there are several roads and some mining activities that have left scars in the landscape and therefore do not meet these objectives. But these scars are small and not significant within the scope of this evaluation and they would not jeopardize the character of the entire roadless area.

Antimony is primarily composed of six Hydrologic Unit Code (HUC) 6 watersheds that drain northward to the Cuyama River. These watersheds are Santiago Creek, Los Lobos Creek, San Emigdio Creek, Pleito Creek, and Tecuya Creek running west to east. They are uniformly Class 1 properly functioning, watersheds on National Forest System lands. Although the unit on National Forest System lands is fully functional from a watershed perspective, limitations on access would not enhance nor preserve water quality because of downstream influences.

Some non-native invasive grasses (*Bromus* spp.) occur but do not dominate the vegetation.

This area has, to some extent, long fire-free intervals because of wildfire suppression efforts. But there have been more than 100 fire starts recorded within Antimony's borders from 1911 to 2009. This area has experienced few sizeable wildfires but a significant number of small fire starts, predominantly lightning-caused, have occurred. The 2010 Post Fire was the most recent event and it burned approximately two percent of the unit. There is a high uniform distribution of live and dead fuels found in these coniferous vegetation types. The management of the conifer

stands in Antimony is designed to increase them to Condition Class 1 (Forest Land Management Plan, Part 3, Table 3.3).

Most of the unit is in Kern County (with 2,400 acres in Ventura County). It is designated non-attainment for ozone and particulates for current air quality.

Undeveloped: The appearance of the landscape remains relatively natural. Most roads here are narrow jeep ways. A road scar is visible as a result of Antimony Mine activity. There are six campgrounds that are accessed by roads outside the boundary of the unit or by 14.4 miles of motorized trails within the unit. There are a number of old, unclassified roads from previous mining and timber harvesting activities. The most obvious are a road down Bradley Ridge, the road accessing the patented mining claim on Antimony Peak and the road from the northern Forest boundary into Black Bob Canyon that accesses Black Bob Mine. There is also an old rock quarry near the top of San Emigdio Mountain with a visible scar on the hillside.

There are uranium, antimony, gold and silver mines in the area but they are no longer in operation. Management emphasis is on protecting communities from fire and vegetative treatments to preserve the forested areas.

There are 3.9 miles of Forest system road, 1.1 miles of county roads and approximately 1.5 miles of Forest permitted roads in the unit.

There are 14.4 miles of motorized OHV trails.

Opportunities: The natural integrity of the area and opportunity for solitude has been compromised by numerous roads, OHV trails and mining. Approximately 87% of Antimony is managed to meet the Semi-Primitive Non-Motorized Recreation Opportunity Spectrum (ROS) objective. Lands are managed to assure that the natural character of the landscape remains dominant and motorized activities are not part of the recreation opportunities provided. Approximately 8% of the unit is managed to meet the Semi-Primitive Motorized ROS objective with lands that are managed to assure that the natural character of the landscape remains dominant. Facilities are provided for recreation in order to protect the natural integrity of the landscape rather than for the convenience of the forest visitor. The remaining 5% of the unit is managed to meet the Roaded Natural ROS objective with lands that allow for recreation development that blends with the natural environment and provides for some level of user convenience.

Opportunities for wilderness challenge are limited because of the linear shape of this area and the proximity of urban development. There is limited to moderate opportunity to experience isolation from sights, sounds, and the presence of others from the developments and evidence of humans. The relatively large (40,513 acres) size of this area does not provide isolation from human impacts and intrusions like roads and agency and public development. Similarly, developed roads and trails provide motorized and non-motorized access to this area. Expansive vistas afforded from peaks accessed by roads and trails are located in this area.

Major recreational opportunities include hiking, mountain biking, OHV trails and roads, horseback riding, camping (developed and primitive), nature viewing and hunting.

Special features and values: Floristic surveys have not been conducted throughout the entire IRA. At this time, no threatened or endangered plant species are known to occur. A small

population of pale-yellow layia (*Layia heterotricha*), a Forest Service Region 5 sensitive species, is present in Antimony.

The California condor (*Gymnogyps californianus*) uses Antimony extensively for travel and roosting as they soar on uplifted winds along the southern boundary of the San Joaquin Valley. This is an important part of the historic range of the condor. There is a condor release facility at Bitter Creek National Wildlife Refuge to the west of the unit. Condors occasionally roost on Brush and San Emigdio Peaks. There has also been California spotted owls (*Strix occidentalis*) detected in the older conifers within this unit and undocumented reports of northern goshawks (*Accipiter gentilis*). Sooty grouse (*Dendragapus fuliginosus*) were observed prior to about 1980. A portion of Antimony is included in the San Emigdio Mountains Globally Important Bird Area as recognized by the National Audubon Society.

The cultural and historic values within the Antimony Inventoried Roadless Area are comprised of significant cultural and heritage resources with listings on the National Register of Historic Places. The most significant are the traditional cultural properties (TCP) comprised of pictographs (rock art) and milling features. There are archaeological sites within Antimony. Several of the sites are highly significant. One consists of both pictographs (rock art) and petroglyphs (carvings in stone). Another site is a large monument in honor of Juan Jose Fustero, last of the Tataviam, who died in 1921 at Piru Lake.

Description of size and shape: The linear shape of this unit, which is also adjacent to major roadways and having multiple roads, indicates that management as a wilderness could be difficult. It is separated from the Chumash Wilderness by a corridor with major private land holdings so it could be difficult to effectively manage Antimony with that unit. Motorized activities on the roadways into the area (not part of the unit) could influence management.

Summary of the boundary conditions, needs, and management requirements: The area is bordered on the north by Wind Wolves Preserve, a conservation area operated by the Wildlands Conservancy and by Mil Potrero Highway from Pine Mountain Club to the western extremity.

Other than the portion of the northern boundary that abuts Wind Wolves Preserve this area could be difficult to manage as wilderness. If recommended as wilderness, it would be desirable to adjust the boundary of the unit so as to exclude the area east of San Emigdio Canyon, thereby eliminating considerable conflict with existing developed uses. The remaining western portion of the unit could also benefit from some boundary modification. If the boundary were moved to the north of the main ridgeline from San Emigdio Canyon to San Emigdio Mountain the western portion of the area could be more reasonably manageable as recommended wilderness.

Availability

The availability of potential wilderness areas is described using other resource potential. Pertinent quantitative and qualitative information including current use, outputs, trends, and potential future use and/or outputs for the applicable resources is summarized in this section.

Forest Plan Land Use Zone (40,848 acres): Backcountry (BC) - 2,943 acres, Backcountry Motorized Use Restricted (BCMUR) - 37,156 acres, and Developed Area Interface (DAI) - 749 acres.

Recreation, including tourism: Cross-country hiking could offer a challenge to the experienced hiker and rock climbing in the canyons within the area could provide some challenge and

excitement. There are opportunities for hiking on the Blue Ridge Trail 23W28. Additional hiking and horseback riding opportunities are available on unclassified trails. Snow play and sledding occurs along Mil Potrero Highway in various locations. Hunting and viewing scenery occur in this area. Santiago Canyon provides some opportunities for rock climbing. There are 3.8 miles of hiking trails, 14.4 miles of motorcycle trails, and six small primitive campgrounds (Cherry Creek, Salt Creek, Marian, Caballo, Valle Vista and Pleito Creek). No specific recreation visitation figures are available for Antimony.

Wildlife species, populations, and management needs: Part of the area includes historic roost sites of the California condor. The area contains big game species as mule deer, mountain lion and black bear as well as historic range for Tule elk and pronghorn. Small game species here include fox, quail, band-tailed pigeon, coyote, bobcat and rabbit. Many species of the rodent family live in the area. The area serves as winter deer range. California condors, pronghorn and Tule elk are all species that require large tracts of land in order to maintain viable populations. All three species occupy areas that are part roadless and part roaded. Current monitoring data does not indicate that the presence of roaded areas is precluding or reducing the use of these areas by this wildlife. The recovery plan for the California condor does not recommend the designation of additional wilderness as a means of promoting the recovery of the species. The area provides opportunities for big game hunting (primarily deer) as well as bird hunting (primarily quail and pigeon). California condor, pronghorn and Tule elk have had their historic ranges substantially reduced due to increased human populations and developments. All three species have been re-introduced into areas of their historic range in and adjacent to the Antimony roadless area. Current and projected human uses and developments on National Forest System lands in Antimony are not substantially affecting the habitats of these species. A portion of the area is included in the San Emigdio Mountains Globally Important Bird Area.

Water availability and use: Antimony provides the headwaters for a series of seven watersheds that extend northward onto extensively grazed private land from which surface disturbance and reduction of plant cover reduces the value of the water runoff to the Middle Kern-Upper Tehachapi-Grapevine basin. Private lands account for approximately 67% of the total watershed area. The unit does provide a small quantity of water to a system that eventually reaches the Santa Maria River and is used as a municipal and agricultural water source at numerous locations along the way. Water quality, while good at the upper reaches on public land, will continue to be degraded by downstream development offering little opportunity for improvement by limiting access to the public portions of the watersheds.

Livestock operations: There are three active and one vacant livestock grazing allotment within the unit. These allotments include 13 spring developments and 5.4 miles of fence. The improvements could remain should the area be recommended as wilderness. The Cold Springs allotment has 0.02 acres in this IRA and is not included in the table. The following table displays allotment information for this IRA.

Allotment Name and Status (active/vacant)	Sum of Allotment acres w/in IRA	% of IRA with Allotment Acres
Cowhead-Active	5	0.10
Johnson Canyon-Vacant	702	1.72
San Emigdio-Vacant	25,276	61.78
Santiago-Active	7,847	19.18
Total	33,830	82.68

.

Timber: No lands are identified for commercial timber sale production in Antimony (as per Forest Land Management Plan, Part 3, Standard 1). Vegetation management projects may be conducted for wildlife, fuels, watershed or other needs which could result in wood and special forest products such as mulch. The collection of personal use fuelwood from dead and downed woody material is not permitted in designated wilderness or recommended wilderness land use zones.

There are approximately 40 acres of reforestation from the 2006 Scott Fire on Tecuya Ridge near Frazier Park within the area that require maintenance.

Minerals: A high potential for saleable products such as gravel and building stone exists and there is also a high potential for non-strategic and strategic minerals. There is low potential for phosphate production and geothermal resources. There is moderate to low potential for oil and gas leasing in the area.

There are a number of old, undetermined roads from previous mining and timber harvesting activities. The most obvious are a road down Bradley Ridge, the road accessing the patented mining claim on Antimony Peak and the road from the northern Forest boundary into Black Bob Canyon that accesses Black Bob Mine. There is an old rock quarry near the top of San Emigdio Mountain with a visible scar on the hillside. There are uranium, antimony, gold, and silver mines in the area that are no longer in operation. Black Bob Mine has been reclaimed as part of the Forest Service abandoned mine lands program.

Cultural Resources: Only portions of Antimony have been assessed for heritage and cultural resources with archaeological assessments conducted only for specific projects. The portions surveyed have several significant archaeological resources documented and recorded (a description of these resources can be found under Special Features and Values section of this report).

Authorized and potential land uses: There are no special use authorizations other than the grazing permits described above. Grazing and recreational uses are the highest potential uses in the unit.

Management considerations including fire, insects and diseases, and presence of non-federal land: There is a need for the limited use of mechanical equipment to manage vegetation for ecosystem health and fuel reduction in Pine Mountain Club and alongside roads and intersections of roads with planned fuel breaks.

Approximately 749 acres of this unit are zoned as Developed Area Interface (DAI) indicating a concerted effort to manage vegetation within these acres to protect property adjacent to the unit.

Heavy vegetation modifications are required to meet the objectives to protect life and property and to lower the risk of the structures acting as fuel sources within adjacent communities. The potential resistance to fire control is rated moderate. Recommendation of wilderness adjacent to the private land in Pine Mountain Club, Cuddy Valley, Lake of the Woods, Frazier Park, and Lebec could limit the possibilities for vegetation management activities and the establishment and management of fuel breaks adjacent to this growing urban interface. A shaded fuel break across Tecuya Ridge is in the conceptual planning phase following the objectives of the Forest Land Management Plan Vegetation Management Standard S4.

As necessary, treatment of noxious weed infestations with motorized vehicles/mechanized equipment and/or pesticides would be managed using laws, policies and direction for recommended wilderness.

The area includes infestations of dwarf mistletoe and bark beetle. The infestations have led to higher incidences of tree mortality in some areas of the IRA than in others. The continued impact of the infestations on tree stand health and the potential for spread is of concern. There are approximately 40 acres of reforestation from the 2006 Scott Fire on Tecuya Ridge near Frazier Park within the area.

Need

The following factors were considered in the process used in assessing the need for each potential wilderness area.

Location, size, and type of other existing wildernesses in the general vicinity and their distance from the proposed area: Within a 20 mile radius of Antimony is the San Rafael Wilderness (197,380 acres), Dick Smith Wilderness (67,800 acres), Chumash Wilderness (38,150 acres) and Sespe Wilderness (219,700 acres).

Present visitor pressure on other existing wildernesses, the trends in use, changing patterns of use, population expansion factors, and trends and changes in transportation: Visitation to the nearby Chumash Wilderness is light to moderate. Population growth and urbanization are increasing on the Interstate 5 corridor and wilderness use is expected to increase. Snow play, OHV and hunting pressure are also expected to continue to increase as the population expands towards the area from the Los Angeles Basin.

There were an estimated 63,700 recreation visits to all Los Padres National Forest wilderness areas in FY 2009 (this and the following demographics are from the FY 2009 Forest National Visitor Use Monitoring Report – NVUM). Demographics are 57% male, 43% female; 86% white race/ethnicity; 29% ages 50 – 59 and 9.4% under the age of 20. On a scale of 1 to 10, with 1 being 'hardly anyone there', most (34%) visitors rated their stay in the wilderness as a '4'. About 10.6 % reported a '5' or above towards overcrowding. Most people reported being satisfied with the performance of the Forest Service during their wilderness visit. The average duration of a visit to a designated Forest wilderness was 9.3 hours; median visit duration was 2.6 hours. This indicates mostly day use.

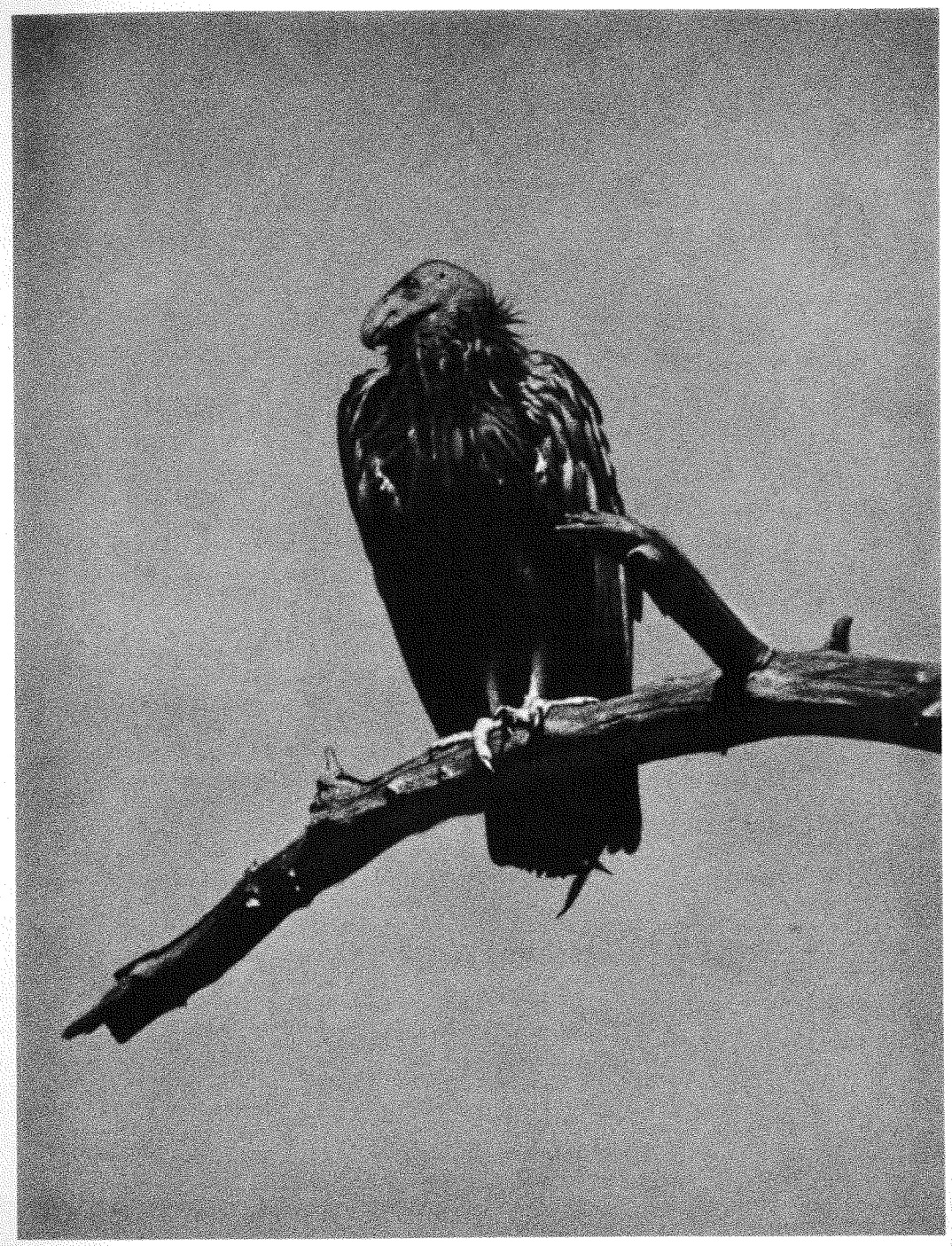
Most of the use in the Los Padres National Forest is short-term day visits. The average Forest visit lasts less than eight hours; over half of the visits last less than four hours. There are a modest number of frequent visitors: almost 11 percent of the visits are made by people who visit at most five times per year (NVUM). Use patterns are usually concentrated in the first few miles of wilderness trails.

The extent to which non-wilderness lands on the NFS unit or other federal lands are likely to provide opportunities for unconfined outdoor recreation experiences: Much of the Mt. Pinos area non-wilderness lands encompass similar landscapes or land areas with a comparable level of development for recreation opportunities. Increasing use from expanding area populations are expected to increase pressures on these areas.

The need to provide a refuge for those species that have demonstrated an inability to survive in less than primitive surroundings or the need for a protected area for other unique scientific values or phenomena: Of particular importance in the Antimony unit are the high density of California condors and their regular flights from east to west along the north facing slopes of this mountain range. Reliable strong winds are crucial to condor movements and the winds blowing southward from the San Joaquin Valley that are lifted up by the San Emigdio Mountains provide excellent soaring conditions for the condor and are the reason this is an important historic condor area. Wilderness recommendation here could preclude wind energy development and its potential impacts to condors. In addition to the value of Antimony as condor habitat, the Forest Land Management Plan identifies the unit as a habitat corridor connecting to the Bitter Creek National Wildlife Refuge to the north.

An area's ability to provide for preservation of identifiable landform types and ecosystems: The higher elevation coniferous forest of the Antimony area and the surrounding mountainous areas of the Mt Pinos Ranger District are unique to the Los Padres National Forest. These higher elevations provide cooler summer temperatures and higher precipitation than the dry coastal chaparral vegetation types typified on by the coastal regions of the Forest.

EXHIBIT M



California Condor

THE CALIFORNIA CONDOR

by Carl B. Koford

Museum of Vertebrate Zoology
of the University of California

Dover Publications, Inc., New York

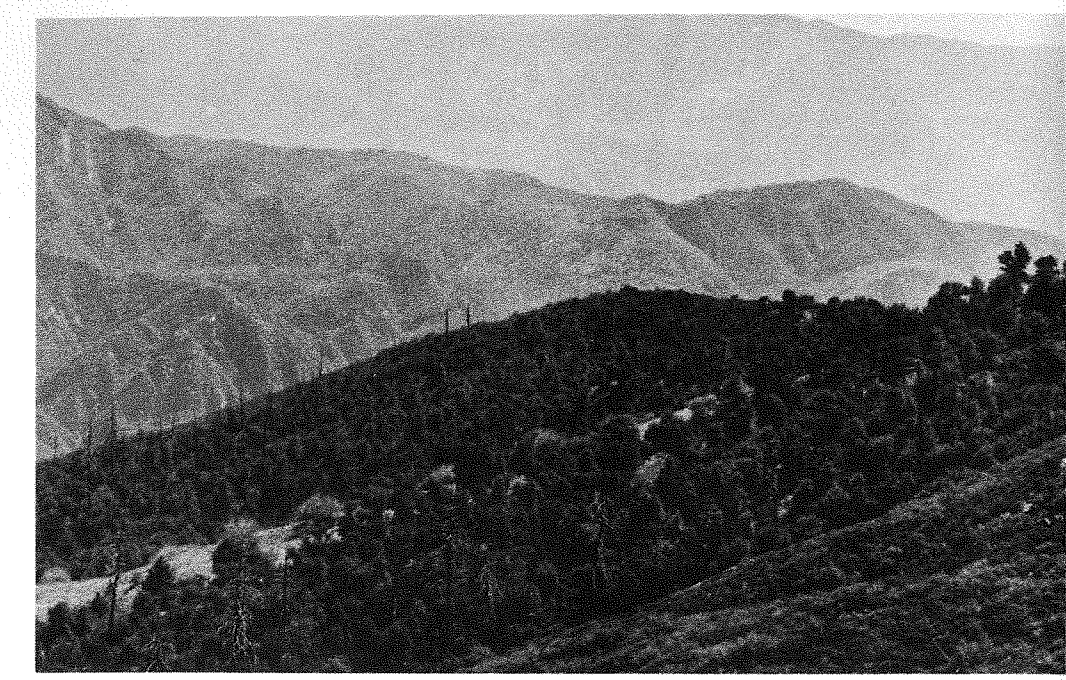


Plate 6. Northeast facing slope with dead big-cone spruces on which Condors often perch and roost. Eleven Condors perched in one of these trees when there was food in the "potrero" at the left.

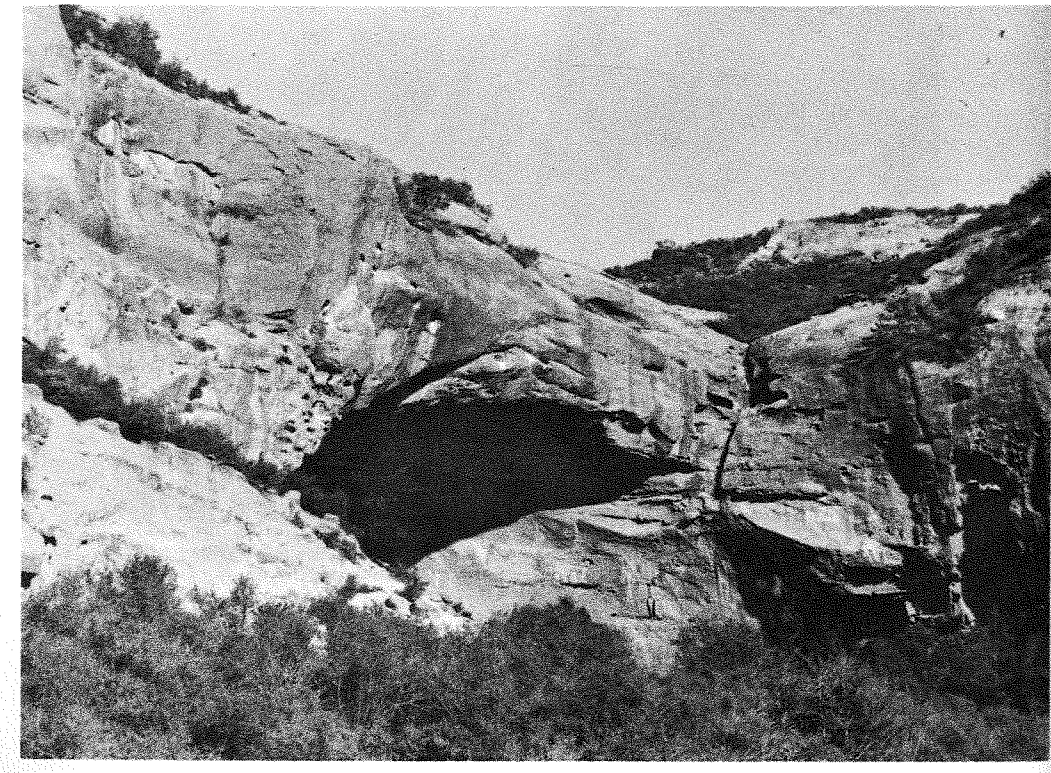


Plate 7. Favorite roosting ledges above the big cave in Hopper Canyon, Ventura County. Whitewashed spots indicate the frequented perches. The crevice in the cliff is the site of an intermittent waterfall; a favorite water hole is at the top of the fall.

Perching and Roosting

Sites and requirements.—Condors alight in order to roost (remain all night), to rest, to approach water, to approach the nest or young, to approach food, or to avoid accident. This listing is in the usual order of perch requirements, from special to general. Condors will perch anywhere in an emergency but they roost only in certain areas on certain types of perches.

With rare exceptions, condors roost in conifers or on cliffs. Whatever large conifers are suitably located in the roosting area are used. In central Ventura County the principal roosting tree is the big-cone spruce (*Pseudotsuga macrocarpa*). At the head of Sisquoc Canyon and in other similar high areas yellow pines (*Pinus ponderosa* and *P. jeffreyi*) are the main roosting trees although sugar pines (*P. lambertiana*) are also used. At McChesney Mountain condors roost in Coulter pines (*P. coulteri*). At Castle Mountain I have seen condors roost only in digger pines (*P. sabiniana*), although Coulter pines are present. Near Parker Mountain big trees (*Sequoia gigantea*) may be used for roosts.

Probably conifers are preferred to hardwoods for roosting because conifers are tall and have relatively few branches to obstruct flight and because the branches are of large diameter. Large branches (3 to 5 inches in diameter) sway little in the wind and they provide a steady base for toes which cannot grasp strongly. Dead conifers are preferred to living trees (plate 6). Dead trees have no foliage to obstruct flight or visibility or to catch the wind and cause the branches to sway. The loss of some branches further decreases the obstruction of flight. Dead branches are stiff so that they bend and sway but little. Parts of the branches of green trees which condors frequent are bare of foliage, polished, and whitened. When the light is subdued, these whitened branches are conspicuous from a long distance.

Other things being equal, trees are preferred to rocks for perching and roosting. Near cliffs the air is turbulent and the perches can usually be approached only from certain directions. Visibility from cliff perches is rarely over 180 degrees. Rock surfaces are more difficult than branches to grasp. In Sespe Canyon, where there are few conifers, I once saw a condor roost on the face of a huge precipice. Instead of perching on a spur of rock, the bird remained on the horizontal trunk of a solitary scrub tree which grew from a crevice.

Near some nests there are no large conifers and the adults consequently roost on cliffs. At nest 4 (plate 18), on three consecutive nights in August, one adult roosted at the tip of a sandstone outcropping near the nest while the other roosted on the same cliff or on a large boulder nearby. At two other nests the parent birds roosted in the nearest group of large conifers, several hundred yards from the nest, rather than on points of the numerous intervening cliffs.

Roosting trees are generally from 40 to 70 feet tall. At the head of Falls Canyon, however, condors roost in pines about 150 feet tall. If the terrain is steep, the perch does not have to be high above the ground. On cliffs and trees condors may roost within 20 feet of the ground below. Roosting immatures often occupy especially low or unsuitable perches.

In trees which are of moderate size and are protected from the wind roosting is normally in the upper third of the tree and frequently on the highest horizontal perch. One night in December I saw seven condors go to roost in a group of big-cone spruces well below the head of a steep canyon. Each bird was on the topmost long branch of a tree or on a higher stub branch. I have seen as many as five condors roost in the top fourth of one favorite tree. At the head of Falls Canyon, where the pines are tall and exposed to the wind, I found condors roosting on the lowest branches, 60 to 80 feet above the ground.

Condors usually roost within two or three feet of the trunk of a tree. Probably this is because the branches are thick, horizontal, and steady there. Stub branches, some no longer than the width of the body of a condor, are often used for roosting. Although condors frequently perch on the tip of a tree, I have not seen one roost there.

Roosting trees are situated above cliffs or on steep slopes where there is a long unobstructed space for taking off downhill, but they are not situated on the very tops of ridges where there is little protection from the wind. At the head of Falls Canyon the uppermost pines are on nearly level ground while those a few hundred yards to the north are on a

30 per cent slope; the lower trees are favored for roosting. In Hopper Canyon, the most frequented group of trees is several hundred feet below the level of the rim of the canyon but immediately above a cliff. In stormy weather trees near the bed of a canyon rather than those high on the side slopes are used. Even in fair weather, condors may roost in the lowest trees of a group. Most trees used for roosting are on north slopes because large conifers grow mainly on north slopes in dry regions, but some roosting canyons face in other directions. Five of the six main roosting areas allow a descending takeoff directly toward the usual feeding grounds.

A favorite roost in the first few months of the year is a cliff near a big cave and an intermittent waterfall in Hopper Canyon (plate 7). The cliff is more than 100 feet high and is approximately vertical. The soft sandstone contains many potholes and ledges suitable for perching and roosting. The main cliff roost faces west-southwest, but just south of it a higher cliff runs westward so that the principal roosting ledges are protected from all winds except those between north and west.

Another cliff where condors roost is in Falls Canyon (plate 8). Here there is a perennial waterfall. This cliff is of coarse gray conglomerate and is more than 300 feet high. It faces northward, but, because of its low position in a branch of Sisquoc Canyon, it is protected from winds. There are many whitewashed points and holes where condors have perched and roosted in past years.

Many persons have seen a few condors roosting on the red sandstone cliffs in lower Sespe Canyon. Some of these cliffs are more than 500 feet high. The rock cleaves into great angular boulders and forms large crevices. The roosting places, made obvious by accumulations of excrement, are primarily in the space immediately below the topmost thick stratum of the cliffs.

For roosting, potholes, and ledges protected by an overhang are preferred to open ledges, especially when there is much wind. In Hopper Canyon, one evening in May, the sky was clear but there was a fair wind. Of seven condors at the main cliff roost, five were on open ledges at sunset, but all five shifted to more protected perches within 45 minutes. Except when the perches on that cliff were crowded, roosting on open ledges was rare. At midnight on a calm moonlight night in April, 1946, when at least 26 condors roosted near this cliff, I saw at least 10 on open ledges (plate 7, left center).

Condors do not roost on top of high cliffs; they shift to lower perches before dark. For example, one evening in March, 1946, I saw 10 condors perched on top of a roosting cliff at sunset (5:35 p.m.). Ten minutes later only one condor was on top of the cliff, and it shifted to a lower perch within 20 minutes. On some evenings all the condors did not leave the top of that cliff until one hour after sunset. These shifts took place even when the evening was calm and mild.

Most condors which roost in trees move downhill before dark whether there is a breeze or not. One cool evening in December, seven condors were perched in a certain group of trees at 4 p.m. By 4:30, four had shifted to other trees. The sun set at 4:45. All the condors shifted to perches farther down the slope by 5:12 p.m. and they were on these same perches at dawn. One afternoon in June there were 20 condors in a group of trees at 5:45 p.m. Ten of these shifted to trees lower on the slope before dark and the others did not change perches. In the late afternoon there is often a decrease in the number of condors perched in any one tree. Many times I saw from four to eight condors perched in a single roosting tree at sunset but found only one or two birds there at dawn.

At any time of day, near a roosting area, a condor may perch for a few minutes, or for an hour or longer, in order to rest and look about. One day in August a favorite tree was occupied by an adult, not necessarily the same one, from 9:25 a.m. to 10:30 a.m., from 10:30 a.m. to 1:45 p.m., and from 2:18 p.m. to 3:15 p.m. On another day a certain tree was occupied from 9:30 to 9:35 a.m., 10:03 a.m. to 11:09 a.m., and 12:50 p.m. to 1:30 p.m. These observations were made during good soaring weather. From three fire lookout stations which are situated near roosts, condors are often seen to alight on perches in the late morning and in the late afternoon but they rarely remain perched more than one hour. Apparently the condors seen are departing from, or returning to, the roost areas. Most resting perches are within a mile or two of known roosting, watering, or nesting sites. Perching at other locations is usually for the purpose of approaching food.

Before commencing to feed on a carcass condors usually perch near it for a time. If typical perches are not available, the bird stands on the ground. Near one carcass on flat ground a rock about one foot high was a favorite perch. Several times I saw condors perch on springy limbs of black walnut or oak trees in approaching food. A photograph by Carl Twisselman shows a condor perched on the top of a fence post near a carcass. The favorite water holes are atop cliffs where there are many suitable perches nearby.

The approach to nests requires the use of perches which are generally lower and less suitable than resting perches. In approaching and leaving one nest low in a canyon, the adults often perched on a small bare branch at the very top of a living canyon live oak. After the young bird leaves the nest, the parents frequently must perch on boulders, small branches, or shrubs in order to feed the youngster. The location of the perch with respect to the nest or young, rather than the physical characteristics of the perch itself, determine whether the perch will be used.

In maneuvering to land at a nest, or near a young bird, a condor may perch briefly on a shrub or on the tip of a branch in order to avoid flying into trees or other obstructions. The perch may be occupied but a moment. When the air is poor for soaring, condors may be forced to land before reaching a good perch. Under these circumstances I have seen them perch on boulders low on slopes and scarcely higher than the chaparral. Condors returning to Hopper Canyon late in the day may perch in the first roost trees that they encounter and remain there all night.

Variation in the use of perches and roosts.—The roost cliff near the big cave in Hopper Canyon was the object of much observation in winter and spring. When many condors were roosting near the cave, the number sometimes changed less than a quarter on successive nights, but at other times the number was doubled or halved on successive nights. The period of use of this cliff for roosting was not exactly coincident with the greatest concentration of condors in that area. In the winter of 1939-40 there were more than 10 condors in that area in December, and more than 20 in early January. Yet, by January 17, I detected no more than four roosting near the cave. In mid-February several condors roosted near the cave each night, but in late May, with a dozen birds still in the area, only one or two roosted near the cave. The following winter (1940-1941), when about 20 condors were in the area, I saw as many as 15 roosting near the cave by January 12. The indication was that the filling of the drinking and bathing pool above the cave attracted condors to that roost. Similar numbers roosted near the cave in March and April. Storms in late April caused the falls to run, and seven or eight condors, all that I could find in the area, roosted near the falls in early May. A week later, when the pool above the falls was nearly dry, the condors watered elsewhere and rarely perched near the cave.

Although I do not know of more than five condors roosting near the big cave when there was no water in the pool, water may not have been the only factor causing them to roost there in winter. On many occasions when there was water in the pool they did not roost near the cave. In winter many potholes contain water and the need of the birds for water is less than in summer. On many days when condors roosted near the cave none approached the water. Nevertheless, it was in the exceptionally dry spring of 1946 that I saw the greatest numbers of condors roosting near the cave and pool.

The typical fluctuation in numbers of perched condors seen near the big cave and water hole in Hopper Canyon on a day in winter is shown in figure 5. The height of the bars indicates the maximum number of perched condors seen at one time in that vicinity in each period of one-half hour. The stippled area indicates the number of immatures identified.

The daily trend shown in figure 5 was typical for all areas consistently used for roosting by large groups of birds. There was much variation in the pattern because various individuals and groups of birds performed different activities. All the condors did not visit water or nests each day. They were hungry to varying degrees. Some young did not forage. At nests I observed that a single individual varied by as much as two hours in its time of commencing flight or shifting to its final perch for the night, even when the weather was uniform.

There is a tendency for individuals away from nests to use the same roosting site for periods of at least several days. For example, in eight days of continuous observation from a single point in August, 1939, I saw one adult, apparently the same individual, roost in an isolated small group of trees on four nights with one break in succession. In the same period, in

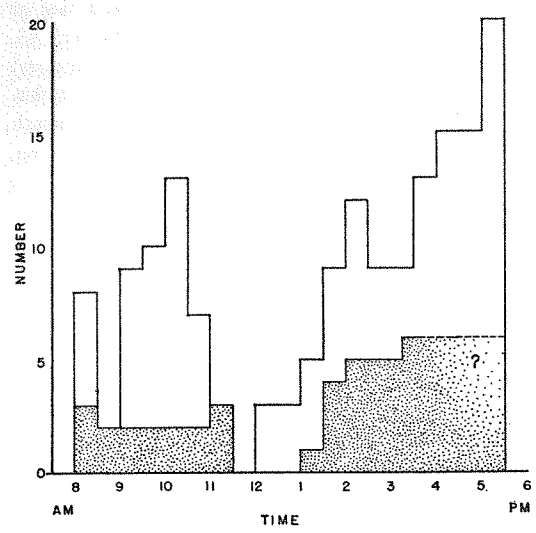


Figure 5. Numbers of Condors seen perched near the big Cave in Hopper Canyon during March 10, 1941.

another isolated group of trees, one or two adults roosted on three non-successive nights. In the latter group of trees I saw from one to three condors roosting on about 25 dates between 1939 and 1941. Usually two adults were there, one or both being on a certain limb, and I saw condors at that spot at some time in every month of the year. Probably a mated pair favored that group of trees.

Often condors do not roost at the same place on successive nights, even when the weather is uniform. In the eight days of observation already mentioned I was able to account for eight roosting condors on three days and for only three on the other days. Even nesting adults roosted at various sites and on some nights they were absent from the vicinity of the nest.

Within a roost area the place of perching and roosting is greatly influenced by the presence of food. On two occasions when the population of Hopper Canyon doubled within a few days (figure 4, April and June, 1946), there was a carcass present in the canyon. Sometimes in winter when there was food in this canyon, half or more of the condors present roosted near the food and the others roosted near the big cave. Once I placed the fresh carcass of a calf near some roosting trees that were rarely used by more than one or two condors at a time. Several condors fed on the calf and 19 roosted within from 200 yards to one-half mile of the carcass. The following day the birds consumed the carcass and that evening only five roosted in the vicinity. At another site which I watched a great deal, several condors fed one day in December and seven roosted within a half mile of the food remains in a group of trees in which I had never before found more than three condors. Dyer (1935:8) reported that seven condors roosted in trees not far from a carcass from which they had been flushed.

Wind influences the use of a roosting place. Strong east winds are frequent in central Ventura County and during these winds I often saw condors perched on west-facing bluffs where I rarely saw them at other times. The largest number of condors that I saw roosting near the big cave in Hopper Canyon (30), and several monthly maxima, occurred on days of strong cold wind. It appeared that the strong wind made the usual tree roosts untenable. Low temperature (to 30°F.) seemed to have no influence on the choice of roosting place.

Rain has no apparent direct effect upon the type of perch used for roosting. Several times I saw condors remain in the usual dead roost trees in spite of rains occurring before, during, or after the night. I did not discover a significant increase in the use of potholes and protected ledges for perching in rain.

In winter and spring, when many condors are in central Ventura County, fog is common in the mountains there. In the Sespe region condors occupy their usual perches and roosts when fog is forming or flowing into the roost canyons. During fog and rain the air is poor for soaring so that condors which shift perches usually alight farther down the slope. Condors which have remained in a group of trees through a long period of fog and rain are often found in the lowest trees of the group.

Effects of disturbance.—On occasions an adult condor perched alone in a tree will allow a man to approach to a distance of 100 feet or less before it takes off. Yet, groups of condors perched in trees may flush before one approaches within 200 yards of them. In general, condors perched at a higher level than the observer flush less readily than those perched at a lower level. They are especially wary when perched on the ground.

When a perched condor is approached, it usually stands with its body in a horizontal position, holds its head low, raises its ruff, and cocks its head at various angles with quick movements. Frequently it will turn about to face the intruder. It may stretch its neck up or down to look over or under intervening obstacles. The wings are raised when alarm increases and the bird then takes off. If the bird does not flush, it usually stands upright within five minutes and it may preen or sit. In calm air condors seem reluctant to take off, and, if approached to within normal flushing distance, they usually walk in and out on the perch branch, nibble twigs, and show other signs of uneasiness.

Immatures normally flush less readily than adults. When a man approaches a mixed group of adults and immatures, the last bird to depart is nearly always a young one. Dyer (1935:8) tells of a young condor which remained perched on a snag until approached to within six feet by a man climbing the tree. Immatures are more variable than adults in their behavior and, on occasions, may be the first to depart when a mixed group is approached.

Sounds, more than motions, disturb condors. Even the buzz of a motion picture camera 100 yards from a perched adult appears to be noticed. Condors which are not flushed by waving of the arms may be flushed by loud talking. I set up a 7 by 7 foot tent in the open only 50 yards from a drinking pool and departed from the area at 2 p.m. Two hours later 13 condors were perched near the pool and they paid no apparent attention to the flapping tent.

Condors may remember disturbances for hours. Many times photographers have hidden themselves in blinds near habitual perches of the birds but no condors perched nearby. The difficulty seemed to be that the bored photographer stepped out or peered out after a few hours and he was seen by soaring condors. A large blind which I did not have to leave all day was successful. When the condors were disturbed near the main roosting cliff and water hole in Hopper Canyon in the evening, none at all or only a few returned to that area in the morning. One evening 16 condors roosted on that cliff while I was in a blind nearby. At night three men visited me and there was some talking and other commotion. Although everyone was out of sight long before dawn, all the condors departed shortly after sunrise.

The amount of disturbance which a condor will tolerate before flushing decreases rapidly late in the day. For example, I stationed myself below a roost cliff at 4:10 p.m. when 18 condors were there. Six soon departed. The others remained until 5:30 p.m., but by 5:55 p.m. only seven remained and only two condors roosted there. On previous days more than a dozen roosted there. Many other times I had a similar experience. Mild disturbances which will not prevent condors from perching or even from drinking may prevent them from roosting. The disturbance threshold for roosting seems to be lower than that for any other daily activity of condors.

One factor leading to a false idea of the tameness of condors is the lag in the reaction of the birds to disturbance. Commonly when a condor does not leave its perch as a consequence of a man close by, it will leave several minutes later after the man has walked several hundred feet away. The delay is most pronounced when the air is poor for flight.

Some of the largest numbers of condors that I saw near the big cave occurred when there had been disturbance near the main tree roosts. Once when I left the vicinity of the cave in the afternoon before all the condors had arrived, about 10 condors roosted near the cave and 10 at the main tree roost. On two occasions in spring when people disturbed the condors at both of the main roosts in Hopper Canyon on two days in succession, the number of condors detectable in the area dropped from about 20 to a maximum of four or five. A day or two later many condors were back at the usual roosts. One man, by disturbing the birds at critical places late in the day, can prevent roosting over an area of several square miles.

Summary.—For perching, condors require steady places with good footing which are easy to reach or to leave by air and where there is little disturbance by man or enemies. Roosts, in addition, must be high above the ground yet protected from strong winds, utterly free from disturbance, and suitably located with respect to food, water, nests, and perhaps to other condors. Any adequate program for conserving this species must provide for the preservation of a sufficient number of perching and roosting places as well as for the protection of nest sites.

EXHIBIT N

California Condor

California Condor (Gymnogyps californianus)

Management Status

TNC Heritage Status Rank: G1S1

Federal: Endangered; critical habitat designated September 24, 1976 (41 Federal Register 41914)

State: Endangered

Other: None

General Distribution

Designated Critical Habitat for the California condor encompasses nine separate units from Monterey to Kern, Tulare, and Ventura counties (41 Federal Register 41914).

From 100,000 to 10,000 years ago, California condor ranged widely; with the extinction of the large Pleistocene mammals, the species declined in range and numbers. Condor remains reveal that the species once ranged over much of western North America, and as far east as Florida. Until about 2,000 years ago, the species nested in west Texas, New Mexico, and Arizona (U.S. Fish and Wildlife Service 1984). When European settlers arrived on the Pacific coast of North America in the early 1800s, California condors occurred from British Columbia to Baja California, and also occasionally ranged into the American southwest.

Historically, California condor occurred in the Coast Ranges of California from Santa Clara and San Mateo Counties south to Ventura County, and east to the western slope of the Sierra Nevada and Tehachapi Mountains. It occurred primarily from sea level to 9,000 feet (2,743 meters) and nested at 2,000-6,500 feet (610-1,981 meters) (USDA Forest Service 2001, Zeiner and others 1990). Almost all of the historic nest sites used by California condors are located on the Los Padres, Angeles, and Sequoia National Forests (U.S. Fish and Wildlife Service 2001).

In 1987, after years of steady population declines and local extirpations, the last nine wild condors were captured on the Los Padres National Forest and brought into captivity. Since that time, successful captive breeding programs have been ongoing at the Los Angeles Zoo, the San Diego Wild Animal Park

(Stephenson and Calcarone 1999), and the Peregrine Fund's World Center for Birds of Prey (Boise, Idaho) (U.S. Fish and Wildlife Service 2001).

In January 1992, the first two California condors were reintroduced into the Los Padres National Forest's Sespe Condor Sanctuary (Stephenson and Calcarone 1999). Since 1992, condor releases have occurred at other locations on the Los Padres National Forest. Currently, condors released as part of the ongoing condor reintroduction program in California are found primarily on the Los Padres National Forest and surrounding lands (U.S. Fish and Wildlife Service 2001).

California condor releases in northern Arizona began in December 1996 at the Vermillion Cliffs, with additional releases taking place each year, including one release at Hurricane Cliffs in northern Mojave County. There are approximately 24 condors in the wild in northern Arizona (U.S. Fish and Wildlife Service 2001). Approximately 97 condors remain in captivity at the three breeding facilities (Stephenson and Calcarone 1999).

Distribution in the Planning Area

The current distribution of California condor on National Forest System lands in southern California is considered to be all of the Los Padres National Forest and the western half of the Angeles National Forest (USDA Forest Service 2000), with some individuals occasionally visiting the Sequoia National Forest. Several sightings of condors have been made on the San Bernardino National Forest since 2002 in the front country above San Bernardino, and at Keller Peak Lookout (Loe pers. comm.). Since 1937, two California condor sanctuaries have been established on the Los Padres National Forest (see Conservation Considerations below).

All California condor releases in California as part of the condor reintroduction program have occurred on the Los Padres National Forest. Between 1992 and 1996, California condors were released into the following locations on the Los Padres National Forest: Sespe Condor Sanctuary (Ventura County), Lion Canyon, on Sierra Madre Ridge near the San Rafael Wilderness Area (Santa Barbara County), Castle Crags (San Luis Obispo County), and the Ventana Wilderness south of Monterey Bay (Monterey County). California condors reintroduced as part of the recovery program are found primarily on the Los Padres National Forest and surrounding lands (U.S. Fish and Wildlife Service 2001).

As of February 1999, there were reportedly 28 wild condors in the vicinity of the Los Padres National Forest release sites (Stephenson and Calcarone 1999). As of January 2001, U.S. Fish and Wildlife Service (2001) estimated the population to be 25 California condors in southern and central California. Currently, there are approximately 42 free-ranging condors in central and southern California (Freel pers. comm.).

Systematics

California condor is a member of the Cathartidae family (new world vultures). This family includes the

sympatric turkey vulture (*Cathartes aura*) and Andean condor (*Vultur gryphus*), which is closely related to California condor (U.S. Fish and Wildlife Service 1984).

Natural History

Habitat Requirements

California condor nesting sites are typically located in chaparral, conifer forest, or oak woodland communities. Historically, condors nested on bare ground in caves and crevices, behind rock slabs, or on large ledges or potholes on high sandstone cliffs in isolated, extremely steep, rugged areas. Cavities in giant sequoia (*Sequoiadendron giganteum*) have also been used (U.S. Fish and Wildlife Service 2001). The nest site is often surrounded by dense brush.

An evaluation of 72 California condor nest sites found that: (1) entrances were large enough for the adults to fit through; (2) they had a ceiling height of at least 14.8 inches at the egg position; (3) floors were fairly level with some loose surface substrate; (4) the nest space was unconstricted for incubating adults; and (5) there was a nearby landing point. The appearance of many nest sites suggests that they have been long used, perhaps for centuries, whereas other apparently suitable sites in undisturbed areas show no signs of condor use (USDA Forest Service 2001).

Condors often return to traditional sites for perching and resting. Traditional roost sites include cliffs and large trees and snags (roost trees are often conifer snags 40-70 feet tall), often near feeding and nesting areas. Condors may remain at the roost site until midmorning, and generally return in mid- to late afternoon (USDA Forest Service 2001).

Most foraging occurs in open terrain of foothills, grasslands, potreros with chaparral areas, or oak savannah habitats. Historically, foraging also occurred on beaches and large rivers along the Pacific coast (U.S. Fish and Wildlife Service 2001). Water is required for drinking and bathing (Zeiner and others 1990).

Reproduction

California condors typically breed every other year, but can breed annually if they are not caring for dependent young. Because of the long period of parental care, it was formerly assumed that California condor pairs normally nested successfully every year. However, this pattern seems to vary, possibly depending on the time of year that the nestling fledges. If nestlings fledge relatively early (in late summer or early fall), parents may nest again in the following year; however, late fledging probably inhibits nesting in the following year (USDA Forest Service 2001).

California condors become sexually mature beginning at about 5 years of age. Courtship and nest site selection by breeding California condors occur from December through the spring months (see Habitat Requirements above for a description of nesting habitat and nest site characteristics).

California condors usually lay a single egg between late January and early April. The egg is incubated by both parents and hatches after approximately 56 days. Both parents share responsibilities for feeding the nestling. Feeding usually occurs daily for the first 2 months, then gradually diminishes in frequency. Juvenile condors leave the nest at 2-3 months of age, but remain in the vicinity of the nest and under their parents' care for up to a year.

The chick takes its first flight at about 6-7 months of age, but may not become fully independent of its parents until the following year. Parents occasionally continue to feed a fledgling even after it has begun to make longer flights to foraging grounds (USDA Forest Service 2001).

Survival

Specific data on California condor survival are lacking. Although the causes of decline in this species are probably diverse, the decline appears to have resulted more from mortality than from reproductive parameters (U.S. Fish and Wildlife Service 1984).

Several California condors have died in the wild since the beginning of the release program. In California, four captive-raised individuals died after interactions with transmission lines, two drowned in steep-sided natural water courses, one died after consuming ethylene glycol, and one died from malnutrition and dehydration. Fourteen condors have been returned to captivity for behavioral reasons. Three birds died after being brought into captivity because of malnutrition, cancer, and a gunshot wound. Eight other birds have disappeared and are presumed dead (U.S. Fish and Wildlife Service 2001).

Dispersal

Juvenile California condors remain with their parents for up to a year. Yearling and older subadult condors will often follow adults throughout their range and have been documented moving from the Los Padres to the Sequoia National Forest and other outlying areas. Birds have also been documented moving from coastal Santa Barbara county to the Sequoia National Forest in the Sierra Nevada and as far north as Bishop on the east side of the Sierras (Freel pers. comm.).

Migration

The California condor is nonmigratory (U.S. Fish and Wildlife Service 1984).

Daily/Seasonal Activity

See Reproduction above and Diet and Foraging and Territoriality/Home Range below.

Diet and Foraging

California condors are opportunistic scavengers, feeding exclusively on the carcasses of dead animals. Typical foraging behavior includes long-distance reconnaissance flights, lengthy circling flights over a carcass, and hours of waiting at a roost or on the ground near a carcass.

California condors locate food by visual rather than olfactory cues (Stager 1964), and require fairly open areas for feeding, allowing ease in approaching and leaving a carcass. California condors typically feed only 1-3 days per week (U.S. Fish and Wildlife Service 2001).

Seasonal foraging behavior shifts may be the result of climatic cycles or changes in food availability. California condors maintain wide-ranging foraging patterns (i.e., at least 2.8 to 11.6 square miles [7.3-30 square kilometers]) (Zeiner and others 1990) throughout the year, an important strategy for a species that may be subjected to unpredictable food supplies.

Historically, condors probably fed on mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), pronghorn antelope (*Antilocarpa americana*), and various marine mammals. More recently, domestic livestock made up the majority of their diet. However, condors have been recently observed feeding on dead elephant seals along the Monterey coast in a few sites generally inaccessible to people, and on a lion-killed elk at Fort Hunter-Liggett adjacent to the Los Padres National Forest (Freel pers. comm.).

Territoriality/Home Range

There is no specific information available about territoriality or home range for California condor. California condors are capable of extended flights (more than 100 miles in a day), and the birds from the Ventana, Lion Canyon, and Sespe release sites in California often intermingle, and then return to their release areas. California condors from northern Arizona have flown more than 200 miles to locations in Colorado and Wyoming, and then returned (U.S. Fish and Wildlife Service 2001).

Predator-Prey Relations

There is very little information available about predation on California condor. However, known predators of California condor include coyote (*Canis latrans*) and golden eagle (*Aquila chrysaetos*) (U. S. Fish and Wildlife Service 2001).

Inter- and Intraspecific Interactions

California condors sometimes roost in groups. Roosts likely serve a social function, as several birds occupying the same roost often leave together (U.S. Fish and Wildlife Service 2001).

Population and Habitat Status and Trends

Historical abundance of California condors is difficult to determine, but all estimates have indicated an

ever-declining population. Koford (1953) estimated a population of about 60 individuals in the late 1930s through the mid-1940s, when the species' range was reduced to a wishbone-shaped area in California that included the coastal mountain ranges of San Luis Obispo, Santa Barbara, and Ventura Counties; a portion of the Transverse Range in Kern and Los Angeles Counties; and the southern Sierra Nevada in Tulare County. In 1967, California condor was included on the first official federal list of endangered species. Subsequently, passage of the Endangered Species Act of 1973 further reinforced protection of the species. In 1982, the population reached a low of 22 individuals (21 in the wild and 1 in captivity) (U.S. Fish and Wildlife Service 2001).

There are 97 condors now living in the wild in California, Arizona, and Baja California, Mexico and 124 in captivity at the Los Angeles Zoo, San Diego Wild Animal Park and the Peregrine Fund's World Center for Birds of Prey in Boise, Idaho. The goal of the California Condor Recovery Plan is to establish two geographically separate populations: one in California and the other in Arizona, each with 150 birds and at least 15 breeding pairs (U.S. Fish and Wildlife Service Press Release 2004).

The first attempts at nesting by birds re-introduced into the wild in southern California occurred in 2002. Of the three nesting attempts, all 3 nestlings died. One likely died from eating microtrash. In 2003, one egg was laid and hatched, but the nestling died. In 2004, 3 pairs of California condors attempted nesting. One condor chick fell and broke its wing, and subsequently died. Another was retrieved from the wild and taken into captivity. However, the last condor chick fledged, the first successful fledging in southern California since the reintroduction of condors to this area.

From the beginning of the California condor reintroduction program, it was recognized that the problem of unsustainable high mortality rates as a result of lead poisoning needed to be addressed through an intensive management program of feeding and monitoring until such time as the lead contamination issue could be resolved on a large scale. As the captively-produced, released condors have matured and gained experience in the wild, they have begun to forage on carcasses not provided by field crews. Concurrent with this maturation and between 1997 and 2003, five condor deaths occurred due to acute lead poisoning, and more than two dozen condors were brought into captivity because they displayed signs of lead poisoning or had elevated lead residues in their blood. The current feeding program provides the condors with several "clean" carcasses every three days. In addition, the feeding sites are carefully monitored whenever birds are present to observe behavior and document bird health and condition. Birds are also tracked daily through radio telemetry on an hourly basis during daylight hours. Constant (daily) monitoring enables program biologist to recognize and treat birds that, despite the feeding program, still become poisoned by lead from other scavenged carcasses.

Threats and Conservation Considerations

Factors that led to California condor's century-long decline included illegal collection of adults and their eggs; poisoning by substances used to eradicate livestock predators; poisoning from ingestion of lead fragments of bullets embedded in animal carcasses; other forms of poisoning (DDT, cyanide, strychnine, compound 1080, antifreeze from car radiators); shooting; and collisions with structures such as

transmission lines. In addition, the roads, cities, housing tracts, and weekend mountain retreats of modern civilization have replaced much of the open country condors need to find food. Their slow rate of reproduction and maturation undoubtedly make the California condor population as a whole more vulnerable to these threats (Stephenson and Calcarone 1999, U.S. Fish and Wildlife Service 2001).

Reintroduced California condors have died from lead poisoning (resulting from ingestion of fragments of bullets and shot found in hunter-killed animals); collision with overhead transmission lines; ingesting toxins such as ethylene glycol (a primary ingredient of antifreeze); bullet wounds; predation by coyotes and golden eagles; ingestion of trash (bottle caps, aluminum pull tabs etc.); and unknown causes. The possibility of genetic problems due to the species' perilously low population size in recent years remains a concern.

Potential threats to California condors from resource management activities on National Forest System lands include modification or loss of habitat or habitat components (primarily large trees) and behavioral disturbance to nesting condors caused by vegetation treatment activities. Also, facilities maintenance (including roads), recreation, or other associated activities within occupied habitat could prevent or inhibit nesting or lead to nest failure (USDA Forest Service 2001).

Recovery plans have been written and revised in 1976, 1978, 1984, and 1996. Recovery objectives on National Forest System lands (primarily the Los Padres National Forest) include: (1) establish a self-sustaining wild population, through reintroduction of captive-reared condors, of at least 150 individuals within California that includes at least 15 nesting pairs; (2) identify parcels of Critical and Essential habitat for acquisition, and pursue acquisition of these lands as funds allow; (3) provide for maintenance and protection of nesting, roosting and foraging habitat on National Forest System lands; and (4) cooperate with the U.S. Fish and Wildlife Service and other organizations in conducting annual reintroductions of condors on National Forest System lands (USDA Forest Service 2000).

National Forest System lands in southern California presently support suitable California condor habitats; some areas may be included as potential release sites or foraging areas in the future. Within California, all known historic nesting habitat is on National Forest System lands (Los Padres, Angeles, and Sequoia National Forests), with a majority of foraging habitat located on private lands adjacent to the forests in Santa Barbara, Ventura, Kern, Monterey, San Luis Obispo, and Los Angeles Counties (USDA Forest Service 2000). Presently, sufficient nesting, roosting, and foraging habitat exists in California and the southwestern states to support a large number of California condors, if density-independent mortality factors, including shooting, lead poisoning, and collisions with human-made objects can be controlled.

Currently, condors reintroduced as part of the recovery program are found primarily on the Los Padres National Forest and surrounding lands (U.S. Fish and Wildlife Service 2001). The Los Padres National Forest established the Sisquoc Condor Sanctuary in 1937, encompassing 1,193 acres (483 hectares) in Santa Barbara County, to protect a roost site, bathing pool, and presumed nest site. The Sisquoc Condor Sanctuary is closed to all nonpermitted entry. The Sespe Condor Sanctuary, also on the Los Padres

National Forest in Ventura County, was established in 1947 and expanded in 1951; it encompasses approximately 53,000 acres (21,448 hectares). It is closed to all non-permitted entry with the exception of two narrow travel corridors that allow hikers and horseback riders to pass through the area. Both sanctuaries are included as designated critical habitat. Designated wilderness areas encompass large areas of the Los Padres National Forest, providing broad protection of habitat for the California condor (U.S. Fish and Wildlife Service 2001).

During the mid-1980s, the U.S. Fish and Wildlife Service acquired the 2,400-acre (971-hectare) Hopper Mountain National Wildlife Refuge as a buffer for the Sespe Condor Sanctuary, and the 14,000-acre (5,666-hectare) Hudson Ranch (now Bitter Creek National Wildlife Refuge), an important foraging area for California condors in the southern San Joaquin Valley. The protection of these areas was based on the documented use of nesting, roosting, and foraging habitat by multiple generations of wild condors. These areas contain the most important habitat components essential to the survival of California condors in the wild. Released California condors are expected to be drawn to these areas. Approximately 250,000 acres (101,172 hectares) of designated critical habitat occurs on National Forest System lands; five of the nine separate units of critical habitat are located on the Los Padres National Forest (U.S. Fish and Wildlife Service 2001).

The existing wild condor population is monitored daily throughout the year by U.S. Fish and Wildlife Service, USDA Forest Service, and Ventana Wilderness Society personnel. All projects occurring within the known range of California condor are evaluated in Biological Assessments prior to approval of any activities. Formal consultation with the U.S. Fish and Wildlife Service is conducted when "may affect" situations occur.

Keys to the success of the California condor recovery program include successful breeding in the wild and maintenance of an ample uncontaminated food supply. The first successful nesting of released California condors occurred in 2001, and three additional successful nesting attempts occurred in 2002. Currently, supplemental food is hauled in for free-ranging birds. It remains to be seen if the natural supply of large carrion is sufficient to support a stable condor population (Stephenson and Calcarone 1999).

The following is a list of conservation practices that should be considered for this species:

- Protect suitable nesting cliffs from human disturbance.
- Educate hunters regarding the importance of controlling lead in carcasses.
- Cooperate with other state and federal agencies as well as NGOs in recovery of the condor.
- Educate the public and other agencies on the benefits of using environmentally safer antifreeze.
- Continue to retrofit transmission and other towers/poles on the four southern California forests to make them raptor safe.
- Educate the public regarding the hazards to condors and other species associated with trash.
- Manage suitable habitat to produce healthy deer, bighorn sheep and elk herds.

Evaluation of Current Situation and Threats on National Forest System Lands

The California condor is an endangered species and will be consulted on whenever a project has potential to affect the species or its habitat. Viability is a definite concern due to the extremely small population and vulnerability to many factors on National Forest System lands and other lands. Greatest among these are shooting, lead contamination, collision with overhead transmission lines and towers, trash, and general human disturbance. Viability is dependent upon intensive management of population and habitat on federal, state and private lands along with an intensive re-introduction program that is well established.

Measures implemented to reduce risks to the California condor include the following: (1) Recent conversion from ethylene glycol to propylene glycol antifreeze has been conducted on all four southern California national forests to help preclude antifreeze as a source of potential effect. Educational information on lead and antifreeze issues is also being produced to help improve public awareness (USDA Forest Service 2000). (2) All communication sites and powerlines in high use areas are being retrofitted with raptor guards to help minimize the potential for electrocution. Additionally, negative conditioning is being used prior to release to train California condors to avoid transmission lines (Stephenson and Calcarone 1999). (3) Fire suppression guidelines and emergency field procedures have been prepared to help protect the California condor. (4) Historic and new nest sites that become occupied by nesting condors will have a seasonal 1.5-mile (2.4-kilometer) buffer from roads or other high noise- producing activities, and a 0.5-mile (0.8-kilometer) buffer from nonmotorized trails or general forest uses. Other special protective measures are also incorporated into fire suppression and recreation activities around occupied sites (USDA Forest Service 2000).

In 2003, the Los Padres National Forest, Ventana Wilderness Society, and the Los Padres Forest Association tried an incentive program to reduce lead in the environment. These organizations formed a cooperative partnership to establish a rebate program for hunters who used reduced-lead bullets. Publicity for this program was developed, and articles appeared in major newspapers, such as the Los Angeles Times. Radio interviews publicizing the program were aired on several radio stations. Hunter response appeared favorable, and there were a few hunters who reported that they had already tried switching to the lower-lead bullets because they believed in responsible hunting practices. In 2004, the hunting season in the D13 zone was curtailed because of major fires during the hunting season. There were seven rebate requests. Due to the favorable publicity that was generated and the initial response from hunters, it is apparent that this effort has potential to reduce the amount of lead in the environment, though substantial work remains to achieve desired conditions for California condor habitat.

Some California condors have died as a result of collisions with power lines. As a result of wildland fire in the Piru watershed, Southern California Edison has retrofitted some of the power lines on the Sespe Oil Fields, and this effort indirectly benefits California condors.

Because ‘flyways’ are an important habitat component for California condors and are where the risk of death is high due to collisions with man-made objects, recent conservation work has focused on

gathering information regarding the location and use of these flyways. These 'high use flyways' are being determined based on historic observations of frequent use (ocular, radio and aircraft tracking from the wild population of the 1980s), recent observations of release birds, and through radio and satellite telemetry. Satellite tracking allows for both real time and elapsed time movement monitoring that can be used to locate birds, and to identify areas being used by the birds for nesting, roosting, and foraging. This work is helping the Forests and cooperators set priorities for bringing utility lines and communication sites up to raptor safe standards.

Another problem for condors and their young has been the ingestion of small pieces of garbage (bottle caps, glass etc.) by the adults, which are fed to the nestlings. The nestlings are not able to pass the garbage and mortality has occurred in nests on the Forest. The Angeles National Forest and Los Padres National Forest have been working to reduce this potential threat using volunteers and fire crews to clean up problem areas.

Environmental education efforts completed since 2002 for the California condor include the development and use of a multi-media display. This display has been used at the Pacific Grove Museum of Natural History in Pacific Grove, California and has been seen by thousands of museum visitors.

Habitat improvement work completed for the California condor (Freed pers. comm.) includes:

- Removal of micro-trash on at least 16 occasions, 13 on the Los Padres National Forest and 3 on the Angeles National Forest.
- After the Piru Fire approximately 400 utility poles were replaced relating to 5 miles of distribution lines, fitted with anti-perching devices and anti-collision (flight diverters) devices. Some of the poles belonged to local oil companies, and others were property of southern California Edison.
- Installation of raptor guards and anti-perching devices has been completed within 5 miles of the Sespe Condor Refuge.
- Raptor guards and anti-perching devices are being used at communication sites to protect birds on the Santa Clara Divide Road on the Angeles National Forest.

Based on the above analysis, this species has been assigned the following threat category:

5. Uncommon in the Plan area with substantial threats to persistence or distribution from Forest Service activities.

Viability Outcome for National Forest System Lands

Predicted Outcomes by Alternative

1	2	3	4	4a	5	6
B	B	B	B	B	C	B

Since this species and its key habitat are so intensively managed, there would be little difference between Alternative 1-4a and 6. However, the magnitude of human disturbance and vehicle use and special use accommodation under Alternative 5 may be sufficient to influence the viability outcome for the condor. With potentially much greater motorized vehicle use, it will be much more difficult to manage human disturbance and shooting. The chances of lead in carcasses fed on by condors will be much more widespread. The emphasis in 4a on managing dispersed use to maintain the natural setting will benefit the condor.

The California condor is listed under the Endangered Species Act of 1973, as amended, as endangered, which assures that any new project proposed in or near its habitat will undergo considerable analysis and be subject to consultation with the U.S. Fish and Wildlife Service at the site-specific level.

Viability Outcome for All Lands

Predicted Outcomes by Alternative

1	2	3	4	4a	5	6
C	C	C	C	C	D	C

Shooting, lead poisoning, and collisions with human-made objects are major threats on private lands as well as national forest lands. Private land development for housing and agriculture will reduce the amount of suitable habitat. The sum total off effects from on and beyond National Forest System lands is likely to result in a declining habitat base and increased human disturbance. The increased likelihood of shooting, lead contamination, conflicts with special use facilities and human disturbance in Alternative 5 is substantial enough to affect the viability outcome for the condor.

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