September 27, 2022

U.S. Forest Service
Attn: Supervisor Christopher Stubbs
1980 Old Mission Dr.
Solvang, CA 93463

Re: Ecological Restoration Project

Dear Mr. Stubbs:

Thank you for this opportunity to provide scoping comments for the proposed Environmental Analysis (EA) the Unites States Forest Service (U.S. Forest Service) is preparing for the Los Padres National Forest (LPNF) Ecological Restoration Project (Project).

The undersigned organizations support efforts to improve ecosystem health and protect communities from wildfires, and we work to ensure that vegetation treatment activities are undertaken with minimal impacts to wildlife, roadless areas, wilderness, water supplies, and 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 firesafe material and design as the most effective ways to protect communities from wildfire.

We have reviewed the Project Description and have several concerns about the proposed action and the U.S. Forest Service's stated intention to only prepare an EA instead of an

Environmental Impact Statement (EIS)—short shrifting the environmental review mandated by the National Environmental Policy Act (NEPA). 42 U.S.C. § 4321.

The Project allows the U.S. Forest Service to log trees and clear native chaparral habitat across 235,000 acres of the LPNF—covering the Mt. Pinos, Santa Lucia, Monterey, and Santa Barbara Ranger Districts, significantly impacting over 63,000 acres of designated critical habitat and 19 listed species protected under the Endangered Species Act (ESA). This is the largest scale project ever proposed for the LPNF and the potential for significant impacts is nothing short of certain, as detailed in our letter below, and evidenced by letters submitted by experts such as Lawrence Hunt (see Exhibit 1), Pam De Vries, and Monica Bond.

Yet, the U.S. Forest Service has stated that it only intends to prepare an EA, a limited environmental review appropriate for projects very different from this one, that are not likely to have significant effects or where the significance of the effects is unknown. 40 C.F.R. § 1501.3(a)(3). This is particularly surprising when in 2018 the U.S. Forest Service prepared an EIS for the Monterey Ranger District Strategic Community Fuelbreak Improvement Project that covered a mere 542 acres in the Ventana Wilderness section of the LPNF and had just a fraction of the significant impacts this one will likely have.

For example, the Project's potential to substantially alter and impact 134,000 acres of Inventoried Roadless Areas (IRA) and 92,000 acres of potential wilderness areas on its own require the U.S. Forest Service to prepare and EIS pursuant to 36 C.F.R. § 220.5(a).

As if that's not enough to require an EIS, the Project's logging, mastication and other vegetation removal activities spanning thousands of acres will have a broad scope of likely significant impacts, also detailed below and supported by expert evidence. These include:

- Impacts to 14 species and 64, 000 acres of critical habitat under the ESA
- Impacts to U.S. Forest Service Sensitive Plant Species
- Impacts to Migratory Bird Species protected under the Migratory Bord Treaty Act
- Impacts plant species protected under the ESA
- Impacts to Forest Service Sensitive Plant Species
- Impacts to outdoor recreation
- Impacts soil and water resources
- Impacts to climate change
- Impacts to community fire risk

In addition, the Project is inconsistent with the National Forest Management Act and the Land Management Plan (Forest Plan) for the LPNF, and the cumulative effects of this Project with past, present and future U.S. Forest Service proposals will be unquestionably significant.

We hereby submit the following comments, detailing the significance of the environmental effects of the Project and reasons why the U.S. Forest must prepare an EIS in order to comply with NEPA.

1. THE U.S. FOREST SERVICE MUST PREPARE AN EIS BECAUSE THE PROJECT WILL SUBSTANTIALLY ALTER THE UNDEVELOPED CHARACTER OF AN INVENTORIED ROADLESS AREA AND A POTENTIAL WILDERNESS AREA.

The scoping notice letter and comment extension issued on August 18, 2022 stated that the U.S. Forest Service intends to only prepare a draft EA for the Project. However, the U.S. Forest Service regulations at 36 C.F.R. § 220.5(a) specifically identify two classes of actions that "require environmental impact statements." Of these two classes of actions, Class 2 actions include those "that would substantially alter the undeveloped character of an Inventoried Roadless Area (IRA) or a potential wilderness area." *Id*. As detailed below, the Project qualifies as a Class 2 action due to Project activities that will substantially impact and alter the undeveloped character of 104,337 acres of IRAs and approximately 92,221 acres of potential wilderness areas in the Project Area. The Project activities that would occur in the IRAs and potential wilderness areas (described in detail below) include logging, mastication, pile burning, grazing, and other vegetation removal activities.

Prior U.S. Forest Service decisions to harvest timber in roadless area have been deemed significant by the court and required site-specific EISs. See, e.g., *Smith v. U.S. Forest Service*, 33 F.3d 1072, 1079 (9th Cir. 1994). Courts have also held that logging in roadless areas is significant because roadless areas have specific attributes such as water resources, soils, wildlife habitat, and recreation opportunities, that possess independent environmental significance and must be analyzed as required by NEPA and 36 C.F.R. § 220.5(a). *Lands Council v. Martin*, 529 F. 3d 1219 (9th Cir. 2008). Impacts to roadless areas are also significant because of their potential for designation as wilderness areas under the Wilderness Act of 1964, 16 U.S.C. §§ 1131–1136. *Id*. at 640; *Smith*, 33 F.3d at 1078–79.

Project activities that result in decreased acreage, as detailed below, significantly affect potential wilderness area attributes and require an EIS. *Cascadia Wildlands v. U.S. Forest Service* 937 F. Supp. 2d 1271 (D. Or. 2013). Accordingly, the Project's impacts to IRAs and potential wilderness areas require the U.S. Forest Service to prepare an EIS. 36 C.F.R. § 220.5(a)(2).

A. The Project Would Substantially Alter the Undeveloped Character of Several IRAs.

The Project Area includes approximately 104,337 acres of IRAs throughout the LPNF—18% of all IRA land within the LPNF administrative boundary (and which is not within designated wilderness areas) which would be significantly impacted by Project activities that would substantially alter the undeveloped character of a roadless area, such as logging, mastication,

and other vegetation removal activities. [1] There are 34 IRAs that would be substantially altered by Project activities, each with more than 80 acres of overlap with the Project Area (Figure 1). Eleven IRAs have 25% or more of their total area located within the Project Area (Table 1).

The Tepusquet Peak IRA (located entirely within the Santa Lucia Ranger District) would be impacted more than any other IRA in the LPNF. Nearly 99% of this IRA is included within the Project Area (Table 1), with 3,027 acres (54% of the Project Area's overlap with the Tepusquet IRA) identified as a Forest Health Treatment Unit (FHTU) and 2,567 acres (46% of the Project Area's overlap with the Tepusquet IRA) identified as a Fuel Break Defense Zone (FBDZ). In other words, 44% of the entire Tepusquet Peak IRA could be subjected to the ground-disturbing and intensive vegetation removing activities allowed in FBDZ areas. The FBDZ areas are not ostensibly for "forest health," and the activities allowed within them would not be considered "ecological restoration" as detailed throughout this letter.

Consider that the majority of the Tepusquet Peak IRA within the Project Area is classified as chaparral or coastal sage scrub (2,107 acres of "mixed chaparral," 1,097 acres of "coastal scrub," and 268 acres of "chamise-redshank chaparral") according to the California Wildlife Habitat Relationship (CWHR) System classifications within the Existing Vegetation (EVeg) feature class of the Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) dataset created by the U.S. Forest Service (Figure 2). While a little over 3,000 acres is proposed as FHTU, only 2,074 acres (37% of the portion of Tepusquet Peak IRA within the Project Area) is classified as "coastal oak woodland" or "blue oak woodland" according to this dataset. The remaining 48 acres of the portion of the Tepusquet Peak IRA within the Project Area (i.e., not woodland or chaparral/coastal sage scrub) is classified as "annual grass" or "desert wash."

Thus, most of the Tepusquet Peak IRA would be impacted, not by vague "forest health" activities, but rather shrub removal via mastication and other methods—especially within FBDZ areas. Given the shrubland-dominated nature of the Tepusquet Peak IRA, the proposed action would undoubtedly alter the undeveloped character of the IRA while failing to promote "ecological restoration."

Similarly, the Tequepis IRA within the Santa Barbara Ranger District would also be substantially altered by the Project. Approximately 66% of this IRA is included within the Project Area (Table 1), with 2,695 acres (45% of the Project Area's overlap with the Tepusquet IRA) identified as

[1] We used the IRA GIS dataset provided by the U.S. Forest Service at https://data.fs.usda.gov/geodata/edw/datasets.php for our analysis. Because there are some small portions of IRAs that were originally mapped outside the National Forest boundary or that have since become designated Wilderness, we only considered the portions of IRAs within the Los Padres National Forest administrative boundary and that are outside of currently designated Wilderness. The IRA database also contained incorrect names for some IRAs (e.g. Spoor Canyon was labeled as "Lpoor Canyon"), so we updated the names so they are spelled correctly. These corrected names are included in Table 1.

FHTU and 3,276 acres (55% of the Project Area's overlap with the Tepusquet IRA) identified as FBDZ (Figure 3).

Similar to the Tepusquet Peak IRA, the majority of the portion of the Tequepis IRA within the Project Area is classified as a shrub-dominated ecosystem. Of the 5,971 overlapping acres, 4,008 (67%) are classified as "mixed chaparral," "costal scrub," or "chamise-redshank chaparral" according to EVeg data. Regardless, the majority of the portion of the Tequepis IRA within the Project Area and a significant portion of the Tequepis IRA in its entirety (36%) would be subject to FBDZ activities according to the proposed action. As stated above and described in more detail later in this letter, FDBZ activities—especially in chaparral and coastal sage scrub—would cause significant resource damage while failing to promote "ecological restoration," thus substantially altering the undeveloped character of the IRA.

As an example of how fuel breaks can fundamentally alter shrub-dominated landscapes, here we provide before and after aerial images of the construction of the Camino Cielo Fuel Break nearby in the Santa Ynez Mountains. Figure 4 below depicts an area just west of Lizard's Mouth in 1953 before a massive fuel break was constructed and in 1976 shortly after the fuel break was constructed. The presence of a large swath of land cleared of native vegetation—and ultimately type-converted to non-native grasses and weeds (Figure 5)—is a major alteration of the landscape that has persisted to this day. Other images (Figure 6) taken during and immediately after fuel break creation elsewhere in the chaparral-dominated Santa Ynez Mountains give a sense of the significant impact the activities (e.g. mastication) allowed in the proposed action can have on landscapes.

The proposed mastication of shrubland habitat and the removal of trees—including large trees—would negatively impact the roadless character of the IRA. The proposed action would allow for heavy equipment to be used to conduct this work, which could result in skid trails and other ground disturbing activities that would alter the roadless character of the portions of IRAs included in the Project Area.

Please note that roadless character is not limited to whether construction, maintenance, or use of roads occurs in a given area; rather, "roadless character" as defined in the 2001 Roadless Area Conservation Final 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 C.F.R. § 294.11 (2001).[2]

The intensive removal of native vegetation across IRAs would substantially alter their roadless character due to the likely impacts to the undisturbed soil, diversity of plant and animal communities, habitat for listed species (described in more detail in subsequent sections of this letter), 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), and traditional cultural properties.

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). Indeed, as of the writing of this letter, the U.S. House of Representatives has already approved legislation that would designate approximately 35,082 acres of the Project Area as new Wilderness (or additions to existing Wilderness).[3] Overlap between the proposed Wilderness additions, potential Wilderness areas, and national scenic areas and the Project Area can be seen in Figure 7).

B. The Project Would Substantially Alter the Undeveloped Character of Thousands of Acres of Potential Wilderness Area.

According to the Wilderness Act of 1964, 16 U.S.C. § 1131, the definition of "wilderness" is:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3)

[2] The Roadless Rule appears in the 2001-2004 editions of the Code of Federal Regulations, at 36 C.F.R. §§ 294.10-14. In 2005, it was replaced by the State Petitions Rule. 70 Fed. Reg. 25,654 (May 13, 2005). When that replacement was set aside the following year, the Roadless Rule was reinstated. *California ex rel. Lockyer v. USDA*, 459 F. Supp. 2d 874 (N.D. Cal. 2006), aff'd, 575 F.3d 999 (9th Cir. 2009). However, the General Printing Office has thus far not conformed the current published Code accordingly. This letter includes citations to 36 C.F.R. part 294.

[3] H.R. 2546, "Protecting America's Wilderness Act"; H.R. 2500, "National Defense Authorization Act for Fiscal Year 2020."

has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

As discussed above, most of the 104,338 acres of IRAs in the Project area that will be significantly impacted by the Project also meet the definition of "wilderness" and are potential wilderness areas that would be similarly devastated by the Project. Considering that a potential wilderness area must be 5,000 acres minimum, we examined IRAs that (alone or in conjunction with adjacent IRAs) form contiguous units of 5,000 acres or greater in the LPNF. Approximately 92,221 acres of such land is included in the Project Area.

Moreover, legislation pending a vote in the U.S. Senate would designate large swaths of land within the LPNF as new Wilderness as well as congressionally designated Potential Wilderness Areas. Specifically, 25,005 acres of the Project Area would be located in Wilderness and 2,775 acres would be congressionally designated as Potential Wilderness if and when the bill is signed into law (Table 8).

Proposed wilderness areas are themselves derived from IRA designations (i.e. new and potential Wilderness boundaries are the same or very similar to existing IRAs due to the undeveloped and wilderness character those areas possess). The likely potential impacts to these newly designated areas would be the same as described above in section 1B of this letter.

Thus, the Project's substantial alteration of potential wilderness areas and the 34 IRAs in the Project Area require the preparation of an EIS. 36 C.F.R. § 220.5(a)(2).

2. THE U.S. FOREST SERVICE MUST PREPARE AN EIS BECAUSE THE SHEER SCALE AND KNOWN SIGNIFICANCE OF THE PROJECT'S IMPACTS REQUIRE IT PURSUANT TO NEPA.

NEPA provides that "all agencies of the Federal Government shall ... include in every recommendation or report on ... major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official." 42 U.S.C. § 4332(2)(C). In determining the appropriate level of NEPA review for a Project, an agency must first assess whether the Project:

(1) Normally does not have significant effects and is categorically excluded (§ 1501.4);

(2) Is not likely to have significant effects or the significance of the effects is unknown and is therefore appropriate for an environmental assessment (§ 1501.5); or

(3) Is likely to have significant effects and is therefore appropriate for an environmental impact statement (part 1502 of this chapter).

40 C.F.R. § 1501.3(a).

Accordingly, when a Project is likely to have significant effects, as is the case here, an EA does not provide the appropriate level of NEPA review and an EIS is required. *Id*.

"[A]n EIS must be prepared if 'substantial questions are raised as to whether a project ... may cause significant degradation of some human environmental factor.'" *Ocean Advocates v. U.S. Army Corps of Engineers*, 401 F.3d 846, 864 (9th Cir. 2005) (emphasis in original); citing *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149 (9th Cir.1998) (quoting *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1332 (9th Cir.1992). "To trigger this requirement a 'plaintiff need not show that significant effects will in fact occur,' [but] raising 'substantial questions whether a project may have a significant effect' is sufficient." *Idaho Sporting Cong.* 137 F.3d at 1150 (quoting *Greenpeace*, 14 F.3d at 1332); see also *Environmental Defense Center v. Bureau of Ocean Energy Management*, 36 F.4th 850, 878-89 (9th Cir. 2022). The evidence detailed and included in this letter goes far beyond raising a substantial question about whether the Project may have a significant effect, it shows there are likely significant impacts to:

- 14 listed species and 64, 000 acres of critical habitat under the ESA
- U.S. Forest Service Sensitive Plant Species
- Migratory Bird Species protected under the Migratory Bord Treaty Act
- Plant species protected under the ESA
- U.S. Forest Service Sensitive Plant Species
- IRAs
- Cultural and archeological resources
- Spread of invasive species
- Proposed and potential wilderness areas
- Outdoor recreational resources
- Soil and water resources
- Climate change
- Community fire risk

These impacts cannot be summarily dismissed in an EA with a cursory analysis. NEPA requires agencies to take a "hard look" at the potential environmental consequences of a proposed action, not allowing conclusory assertions that an activity will have only an insignificant impact on the environment. *Ocean Advocates* at 864. "General statements about 'possible effects' and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1213 (9th Cir. 1998).

Moreover, when considering whether a project's effects are potentially significant, agencies must consider "the affected area . . . and its resources, such as listed species and designated critical habitat under the Endangered Species Act." 40 C.F.R. § 1501.3(b)(1). As mentioned earlier and described in detail below, the Project will impact over 62,579 acres of designated critical habitat. The ESA 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. §§ 1531 *et seq*.. As discussed below, Project activities such as logging and vegetation clearing will have devastating effects on federal and state protected habitat and species.

When measuring the degree of the effects of a project, factors such as short- and long-term effects, beneficial and adverse, effects on health and safety, and effects that would violate Federal, State, Tribal, or local law protecting the environment must also be considered. 40 C.F.R. § 1501.3(b)(2).

The following compilation of evidence, detailed below, shows that the Project is likely to have dozens of potentially significant effects on protected wildlife and critical habitat, IRAs, potential and proposed wilderness areas, outdoor recreation, soil and water resources, community fire risk, cultural and archeological resources, and climate change. The Project's broad scope and scale of significant effects on the environment necessitate a thorough analysis in an EIS in order to comply with NEPA.

A. Impacts to Wildlife

i. Impacts to Animal Species Protected Under the Endangered Species Act

The Project would impact at least fourteen threatened or endangered wildlife taxa or distinct population segments (DPS; only used for steelhead [*Oncorhynchus mykiss*]). According to analysis of the Project's GIS data provided by the U.S. Forest Service and critical habitat data provided by the U.S. Fish and Wildlife Service, the Project Area includes 62,579 acres of designated critical habitat for the arroyo toad (*Anaxyrus californicus*), California condor (Gymnogyps californianus), California red-legged frog (*Rana draytonii*), Conservancy fairy shrimp (*Branchinecta conservation*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and vernal pool fairy shrimp (*Branchinecta lynchi*) (Table 2). It also includes 22.4 miles of streams designated as critical habitat for the southern California steelhead DPS and 18.6 miles of streams designated as critical habitat for the south-central California coast steelhead DPS (Table 3). A map of all of the critical habitat for animal taxa within the LPNF relative to the Project Area is shown Figure 8.

1) California Condor

Approximately 1,067 acres of the Project Area is designated critical habitat for the endangered California condor. This includes 924 acres identified as FBDZ (86% of the critical habitat that is included within the Project Area). The proposed action would allow removal of trees of any diameter in FBDZ areas and trees up to 24" in diameter in FHTU areas.

Despite the relatively short periods of time that California condors have been studied (both before and after captive breeding and reintroduction efforts), some important facts about their required and preferred habitat are known. The U.S. Forest Service's species account for the California condor highlights the importance of roosting and perching habitat:

> 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 2005a p. 195, *emphasis added*)

Dead or dying "hazard" trees are especially important for roosting and perching:

> 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, p. 35)

According to Koford, "[r]oosting trees are generally from 40 to 70 feet tall," and trees of this size may have diameters smaller than 24 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).

However, the Project will involve intensive tree removal to reduce canopy cover. Opening up the canopy in or immediately adjacent to suitable 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, p. 38). 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. (*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,

> 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 p. 39. *emphasis added*)

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 2005a p. 199, *emphasis added*)

However, it is not just a matter of whether there is suitable condor habitat within the Project Area—tracking data indicates that condors are actively using the Project Area for roosting. The U.S. Fish and Wildlife Service collects and provides to the public GPS tracking data for all tagged condors in distinct populations in California. This includes the largest population, which is primarily found in the LPNF, Bitter Creek National Wildlife Refuge, Hopper Mountain National Wildlife Refuge, and the southern Sierra Nevada.

We analyzed just three years of tracking data for this population (2019 – 2021) to identify instances of overnight roosting across the landscape. We used the same method described by the U.S. Fish and Wildlife Service in documents related to a recent project in the LPNF. They considered the final data point for each individually tracked bird each day after 4pm local time (and the point must have a speed that is less than 6 kilometers per hour) to represent the location of an overnight roosting event. We used the same parameters to delineate overnight roosting events within the Project Area. Between 2019 and 2021, over 80 individual condors roosted 1,087 times within the Project Area according to our analysis using the method developed by Joseph Brandt/U.S. Fish and Wildlife Service. There were also 695 additional instances of overnight roosting by 79 individual condors within 0.25 miles of the Project Area. It should be noted that we only analyzed tracking data for the southern California population of condors, but the Big Sur area population may also have utilized the Project Area in the Monterey Ranger District for overnight roosting during this time period (i.e. we are likely underestimating condor roosting activity within the Project Area).

Given that much of the Project Area is designated critical habitat, the possibility of adverse modification to this habitat is significant. There is also ample evidence that condors have been and are currently utilizing the Project Area for overnight roosting. The agency therefore must prepare an EIS to better determine what the proposed action's impacts to the California condor and its critical habitat may be and how they will be mitigated.

2) California Red-legged Frog

While there is clear evidence that California condors are actively using the Project Area, the species with the most designated critical habitat located within the Project Area by far is the

threated California red-legged frog (CRLF). Approximately 50,595 acres of CRLF critical habitat is within the Project Area, with 39,227 acres identified as FBDZ and 11,368 acres as FHTU. The California Natural Diversity Database (CNDDB) includes 13 reported occurrences of this species within the Project Area. The CNDDB should not be considered a comprehensive database, but it can indicate that there are in fact occurrences of species in particular areas (i.e. it can show that areas support individuals regardless of critical habitat status). According to expert wildlife biologist Lawrence Hunt, the CRLF will likely be significantly impacted by the Project activities that will cause habitat fragmentation, direct mortality, soil erosion, sedimentation, microclimate changes and habitat loss and proliferation of non-native vegetation (Exhibit 1 at 3).

3) Arroyo Toad

The Project Area includes 1,365 acres of critical habitat for the arroyo toad, primarily along the Santa Ynez River and Piru Creek. The U.S. Forest Service's species account notes that arroyo toads and their egg masses are threatened by vehicle and foot traffic as well as livestock grazing. Wildlife biologist Lawrence Hunt states the following in his letter regarding the Project:

> The five species discussed herein are aquatic or associated during one or more life history stages. Studies have documented loss of entire cohorts of egg masses as well as adult [arroyo toad] and CRLF at road crossings in LPNF due to vehicular traffic (e.g., Sweet, 1992; Hunt, 2007), as a result of vehicles driving through stream/road crossings. Even selective thinning of trees using hand- cutting methods in the proposed Forest Health Treatment Units will require the use of heavy equipment, such as cranes, backhoes, and trucks, to remove and transport cut logs. Increased vehicular traffic at creek crossings and in vegetation clearance zones could create a significant source of mortality for these species.
>
> (Exhibit 1 at 3.)

Hunt also describes likely impacts from mastication and other vegetation removal activities to habitat that supports primary prey species on which the arroyo toad relies.

4) Steelhead

There are two steelhead DPS for which designated critical habitat exists within the Project Area. Approximately 18.6 miles along 22 different streams within the Project Area are critical habitat for the south-central California coast DPS (Table 4). Similarly, 22.4 miles along 17 named streams in addition to several unnamed streams within the Project Area are critical habitat for the southern California DPS (Table 5). ForestWatch staff have observed steelhead in streams within the Project Area on multiple occasions in recent years. Mostly recent, we observed individual steelhead in Davy Brown Creek within the Project Area on April 4, 2022 (see Figure 9 for a photo).

5) Other Species

The CNDDB also contains data for occurrences of five other animal species protected under the ESA: the threatened western snowy plover (*Charadrius alexandrinus nivosus*) and the endangered blunt-nosed leopard lizard (*Gambelia sila*), tidewater goby (*Eucyclogobius newberryi*), longhorn fairy shrimp (*Branchinecta longiantenna*), and Smith's blue butterfly (*Euphilotes enoptes smithi*). The number of occurrences for each species can be found in Table 6.

There are 15 occurrences in the CNDDB for the Smith's blue butterfly alone. This insect species depends on its host plants, seacliff buckwheat (*Eriogonum parvifolium*) and coast buckwheat (*Eriogonum latifolium*). According to the CCH2 database provided by the Consortium of California Herbaria (CCH), there are at least nine occurrences of seacliff buckwheat within the Project Area. As with CNDDB, CCH2 is not a comprehensive dataset. It is likely that coast buckwheat also occurs within the Project Area, though the exact number of occurrences of this and seacliff buckwheat are currently unknown due to the lack of focused surveys.

There are six CNDDB occurrences of least Bell's vireo and 1,527 acres of its critical habitat (about 16% of all least Bell's vireo critical habitat designated in the LPNF) within the Project Area. The U.S. Forest Service's species account states:

> The largest population of and the only designated critical habitat for least Bell's vireo on National Forest System lands is centered within 800 acres of the 2,500 acres around the upper end of Gibraltar Reservoir and at the confluence of Indian and Mono Creeks with the Santa Ynez River…This population appears to be the only consistent breeding population on the Los Padres National Forest...
>
> (U.S. Forest Service, 2005b, p. 361)

This precise location—near the confluence of Mono Creek and the Santa Ynez River—is where the species' critical habitat occurs within the Project Area. It should be noted that this species has also been found to use upland, non-riparian areas comprised of chaparral and coastal sage scrub for foraging and nesting (Kus & Miner, 1989). In describing desired habitat for the species, the U.S. Forest Service states:

> Canopy cover is generally greater than 50 percent with occasional small openings. The understory frequently contains dense subshrub or shrub thickets…The birds' center of activity is typically in understory vegetation, and their nest sites and song perches are seldom higher than 6 feet (1.8 meters) above ground…Least Bell's vireos forage in riparian and adjacent upland habitats...
>
> (U.S. Forest Service, 2005b, p. 363)

Threats to the species on national forest lands, including in the LPNF, include habitat fragmentation that favors brown-headed cowbird and other nest predators as well as "disturbances (maintenance, presence, noise) by humans or machines associated with these activities may lead to courtship disruption or nest abandonment" (U.S. Forest Service, 2005b, p.

369). As the Project would allow the use of heavy equipment and vegetation removal in and around the only area where least Bell's vireos are known to be actively breeding in the LPNF, significant impacts to the species are likely.

ii. Impacts to U.S. Forest Service Sensitive Animal Species

The CNDDB contains occurrence data for thirteen different animal species listed as sensitive by the U.S. Forest Service (for the LPNF) within the Project Area. A list of these species can be found in Table 6. The western pond turtle (also known as the southern Pacific pond turtle) has at least 34 known occurrences within the Project Area according to the CNDDB. Four other species have 10 or more occurrences within the Project Area according to the dataset as well. ForestWatch staff have observed the two-striped gartersnake in the Project Area near Davy Brown Creek (see Figures 10 and 11 for photos). While there are limited data regarding many of these species, we provide some detailed information below about a few sensitive species that indicate likelihood of significant impacts due to the activities proposed in the Project.

1) California Spotted Owl

Another species on which the Project is likely to have significant impacts is the California spotted owl (*Strix occidentalis occidentalis*; "CSO"), which is a listed Sensitive Species (and Management Indicator Species) for the LPNF. The Project Area contains a substantial amount 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 fuel breaks on various species including the California spotted owl found, in response to fuel treatments:

> In the Meadow Valley study area, the number of territorial owl sites declined after treatment. Prior to and throughout the implementation of the treatment, the number of owl sites ranged from seven to nine. Between the final year of the DFPZ and group-selection installations (2008) and 2 years after treatment (2009–2010), the number of owl sites declined by one (six territorial sites), and by 3–4 years after treatment (2011–2012), the number of sites had declined to four—a decline of 43% from the pretreatment numbers…
>
> (Stephens et al., 2014, p. 902)

Research suggests that recently burned areas can provide suitable habitat for California spotted owls. For example, a 2018 meta-analysis of CSO research found that:

> The preponderance of evidence presented here shows mixed-severity forest fires, as they have burned through Spotted Owl habitat in recent decades under current forest structural, fire regime, and climate conditions, have no significant negative effects on Spotted Owl foraging habitat selection, or demography, and have significant positive effects on foraging habitat selection, recruitment, and reproduction. Forest fire does not appear to be a serious threat to owl populations and likely imparts more benefits than costs for Spotted Owls;

> therefore, fuel-reduction treatments intended to mitigate fire severity in Spotted Owl habitat are unnecessary.
>
> (D. E. Lee, 2018, p. 19)

This in combination with the results of other 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 (Bond et al., 2009; Hanson, 2021; Hanson et al., 2021; D. E. Lee, 2018, 2020; D. E. Lee & Bond, 2015; Stephens et al., 2014).

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 2005a pp. 228, 230–231, *emphasis added*)

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 [protected activity centers (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 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 p. 24, *emphasis added*)

According to the CNDDB, CSO detections have been reported nearby and the U.S. Forest Service has designated numerous protected PACs in and near the Project Area. Using the official PAC GIS dataset, we identified 2,345 acres of land designated as PACs within the Project Area, with 1,602 acres identified as FBDZ. Additionally, the California Department of Fish and Wildlife's California Wildlife Habitat Relationships ("CWHR") Predicted Habitat Suitability for the species (known as the Spotted Owl Predicted Habitat – CWHR B270 dataset) shows 4,007 acres of habitat with a suitability description of "High" (as well as 13,758 acres with a description of "Medium") in the Project Area.

The Project does not align with the CSO Conservation Strategy for several reasons. Trees greater than 24 inches DBH within PACs and HRCs could be removed, especially in FBDZ areas. The Project may also allow excessive removal of snags and down logs within PACs and HRCs. While there is a Forest Plan standard (S-14) about the retention of downed logs that is often referenced in timber and fuels projects in the LPNF, the same standard states that exceptions are allowed in fuel breaks and defense zones. Because much of the Project Area that contains CSO habitat is identified as FBDZ, the Project may remove all dead and downed material from forested treatment areas since it would fall under the "exception" to the standard as it is labeled as a fuel break.

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. Therefore, the Project may have significant impacts on CSOs as the Proposed Action does not follow these guidelines.

A letter regarding the Project submitted to the U.S. Forest by CSO expert Dr. Monica Bond expresses many of the same concerns that we have outlined above. According to Dr. Bond's comment letter, which she submitted independently to the U.S. Forest Service , there are three overarching points that the U.S. Forest Service should consider:

1. CSO habitat occupancy is generally not affected or can even benefit from mixed-severity fire that includes a high-severity fire component.
2. Most studies that have found negative impacts of fire failed to disentangle the effects of pre-fire occupancy decline due to unburned forest logging (including thinning) and post-fire salvage logging.
3. The Project will likely have significant effects on CSO in the LPNF due to substantial modification of suitable habitat through overstory and understory tree and shrub removal—all of which is unlikely to reduce the occurrence of high-severity fire effects anyway.

Again, due to this likelihood of significant impacts to CSOs, the U.S. Forest Service must prepare an EIS. This concern and request for an EIS for the Project is also shared by one of the top experts in the field of CSO research.

2) Northern Goshawk

The Project may also impact the northern goshawk (*Accipiter gentilis*). The species' year-round range includes much of the Project Area according to the CDFW's species account (Keane, 2008). Furthermore, the CDFW's CWHR Predicted Habitat Suitability for the species (known as the Northern Goshawk Predicted Habitat – CWHR B117 dataset) shows that there is a significant amount of suitable habitat within the Project Area. Approximately 23,252 acres of land within the LPNF administrative boundary is delineated as "High" habitat suitability for the northern goshawk according to the CHWR B117 dataset. Of this, approximately 6,144 acres or 26% is located within the Project Area.

The Project may significantly impact the northern goshawk habitat in the Project Area. According to the U.S. Forest Service's species account prepared with the Land Management Plan of 2005:

> When foraging, northern goshawks utilize a wider range of forest types and conditions, but most populations still exhibit a preference for high canopy closure and a high density of larger trees…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...
>
> (U.S. Forest Service, 2005b, p. 434)

However, the Project would significantly lower tree density in FHTUs and especially in FBDZ, where no tree diameter limit would be imposed. The CDFW species account similarly states:

> Goshawks forage in mature and old-growth forests that have relatively dense canopies…Uncertainty exists regarding the effects of proposed timber harvest

> and fuels management strategies on goshawk habitat quality at the home range and landscape scales.
>
> (Keane, 2008, pp. 159–160)

As with other species that require high canopy closure and an abundance of large snags and downed logs, the northern goshawk will likely be significantly impacted by the Project due to mechanical live and dead tree removal activities across much of the Project Area, including in areas considered suitable for goshawks.

3) Other Species

Additionally, wildlife biologist Lawrence Hunt has found that there are likely significant impacts to the foothill yellow-legged frog (*Rana boylii*), southwestern pond turtle (also known as the western pond turtle; *Emys marmorata*), and two-striped gartersnake (*Thamnophis hammondii*), all of which are U.S. Forest Service sensitive species. His letter states that habitat fragmentation may negatively affect two-striped gartersnake and southwestern pond turtle by causing direct mortality and decreasing gene flow between populations due to fuel break construction. Exhibit 1 at 3. Hunt also states that microclimatic changes and microhabitat loss due to reduced tree canopy and understory cover—the consequential effects on habitat—will likely impact the foothill yellow-legged frog and two-striped gartersnake by removing reducing habitat for the primary arthropod prey species on which these animals rely. Exhibit 1 at 3.

According to Hunt, these species will be impacted by Project activities that will cause habitat fragmentation, direct mortality, soil erosion and sedimentation, microclimate changes and habitat loss and proliferation of non-native vegetation. Exhibit 1 at 3. These impacts will be long-term permanent features causing significant impacts to these special-status species that require an appropriate analysis in an EIS.

The Project is also likely to impact several other sensitive animal species which have known occurrences in the Project Area (see Table 6), including the lesser slender salamander (*Batrachoseps minor*), yellow-blotched salamander (*Ensatina eschscholtzii croceater*), Mount Pinos lodgepole chipmunk (*Tamias speciosus callipeplus*), Tehachapi white-eared pocket mouse (*Perognathus alticola inexpectatus*), southern rubber boa (*Charina umbratical*), Townsend's big-eared bat (*Corynorhinus townsendii*), Pallid bat (*Antrozous pallidus*), and San Emigdio blue butterfly (*Plebejus emigdionis*). As with other species, impacts from habitat changes and use of heavy equipment may be significant. For example, the U.S. Forest Service describes in its species account for the yellow-blotched salamander that "[d]owned logs, leaf litter, and wood debris appear to be important habitat elements" for the species (U.S. Forest Service, 2005b, p. 114), all of which would be removed or otherwise altered by the Project. The southern rubber boa has similar habitat requirements according to the U.S. Forest Service's species account. Interestingly, one study on wildfire effects on various bat species in the Sierra Nevada found that pallid bat exhibited an overall positive response to fire in general and a neutral response to increasing severity (Buchalski et al., 2013). Despite the lack of negative impacts by wildfire, the

Project—supposedly aimed at reducing wildfire impacts—may actually negatively affect the pallid bat according to the U.S. Forest Service's species account:

> Forest activities that could have effects on bats include rock climbing, livestock grazing, vegetation treatments and water extraction that would lead to the loss of a water source or riparian habitat.
>
> (U.S. Forest Service, 2005b, p. 1097)

iii. Impacts to Migratory Birds Protected Under the Migratory Bird Treaty Act

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).[4]

In a Memorandum of Understanding Between the U.S. 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 U.S. Fish and Wildlife Service 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."

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[4] 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.

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." *See* Cal. Fish & Game Code §§ 3503, 3513.

B. Impacts to Plants

i. Impacts to Plant Species Protected Under the ESA

The Project Area includes approximately 567 acres of designated critical habitat for the threatened Camatta Canyon amole (*Hooveria [Chlorogalum] purpurea* var. *reducta*). This is about 38% of all critical habitat for this taxon within the LPNF, and all of it is identified as FBDZ. This is largely because the Project Area includes a fuel break along Red Hill Road, which is one of the only places on Earth where the Camatta Canyon amole can be found. The CNDDB only contains four occurrences for this taxon, one of which is in the Project Area. The CCH2 dataset, however, contains six occurrences within the Project Area out of a total of 11 occurrences. Because of its small extent and declining habitat quality due to invasive plants and road maintenance (Kofron et al., 2021), the Camatta canyon amole "faces a very high risk of extinction" (Kofron et al., 2013, p. 45). Due to the ground-disturbing activities allowed in the Project Area and the potential spread of invasive plants from these activities, impacts to the Camatta Canyon amole are likely and must be analyzed in an EIS.

The CNDDB also contains occurrences for the endangered California jewelflower (*Caulanthus californicus*), Chorro Creek bog thistle/San Luis Obispo fountain thistle (*Cirsium fontinale* var. *obispoense*), and Kern mallow (*Eremalche parryi* ssp. *kernensis*) within the Project Area. Without more comprehensive survey data, it is difficult to ascertain the degree to which any of these or other species occur within the Project Area, and it is likely that current information underestimates their occurrences in areas that could be impacted by the Project. For example, another threatened species— southern mountain wild-buckwheat (*Eriogonum kennedyi* var. *austromontanum*)—also occurs within the Project Area according to CCH2 data. That dataset shows 15 occurrences (about 10% of all occurrences in CCH2 and 79% of all occurrences within the LPNF) within the Project Area, especially along Grade Valley and Lockwood Valley Roads in the Mt. Pinos Ranger District. This taxon particularly is in need of focused surveys with experienced botanists who are familiar with the subtle differences between this variety of *E. kennedyi* and *E. k.* var. *kennedyi* (as well as var. *alpigenum*). Moreover, according to a copy of a letter submitted to the U.S. Forest by Pam De Vries—a botanist based in Pine Mountain Club and the author of *A Field Guide to the Plants of the San Emigdio Mountains Region of California* (an area that would be largely impacted by the Project—further details the Project's likely significant impacts to southern mountain buckwheat and Kern mallow.

ii. Impacts to U.S. Forest Service Sensitive Plant Species

According to the CNDDB, at least 60 plant species designated as sensitive in the LPNF occur within the Project Area (Table 7). At least 50% of all occurrences in the CNDDB are within the Project Area for 11 species.

For example, all eight occurrences of the Santa Ynez false lupine (*Thermopsis macrophylla*) in the CNDDB are found within the Project Area in the Santa Ynez Mountains. This is an incredibly rare plant that only grows along a narrow band between La Cumbre and Santa Ynez Peaks in Santa Barbara County. The U.S. Forest Service's species account for the Santa Ynez false lupine similarly states:

> All ten occurrences of *Thermopsis macrophylla* that have been mapped are on the Santa Barbara Ranger District of the Los Padres National Forest.
>
> (U.S. Forest Service, 2005c, p. 1978)

The species account goes on to state that road and fuel break construction as well as the spread of invasive plants has degraded habitat for Santa Ynez false lupine. It is likely that additional impacts from the use of heavy equipment as part of the Project will further threaten this rare species, especially considering the degree to which known occurrences are located within the Project Area.

Another sensitive species that would likely be significantly impacted by the Project is the Refugio manzanita (*Arctostaphylos refugioensis*), which is only found in western Santa Ynez Mountains. The CNDDB shows that 11 of the 27 total occurrences in that dataset are within the Project Area. Similarly, the CCH2 dataset shows that 27 of the 78 occurrences reported in the LPNF are within the Project Area. This species of manzanita does not have the ability to resprout, instead repopulating an area after disturbance only via seed. Seed germination is primarily stimulated by smoke-related fire cues (Parker & Vasey, 2016), thus the species is unlikely to repopulate an area where adult individuals have been mechanical removed (e.g. by mastication) due to the lack of smoke chemicals in the soil subsequently.

The limited range in which the Refugio manzanita occurs was the subject of a controversial fuel break project that was approved by the U.S. Forest Service in 2016. As part of the greater "Santa Barbara Mountain Communities Defense Zone Project," the agency approved a six-mile-long fuel break between Gaviota Peak and Refugio Pass that would have cut through multiple known populations of the Refugio manzanita. In response to litigation over the project's approval incorrectly using a categorical exclusion, the U.S. Forest Service eventually dropped that fuel break from its larger project. Unfortunately, much of the fuel break area that was approved and then later withdrawn in 2017 is now included in the Project Area. With the establishment of any fuel break comes the risk of increased use of bulldozers either on the fuel break directly or to create lateral fire breaks nearby during active fire suppression (which may function as indirect or contingency fire breaks). It is therefore likely that the Project may cause significant indirect effects to the species due to increased use of bulldozers in areas where the species occurs but that are technically outside of the Project Area.

As stated in the previous subsection, the CNDDB is not comprehensive. The CCH2 dataset shows that another sensitive plant taxa, southern alpine buckwheat (*Eriogonum kennedyi* var. *alpigenum*), occurs within the Project Area. In fact, all nine occurrences in that dataset that are within the LPNF are located within the Project Area on the summit of Mt. Pinos. The U.S. Forest Service's species account for this taxon notes that the primary threats in the LPNF are related to trampling by foot and mountain bike traffic:

> …it may be at risk from trampling by off-trail hikers...A dirt road that bisects the population on top of Mount Pinos has been closed to the public for motorized access and is now used primarily as a foot trail. The road receives occasional use by the US Air Force when maintaining a communication site and by Native American elders accessing ceremonial sites atop the mountain. This restriction of use has benefited *Eriogonum kennedyi* var. *alpigenum* by reducing impacts from parked vehicles and by reducing the overall amount of trampling that occurs from human foot traffic. One unmitigated impact that sometimes occurs is trampling from off-trail mountain bike use. The magnitude of this impact is currently small but could increase as the sport of mountain biking increases in popularity.
>
> (U.S. Forest Service, 2005c, p. 962)

While the species account does not mention potential threats from vegetation removal activities such as those proposed in the Project, the fact that it highlights trampling by hikers and mountain bikers as a threat is important in the context of the Project. The Mt. Pinos summit—where all of the known occurrences of this taxon are found—is entirely included within the Project Area, identified specifically as a FBDZ. The use of heavy equipment such as masticators or even by hand crews is likely to cause significant impacts to this sensitive taxon.

Botanist Pam De Vries also states in her letter to the U.S. Forest Service regarding the Project that significant impacts are likely to the pale yellow layia and Mount Pinos onion, both of which are U.S. Forest Service sensitive taxa.

C. Impacts to IRAs

As stated in section 1 of this letter, there are likely substantial impacts to several IRAs. Please see that section for more detailed information about potential impacts.

D. Impacts to Cultural and Archeological Resources

Several archeological and cultural sites exist within the Project Area and will likely be significantly impacted by the Project activities. In fact, the scoping letter for the Project submitted to tribal groups by the U.S. Forest Service stated that 1,035 archeological and historical sites have been recorded within the Project Area. These records were produced from surveys on just 9,000 acres of the Project Area, indicating that there are likely thousands more such sites across the rest of the Project Area.

It is essential to note that “cultural sites” are not synonymous with “archeological sites.” Archeological sites are primarily sites with intact strata that are of value for archeological research and data gathering. Cultural sites, on the other hand, include former village sites, work sites, sacred sites, petroglyph and arborglyph sites, and burials of human remains and associated cultural materials. These sites are of great cultural importance to Chumash Peoples and must be protected regardless of the level of previous disturbance or environmental degradation of the area. Additionally, cultural sites include traditional gathering sites for ceremonial plants, medicine plants, food plants, basketry plants, and other material culture plants. It is vital to recognize that traditional gathering sites are irreplaceable and not interchangeable with other locations that have the same plant species. Traditional gathering sites have unique features that make the plants grow in a manner appropriate for their traditional uses and have often been intentionally and carefully tended by Chumash families for generations.

Unlike archeological sites, which can be identified from previous archeological documentation, cultural sites can only be identified through consultation with Chumash tribes, bands, clans, and family groups. This information is generally closely held by culture bearers and under normal circumstances is not shared with the public, academia, or agencies. Exceptions, under confidential conditions, can be made in order to protect these natural cultural resources. It also must be noted that there are several Chumash tribes, bands, clans, and family groups associated with the Project Area. These tribal entities are not interchangeable and culture bearers in each tribal group hold unique traditional knowledge relevant to cultural sites in the project area. A list of groups whose traditional homelands include the Project Area can be obtained from the Native American Heritage Commission and additional Chumash community outreach.

E. Impacts of Invasive Species Spread

The construction and maintenance of fuel breaks may have an indirect effect and 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, p. 19)

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, p. 380)

Fuel breaks have been found by other studies to facilitate invasive species spread, especially in coastal sage scrub and chaparral (Brennan & Keeley, 2017). One study (Merriam et al., 2006) of non-native plant cover in fuel breaks across California found that fuel breaks in coastal sage scrub had the highest relative non-native cover (68% on average) with chaparral having the next greatest average relative non-native cover (39%). That same study also found (p. 526):

> …our results suggest that fuel breaks become increasingly important sources of nonnative seeds with time. We found that older fuel breaks had much higher nonnative abundance both on the fuel break and at distances of up to 20 m from the fuel break.

A 2011 study on the efficacy of fuel breaks in southern California national forests stated:

> …fuel treatments can lead to ecological degradation because they often involve complete removal of vegetation, facilitate the spread of exotic species, and may thus indirectly contribute to increased fire frequency in a region where recurrent fire already threatens the native shrublands.
>
> (Syphard et al., 2011b, p. 2047)

Importantly, the FBDZ portion of the Project Area is comprised of 91,020 acres of coastal sage scrub and chaparral according to EVeg data. The patterns of invasive plant abundance and spread found by Merriam et al. may also apply to other shrubland ecosystems such as sagebrush in the Project Area.

The Project's potential impact on invasive plant spread has broader implications for fire activity in the LPNF. There is ample evidence that non-native invasive grasses (e.g. cheatgrass, *Bromus tectorum*) found commonly in fuel breaks and adjacent areas are more ignitable/flammable

during more of the year than native shrubs and other vegetation (Brooks et al., 2004; D'Antonio & Vitousek, 1992). Brooks et al. (2004) state (p. 679):

> For example, grass invasions of shrublands, such as the *B. tectorum* [cheatgrass] invasion described earlier, increase fire frequency by increasing the fuel surface-to-volume ratio, increasing horizontal fuel continuity, and creating a fuel packing ratio that facilitates ignition.

It should be noted that studies have found that anthropogenic fire ignitions are more likely to occur close to roads than other areas in southern California (Syphard & Keeley, 2015) and human-caused fires represent the vast majority of fires in and around the LPNF due to the lack of lightning ignitions (Keeley & Syphard, 2018). And according to our analysis of local road data and GIS data for the Project, approximately 89,533 acres or about 48% of the Project Area identified as FBDZ is located within 0.25 miles of a road. Thus, the likely spread of invasive plants in fuel breaks along roads may increase anthropogenic fire ignitions, which can have serious consequences on chaparral and coastal sage scrub dominated areas where increased fire frequency is a major cause of resource degradation (Syphard et al., 2019). The risk of increased fire frequency in chaparral-dominated areas in the LPNF is even acknowledged in the Project description, which only enhances the necessity of analyzing these likely impacts to invasive plant spread and consequent ignition risk as part of an EIS.

F. Impacts to Proposed Wilderness and Potential Wilderness Areas

See discussion above in Section 1.b. for discussion about impacts to areas that qualify for Wilderness designation (some of which have already been proposed as such by Congress) within the LPNF.

G. Impacts to Outdoor Recreation

The Project would likely have a significant impact on outdoor recreation features and activities in LPNF that must be analyzed in an EIS. These include:

- Overlap with 24 developed campgrounds and 49 primitive backcountry campsites
- Overlap with 31 trailheads, 136 miles of non-motorized trails, 159 miles of motorized trails, and 100 miles of roads that are primarily used as non-motorized trails
- Overlap with 48 miles of the proposed Condor National Scenic Trail
- Overlap with several designated recreation areas including the Lower Santa Ynez River Recreation Area, Upper Santa Ynez River Recreation Area, Pine Mountain Recreation Area, Figueroa Mountain Recreation Area, Mt. Pinos Recreation Area, Arroyo Seco Recreation Area, and others
- Overlap with several popular day use areas such as Red Rock, First Crossing, and Sand Dollar

Specific impacts to recreation include reduction of vegetative cover around campsites, reducing scenic values, limiting privacy and sense of solitude, and exposing campsites to more extreme

weather conditions. Similar impacts would occur if vegetation was cleared along trails, and lack of vegetation along trails could also contribute to erosion and increased maintenance needs on an already strained trail system. Moreover, if areas are temporarily closed when vegetation treatments take place, a lack of access would be a significant recreation impact. Moreover, visual impacts to trail users will occur when fuel breaks and defense zones are created within sight of trail corridors.

The Project would also negatively affect the recreation experience at several Day Use areas that are popular with forest visitors. Examples include Sand Dollar Beach and surroundings, Pfeiffer Beach and surroundings, Pino Alto atop Figueroa Mountain, White Rock, Lower Oso, Red Rock, and Arroyo Seco.

The Project would affect 48 miles of the Condor National Recreation Trail proposed for designation in the Central Coast Heritage Protection Act. The purpose of this designation would be severely compromised if significant vegetation clearance occurs along or within view of this proposed route.

These impacts may be significant and warrant preparation of an EIS.

H. Impacts to Soil and Water Resources

As the Project would include the use of heavy equipment, potentially across large swaths of land, there is a high likelihood that soil and water resources will be significantly impacted. Several studies have shown tree removal activities involving heavy equipment to have significant impacts on soil compaction, erosion, and sediment transport to streams (Croke & Hairsine, 2006; Klein et al., 2012; Lewis et al., 2019; Wagenbrenner et al., 2015, 2016). A recent study found that logging significantly exacerbated road erosion and downstream turbidity after a wildfire in the Sierra Nevada and that best management practices (BMPs) did not fully mitigate these effects (Lewis et al., 2019). Another study found that skidder tracks/trails are particularly problematic from a soil erosion standpoint:

> The bulk density and soil strength data indicated greater compaction with the increase in traffic from the feller-buncher tracks to the skidder tracks, and more compaction will cause less infiltration and lead to more surface runoff and erosion.
>
> (Wagenbrenner et al., 2015, p. 190)

These issues are especially important in FHTUs where ground-based logging activities will likely be concentrated. According to analysis of Project Area GIS data provided by the U.S. Forest Service and local road data, approximately 42,370 acres or 86% of total FHTU area is farther than 0.25 miles from an existing road or off-highway vehicle (OHV) trail. Areas within FHTU that are farther away from existing road networks will likely require greater distance traveled for heavy equipment such as feller bunchers, skidders, and masticators. Based on the Project description, it is unclear whether temporary road construction would be allowed as part of the

Project. If temporary road construction will be allowed in FHTUs, this will only add to potential effects on soil quality, erosion, and downstream water quality.

Additionally, slash pile burning has been shown to negative impact soils. One study found that slash pile burning can sterilize soil by destroying soil seed banks and mycorrhizal fungal structures (Korb et al., 2004). That study stated (p. 57):

> Slash pile burning leaves persistent scars on the land and therefore may conflict with managers' goals for Pinus ponderosa stands. We found that slash pile scars have significantly altered soil properties and virtually no viable plant seeds and [arbuscular mycorrhizae] propagules remain.

That study also found that pile burning can significantly alter soil chemistry (p. 58):

> Slash pile burning also altered soil chemistry…Soil chemistry changes, which affect nutrient availability, can influence post-disturbance vegetation. In particular ruderal and non-native species can often outcompete native species in high-nutrient environments.

ForestWatch staff have observed relatively little native plant growth following pile burning in the LPNF (Figure 12). The photo in Figure 12 also shows heavy abundance of invasive cheatgrass surrounding the pile burn location.

There may also be increased risk of OHV trespass in fuel breaks due to their lack of certain types of vegetation that would normally inhibit various OHVs. ForestWatch staff have observed such trespass and consequent erosion in existing fuel breaks on numerous occasions (Figures 13 and 14).

I. Impacts to Climate Change

The new administration has taken a serious interest in reducing carbon emissions from federal lands. Importantly, researchers have found that fuel reduction activities intended to change subsequent fire behavior release three times as much carbon into the atmosphere than they keep from being emitted in a future fire (Campbell et al., 2012). This is largely due to the ineffectiveness of fuel reduction efforts in altering subsequent wildfire behavior and the fact that high-severity fire effects occur across relatively smaller portions of the landscape compared to low- and moderate-fire severity effects (i.e. if fuel reduction efforts were to prevent high-severity fire effects, they would still burn at low- to moderate-severity). Moreover, because most carbon in forested areas is located within the boles of trees, especially those over 21" in diameter (Mildrexler et al., 2020), and because live woody biomass combustion is very low even in high-severity fire patches (Harmon et al., 2022), carbon emissions from forest fires is much lower than land management agencies and policymakers assume (Bartowitz et al., 2022; Stenzel et al., 2019). A recent study stated:

> Our results and the majority of full-carbon accounting studies conclude that any type of harvest (logging or commercial thinning) decreases forest carbon

> storage…and this research shows harvest emits more carbon per unit area than fire at all scales…
>
> (Bartowitz et al., 2022, p. 8)

While there has not been much research into carbon dynamics in chaparral, it should be noted that chaparral (including old-growth stands) can store significant amounts of carbon (Luo et al., 2007), which would be diminished with repeated mastication. As described in more detail in section 3A of this letter, fuel breaks on chaparral-dominated landscapes in the region are relatively ineffective in curtailing wildfire spread under the weather conditions that drive most large wildfires in and around the LPNF, so it is unlikely that the Project would inhibit significant amounts of carbon from being emitted during subsequent wildfires. Thus, widespread construction of fuel breaks would likely result in a net decrease in carbon stores in chaparral and other shrubland ecosystems in the LPNF.

The EA or EIS should analyze the effect of the Project and any alternatives on carbon sequestration and emissions in the Project Area.

J. Impacts to Community Fire Risk

As detailed in section 2E of this letter, the Project will likely exacerbate the spread of invasive, non-native plants that can actually increase wildfire risk due to ignition and fire spread potential (Fusco et al., 2019). This is likely to increase fire risk to nearby communities due to expanded ignition zones along roads and greater abundance of flashy fuels comprised of non-native grasses and weeds on some parts of the landscape.

The U.S. Forest Service's FIRESTAT database—which contains ignition location data from 1986 to 2019—shows 1,184 anthropogenic ignitions within the LPNF boundary since the database was created. Of those, 311 occurred in the Project Area. The Project Area accounts for about 12% of all land within the LPNF boundary (both public and private), yet the same area accounts for 26% of ignitions. In other words, ignitions are already more than twice as likely to occur on lands that would be included in the Project Area. Increased spread of non-native, invasive plants in these areas will only increase ignition potential and exacerbate the issue of these areas being ignition source. This may increase risk to communities in the region, especially those "downwind" (considering predominant, extreme wind patterns such as those seen with Santa Ana and sundowner winds) from lands included in the Project Area. Moreover, the likely increased use of bulldozers in fuel break areas during future wildfire suppression operations (as described in more detail in section 5 of this letter) will likely exacerbate soil erosion and sediment transport to nearby streams.

K. Impacts to Coastal Resources

The EIS must evaluate impacts to coastal resources. Much of the Project Area is in the coastal zone and requires an analysis of specific impacts to coastal resources affected by Project activities.

3. THE U.S. FOREST SERVICE SHOULD ANALYZE IN DETAIL SPECIFIC ALTERNATIVES TO THE PROPOSED ACTION IN AN EIS.

NEPA requires agencies to consider a reasonable range of alternatives whether they prepare an EA or an EIS. *Western Watersheds Project v. Abbey*, 719 F.3d 1035, 1050 (9th Cir. 2013). In considering which alternatives to analyze, agencies must provide a "detailed statement" regarding why they were eliminated or not considered, and include a no action alternative. 40 C.F.R. § 1502.14(a). The alternatives analysis "is the heart of the environmental impact statement." *Ilio 'ulaokalani Coalition v. Rumsfeld*, 464 F. 3d 1083 (9th Cir. 2006).

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).

When formulating the alternatives analysis for the Project, we ask that you consider the following alternatives that would achieve mitigation of wildfires without such a high impact and loss to IRAs and potential Wilderness areas, wildlife, habitat cultural resources, recreational areas and water resources.

A. Alternative 1 – Focus on Areas Closest to Human Communities.

The best available science shows that community protection from wildfire should be focused on risk management in the home ignition zone and within communities themselves rather than in the backcountry (Calkin et al., 2014; Cohen, 1999, 2000, 2010; J. Y. Lee et al., 2022; Penman et al., 2014; Syphard & Keeley, 2019). Studies have shown the importance of defensible space in protecting residential structures from a wildfire. In terms of vegetation management to reduce wildfire risk to structures, 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, p. 1174)

Another paper found that "substantial property loss occurred when the primary surrounding fuel type was low fuel-volume grasslands" when examining various factors affecting structure loss in southern California (Syphard et al., 2012, p. 5). Along with the additional risk that invasive, non-native grasses and weeds that are often spread by activities such as those proposed in the Project (see section 2E of this letter) pose (e.g. increased ignition risk), there are significant potential issues with carrying out landscape-scale fuel reductions near communities. It is therefore imperative that such actions be carried out in a way that truly decreases wildfire risk to structures and communities without causing significant ecological damage.

It is also important that the U.S. Forest Service avoids focusing on ineffective approaches to human community risk reduction. For example, fuel breaks have been found to be effective at stopping wildfire spread less than half the time they are intersected by a fire, and generally only when firefighters were present under non-extreme weather conditions (Syphard et al., 2011a, 2011b). Whether the activities being proposed as part of the Project will actually reduce wildfire risk under extreme weather is especially pertinent in much of the LPNF due to the common occurrence of Santa Ana and sundowner winds during various times of year. The Project description states (p. 13):

> Treatments would focus on improving wildfire containment opportunities through implementing and maintaining fuel breaks, and the maintenance of shaded fuel breaks with periodic reductions of surface and ladder fuels to levels that support surface fire in 90th percentile weather conditions.

It is unclear by this statement whether the proposed action would result in fuel levels that support surface (i.e. minimize crown fire activity) in >90th percentile weather conditions. It is also unclear whether this statement applies to non-forest ecosystems where surface fire is uncommon regardless of weather conditions (e.g. chaparral). Additionally, how weather conditions percentiles are/would be determined is unclear. Importantly, most large wildfires and wildfires that involve significant community damage in the region occur under extreme weather conditions such as Santa Ana winds (Jin et al., 2015). Santa Ana winds, by definition, occur when the Fosberg fire weather index exceeds the 90th percentile during the fall and winter (among other requirements related to wind direction and broad pressure gradients in southern California) according to climatologists (Abatzoglou et al., 2013). In the Santa Ynez Mountains, sundowner winds also generally occur above the 90th percentile of wind speeds (Jones et al., 2021; Smith et al., 2018; Zigner et al., 2022). Thus, it is likely that the Project will fail to limit fire spread under extreme weather conditions such as Santa Ana and sundowner winds, which are when communities are most at risk.

An alternative that excludes land beyond 0.25 miles from structures should be analyzed in detail. We utilized a unique and highly accurate structure footprint dataset created by Microsoft (Huang & Jin, 2022) and found that about 22% of the Project Area is within 0.25 miles of a structure on the landscape. It should be noted that many of these structure are not homes but rather sheds, barns, and even campground outhouses. This number is therefore greater than the amount of the Project Area within 0.25 miles of a home. Nonetheless, an alternative limiting the Project Area to only this distance from structures should be analyzed.

B. Alternative 2 – Ecologically Appropriate Prescribed Fire Only.

Several studies have shown that prescribed fire can be implemented safely during the early fire season in mixed-conifer and Jeffrey/ponderosa pine forests in California without pre-fire mechanical fuel reduction or tree removal (Keifer et al., 2006; Knapp et al., 2005; Knapp & Keeley, 2006; van Mantgem et al., 2011, 2013). This does not mean there are not potential ecological risks with the use of prescribed fire in these ecosystems, however (Kerns & Day, 2017; Tiedemann et al., 2000), and passive restoration processes can produce similar results to

prescribed fire (Zachmann et al., 2018). Regardless, the U.S. Forest Service should analyze in detail an alternative that would implement prescribed fire in mixed-conifer and Jeffrey/ponderosa pine forests only and without pre-fire mechanical activities. This alternative should exclude mechanical and prescribed fire activities outside of these ecosystems.

With use of any amount of prescribed fire in mixed-conifer and Jeffrey/ponderosa pine forests, the U.S. Forest Service must first recognize that the predominant historical and contemporary fire regime in these ecosystems is a variable interval mixed severity regime (Baker, 2014, 2017; Baker et al., 2018; Baker & Hanson, 2017; Baker & Williams, 2018; Odion et al., 2014; Stephens et al., 2021; Williams & Baker, 2012, 2014). This fire regime includes a high-severity fire component that has been shown to create important habitat for a variety of species (Blakey et al., 2019; Bond et al., 2016; Buchalski et al., 2013; DellaSala et al., 2014, 2017, 2022; Galbraith et al., 2019; Hutto, 2008; Hutto et al., 2016; D. E. Lee, 2018; Smucker et al., 2005; Tingley et al., 2016). Contrary to common perception, numerous studies have found that heterogenous regeneration of pines and other conifers is common in even large high-severity fire patches (D. C. Donato et al., 2012; D. C. D. C. Donato et al., 2009; Haire & McGarigal, 2008, 2010; Hanson, 2018; Hanson & Chi, 2021; Owen et al., 2017). Additionally, research has shown that historical dry mixed-conifer and Jeffrey/ponderosa pine forests had abundant small trees, which were an important component of forest resilience (Baker et al., 2018; Baker & Hanson, 2017; Baker & Williams, 2015). The studies cited here are but a subset of a larger body of research that must be incorporated into the U.S. Forest Service's planning and decision-making process for the Project.

Importantly prescribed fire and other activities are largely unnecessary (and may, in fact, be inappropriate), in other forest and woodland types such as pinyon-juniper woodland, which comprises 28,807 acres (about 12%) of the Project Area. Studies have found that pinyon-juniper woodlands in southern California have been generally unaffected by fire suppression over the past century (Wangler & Minnich, 1996). A large review of the scientific literature regarding the fire ecology of pinyon-juniper woodlands stated:

> However, reliable evidence of spreading low-severity surface fires is presently lacking for most of the piñon–juniper zone in the West, suggesting low-severity surface fires were likely not a common type of fire in these woodlands…Have high-severity fires increased in these woodlands since EuroAmerican settlement, possibly because fires, that formerly would have been low-severity surface fires, now burn as high-severity fires? Available data reveal that high-severity fires have been common and almost no low-severity surface fires have occurred in piñon–juniper woodlands since EuroAmerican settlement…
>
> (Baker & Shinneman, 2004, pp. 11, 16)

There are fewer studies about fire ecology in other forest and woodland types such as montane hardwood (11,605 acres of the Project Area, found scattered throughout the Transverse Ranges) and closed-cone-pine-cypress (1,026 acres of the Project area, much of which is located

on West Cuesta Ridge), thus great caution must be taken with applying management techniques developed for other vegetation types.

C. Alternative 3 – Exclude Various Protected and Specially Designated Areas.

The U.S. Forest Service should analyze in detail an alternative to the proposed action that excludes various specially designated and protected areas within the LPNF. These should include but are not limited to:

- IRAs
- Proposed and potential wilderness areas
- Special Interest Management Areas (SIAs)
- Research Natural Areas (RNAs)
- Critical Biological Zones (CBZs)
- Areas proposed by Congress for protection under the Wilderness Act
- Areas proposed by Congress as national scenic areas
- Areas proposed by Congress as potential Wilderness areas
- Backcountry Non-Motorized (BCNM) zones
- Designated critical habitat for threatened and endangered species
- Within 0.25 miles of known California condor roosting sites
- Within 0.5 miles of known California condor nesting sites
- Riparian areas
- Cultural and archeological sites
- Recreation sites

4. THE PROJECT IS INCONSISTENT WITH THE FOREST PLAN.

The National Forest Management Act (NFMA) directs the U.S. Forest Service to develop Forest Plans to guide management of forest resources. 16 U.S.C. § 1604. The U.S. Forest Service implements a Forest Plan through the approval or disapproval of particular projects. Proposed projects must be consistent with the Forest Plan. *Id*. at § 1604(i). As detailed below, the Project as currently proposed is inconsistent with the Forest Plan for LPNF, resulting in a significant effect that must be fully analyzed in an EIS.

A. The Project is Inconsistent with Land Use Zones.

Part 2 of the Forest Plan sets forth various "land use zones" that specify which types of uses and activities are permissible in a particular area. The Project is inconsistent with these land use zones.

For example, so-called "Community Protection Areas" are only allowed "by exception" in Critical Biological Zones. "Fuelbreak Construction" is only allowed "by exception" in BCNM zones, Critical Biological Zones, and Wilderness. If the U.S. Forest Service is going to allow certain types of activities "by exception" then the use of the exception should be fully justified in the environmental document for each specific area where the exception is applied. If an "exception" is broadly applied—such as the widespread construction of fuel breaks in BCNM as is envisioned by the Project—then it no longer acts as an exception. Exceptions, by definition, should be narrowly tailored. Indeed, 68,562 acres of the

Project Area (about 29% of the total Project Area) is designated as BCNM according to GIS data received from the U.S. Forest Service.

It should also be noted that areas zoned as Recommended Wilderness are treated as Wilderness for purposes of determining which types of land uses are allowable.

Critical Biological Zones are defined as "the most important areas on the national forest to manage for the protection of species-at-risk" (U.S. Forest Service, 2005a). The Project overlaps these zones in several areas. Exceptions should not be applied in these zones.

B. The Project is Inconsistent with Forest Plan Standards for Wildlife.

Part 3 of the Forest Plan sets forth various standards to apply to all management activities. These standards must be applied to the Project, and the environmental document should analyze their applicability to the Project and explain how the Project is consistent with each applicable standard.

For example, S18 requires protection of raptor nests along with a no-disturbance buffer around active nest sites. Inactive nest sites must also be protected. The Project is inconsistent with the protection of raptor nests because the Project does not contain any mitigation measures or design criteria to limit Project impacts on raptors, establish buffers around nest sites, or specify survey protocol. Similarly, the Project is inconsistent with standards and guidelines for protection of condors, spotted owls, and other endangered, threatened, and sensitive species.

C. The Project's Impacts to Scenic Integrity Objectives Warrant Preparation of an EIS.

Much of the Project Area is identified as having a scenic integrity objective (SIO) of "high." Forest Plan standards state:

> S9: Design management activities to meet the Scenic Integrity Objectives (SIOs) shown on the Scenic Integrity Objectives Map.
>
> S10: Scenic Integrity Objectives will be met with the following exceptions:
>
> - Minor adjustments not to exceed a drop of one SIO level is allowable with the Forest Supervisor's approval.
> - Temporary drops of more than one SIO level may be made during and immediately following Project implementation providing they do not exceed three years in duration.

The U.S. Forest Service must evaluate how the Project will affect SIO levels across the Project Area. It is important to understand the definition of a "high" (appears unaltered) SIO level:

> HIGH scenic integrity refers to landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
>
> (U.S. Forest Service, 1996, p. 59)

The U.S. Forest Service Manual (FSM) also states in FSM 2380.3 (*emphasis added*):

It is Forest Service policy to:

1. Inventory, evaluate, manage, and, where necessary, restore scenery as a fully integrated part of the ecosystems of National Forest System lands and of the land and resource management and planning process.

2. Employ a systematic, interdisciplinary approach to scenery management to ensure the integrated use of the natural and social sciences and environmental design.

3. **Ensure scenery is treated equally with other resources.**

4. Apply scenery management principles routinely in all National Forest System activities.

It is highly likely that the Project will result in significant drops in SIO levels across much of the Project Area (see Figures 4-6 for examples of landscape changes during and following fuel break construction, for example). These significant effects require analysis in an EIS.

D. The Project is Not Compatible with Existing and Proposed Special Designations.

The Project would likely significantly impact several RNAs and SIAs as designed in the Forest Plan. For example, the Project appears to overlap the entire Cuesta Ridge Botanical SIA and portions of the Big Pine Mountain RNA and Black Butte RNA, all of which would likely be significantly impacted by the Project.

Consistent with the Forest Plan, no vegetation removal should occur in these areas. The environmental document must disclose the overlap of the Project with these areas, evaluate impacts to the natural resources featured in these areas, and evaluate consistency with related Forest Plan standards and guidelines.

The environmental document should evaluate compliance with standards applicable to these special areas, including:

- SD 3 - Research Natural Areas Protect and manage research natural areas to maintain unmodified conditions and natural processes. Identify a sufficient range of opportunities to meet research needs. Compatible uses and management activities are allowed.

In addition, the Forest Plan requires the U.S. Forest Service to prepare and update management plans, implementation schedules, and monitoring plans for RNAs. For each RNA affected by the Project, the environmental document should evaluate consistency with the area's management plan, implementation schedules, and monitoring plans.

The Project must also be consistent with various strategies and directives pertaining to RNAs and SIAs, including but not limited to:

- the National Strategy for the U.S. Forest Service Research Natural Areas Program issued by the Forest Service Chief in July 1993
- RNA guidance provided in U.S. Forest Service Manual 4063
- SIA guidance provided in U.S. Forest Service Manuals 2360 and 2372

E. The Project Fails to Protect Management Indicator Species Identified in the Forest Plan.

The Forest Plan identifies twelve plant and animal species for special management and monitoring consideration. These Management Indicator Species (MIS) are selected because their population or habitat trends are believed to indicate the effects of management activities and as a focus for monitoring. The Project fails to protect these species and fails to consider MIS in Project monitoring.

5. THE U.S. FOREST SERVICE MUST CONSIDER THE CUMULATIVE EFFECTS OF PAST, PRESENT, AND FUTURE ACTIONS.

NEPA mandates disclosure and consideration of "direct," "indirect," and "cumulative" environmental effects. 40 C.F.R. §1508.1(g). A cumulative impact is defined as: "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." *Id.* Consideration and cataloging of past actions are relevant and necessary when assessing the cumulative impacts of a Project. 36 C.F.R. § 220.4(f). In a logging proposal for the Tongass National Forest, the Ninth Circuit ruled that the U.S. Forest Service's failure to consider the cumulative effects of nearby logging of non-federal lands was a fatal defect in the project's EIS. *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d. 797 (9th Cir. 2005). Here, substantial portions of the Project Area are immediately adjacent to past approved (in the past 15 years) timber and fuels projects, many of which have already been implemented or are currently being implemented. These include the following (with decision years):

- Cuddy Valley Forest Health/Fuels Reduction Project (2018)
- Frazier Mountain Vegetation Management Project (2012)
- Frazier Park Community Defense Zone Project (2007)
- Lake of the Woods Community Defense Zone Project (2007)
- Pine Mountain Club Project (2008)
- Reyes Peak Forest Health and Fuels Reduction Project (2021)
- Santa Barbara Mountain Communities Defense Zone Project (2016)
- Monterey Strategic Community Fuelbreak Improvement Project (2018)
- Tecuya Ridge Shaded Fuelbreak Project (2019)

There is also one adjacent timber and fuels project that has been proposed and is awaiting a decision, the Mount Pinos Forest Health Project. Yet, no cumulative impacts analysis of the environmental effects of these projects has ever been conducted. Notably, the U.S. Forest Service states that it plans to implement future similar projects in the LPNF following the completion of this EA. Clearly, expansion of this Project throughout the entire LPNF is not just reasonably foreseeable but expected. The cumulative effects of implementing this Project across the entire LPNF must be reviewed in an EIS and not piecemealed in smaller EAs.

As an example, the Project Area would, in essence, connect the Cuddy Valley Forest Health/Fuels Reduction Project, Frazier Mountain Vegetation Management Project, Frazier Park Community Defense Zone Project, Mount Pinos Forest Health Project, and Tecuya Ridge Shaded Fuelbreak Project such that there is a 52,000-acre contiguous area of impact. Those previously proposed or approved projects cover a collective area of about 7,500 acres. So another way to consider this is that the Project would essentially expand their collective footprint by about 600%. As these projects all involve native vegetation removal—including via use of heavy equipment—there are likely significant cumulative effects just in this one area of the LPNF.

There has also been ongoing roadside hazard tree removal throughout much of the Project Area, which adds to the overall effect of dead tree removal. Standing dead trees, or snags, are ecologically vital to forested ecosystems (Bull et al., 1999; Hutto, 2006; Thorn et al., 2020), thus their removal across large portions of the landscape as part of the Project and in conjunction with past projects and activities will likely cause significant cumulative effects on ecosystem function and wildlife habitat.

One of the desired conditions resulting from the Project according to the Project Description is "for the purpose of aiding suppression efforts…" Suppression efforts includes a broad array of activities conducted during wildfire containment operations, but common activities include bulldozing fire breaks and creating hand lines. There are numerous impacts suppression efforts can have on the environment, especially when heavy equipment such as bulldozers are involved (Backer et al., 2004). The U.S. Forest Service stated in the 2018 Record of Decision for the Strategic Community Fuelbreak Improvement Project in the Monterey Ranger District (p. 6):

> Repeated use of bulldozers to reopen historical firelines has resulted in scarring that is visible to both wilderness and non-wilderness visitors. Each time one of these strategic firelines is opened during an emergency event, the impact on the resources is compounded. My decision will provide a proactive approach to reducing the reliance on mechanized equipment and subsequently reduce fire suppression impacts on the landscape.

Interestingly, the 2015 Fuels Report for that project stated (p. 5):

> Increased firefighter access and production rates – Both aerial and ground-based firefighters have improved fireline construction rates in the lighter fuels associated with fuelbreaks. Hand crew fireline construction rates can increase up to six times when working in grass dominated fuels rather than in chaparral. Dozers have similar increases in production rates and air tankers can reduce coverage levels in lighter fuels; allowing their retardant to be effectively spread over a greater distance during a single drop…

In other words, the U.S. Forest Service justified that fuel break project in part by saying that it would reduce reliance on bulldozers during fire suppression operations but then contradicted this reasoning by saying that fuel breaks *facilitate increased rates* of fire break construction with bulldozers.

It is therefore reasonable to assume that the Project's creation of fuel breaks across the landscape will increase the use of bulldozers to create fire breaks both within existing fuel breaks and in adjacent areas during fire suppression operations. These represent likely future cumulative and indirect effects that must be analyzed in an EIS. An important question that must be answered as well is: will the construction of fuel breaks and the consequent direct and indirect effects on vegetation, soil, and water be worth it considering that fuel breaks are not particularly effective in aiding in large, weather-driven fire containment (Syphard et al., 2011a)?

The Project Area would also have considerable overlap with other U.S. Forest Service projects unrelated to timber and fuels. For example, the West Cuesta Ridge Sustainable Recreation and Botanical Area Restoration Project proposed in 2019 (a decision is expected in 2022) covers most of West Cuesta Ridge, which is also largely included in the Project Area. The West Cuesta Project would involve creating a mountain bike trail network in the area. There are potential cumulative impacts as the Project would remove vegetation across areas where vegetation will be removed to create or reroute trails.

The Project Area also includes the La Panza Communications Site, where a new communications tower has been proposed. That tower exceeds the maximum height of existing facilities on site and therefore may affect scenic integrity in the area. Additional disturbance in the form of fuel break construction may further diminish scenic integrity.

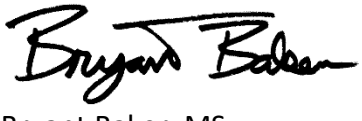
The additive and incremental effects from each of these past, present, and reasonably foreseeable future projects must be considered together and assessed in an EIS.

CONCLUSION

For the foregoing reasons the U.S. Forest Service must prepare an EIS in order to ensure that all of the Project's potentially significant impacts are disclosed and analyzed in accordance with NEPA. It is imperative that the U.S. Forest Service conducts an appropriate level of environmental review for a project of such immense scale and scope, and the best available science must be incorporated into this decision-making process.

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.

Sincerely,



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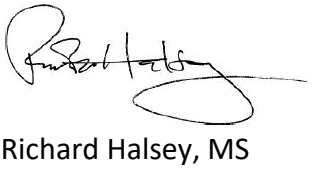

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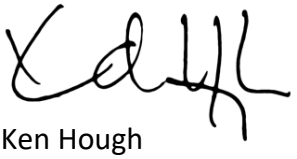

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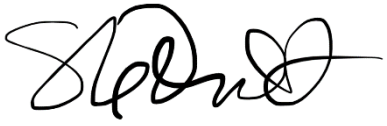

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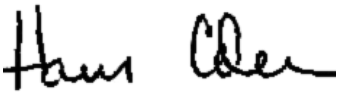

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Tables and Figures

Table 1

Summary of GIS analysis of overlap between IRAs and the Project Area (ERP). Note that we only analyzed the portions of non-Wilderness IRAs that are within the LPNF.

IRA Name	FHTU	FBDZ	Total ERP	Non-ERP	Total IRA (LPNF, Non-Wilderness)	Percent Overlap
Antimony	1261	9684	10945	29942	40887	26.8
Bear Canyon		81	81	1589	1670	4.9
Bear Mountain		283	283	629	912	31.0
Big Rocks		2294	2294	9572	11866	19.3
Black Butte		740	740	948	1687	43.8
Black Mountain		1791	1791	15016	16807	10.7
Camuesa		1504	1504	6705	8209	18.3
Chalk Peak	331	514	846	70	916	92.3
Condor Point		2494	2494	12398	14892	16.7
Cuyama		1294	1294	18244	19538	6.6
De La Guerra		1358	1358	4060	5418	25.1
Diablo		842	842	18756	19597	4.3
Fox Mountain	8435	4776	13211	38761	51972	25.4
Garcia Mountain	1684	1288	2973	4793	7766	38.3
Horseshoe Springs	139	2484	2623	11465	14088	18.6
Juncal		722	722	11555	12277	5.9
La Brea		551	551	13426	13977	3.9
La Panza		650	650	4296	4946	13.1
Little Pine		251	251	1064	1315	19.1
Los Machos Hills		1621	1621	9490	11112	14.6
Machesna Mountain		728	728	11418	12146	6.0
Madulce Buckhorn		803	803	13374	14177	5.7
Manzana	63	22	85	56	141	60.3
Miranda Pine		2061	2061	11241	13302	15.5
Mono		1595	1595	26546	28141	5.7
Quatal		1028	1028	6225	7253	14.2
Santa Cruz		1999	1999	19175	21173	9.4
Sawmill - Badlands	1688	9267	10955	40150	51106	21.4
Sespe - Frazier	3482	15161	18643	87583	106227	17.6
Spoor Canyon	4135	1952	6087	7496	13584	44.8
Stanley Mountain		1332	1332	13332	14664	9.1
Tepusquet Peak	3027	2567	5594	74	5668	98.7
Tequepis	2695	3276	5971	3106	9078	65.8
White Ledge		382	382	18251	18632	2.0

Table 2

Summary of GIS analysis of overlap between designated critical habitat for threatened and endangered animal species and the Project Area.

Species	Listing Status	Critical Habitat Within Project Area (ac)
Arroyo toad	Threatened	1365
California condor	Endangered	1067
California red-legged frog	Threatened	50595
Conservancy fairy shrimp	Endangered	3420
Least Bell's vireo	Endangered	1527
Southwestern willow flycatcher	Endangered	133
Vernal pool fairy shrimp	Threatened	4473

Table 3

Summary of GIS analysis of overlap between designated critical habitat for threatened and endangered steelhead DPS and the Project Area. Note that steelhead critical habitat is delineated as miles of stream segments.

Species	Listing Status	Critical Habitat Within Project Area (mi)
Southern California DPS	Endangered	22.4
South-Central California Coast DPS	Threatened	18.6

Table 4

Length of individual streams designated as critical habitat for the south-central California coast DPS (steelhead) within the Project Area.

County	Stream	Miles
Monterey	Alder Creek	0.290
Monterey	Arroyo Seco River	2.048
Monterey	Big Sur River	0.162
Monterey	James Creek	0.377
Monterey	Little Sur River	1.218
Monterey	Mill Creek	1.626
Monterey	Paloma Creek	0.206
Monterey	Partington Creek	0.318
Monterey	Piney Creek	2.080
Monterey	Plaskett Creek	0.735
Monterey	Prewitt Creek	1.141
Monterey	Salmon Creek	0.703
Monterey	Santa Lucia Creek	0.770
Monterey	South Fork Little Sur River	0.086
Monterey	Tassajara Creek	0.237
Monterey	Villa Creek	0.318
Monterey	Willow Creek	0.378
San Luis Obispo	Dairy Creek	0.143
San Luis Obispo	Morro Creek	4.611
San Luis Obispo	San Carpoforo Creek	0.412
San Luis Obispo	San Luisito Creek	0.045
San Luis Obispo	Tassajera Creek	0.717

Table 5

Length of individual streams designated as critical habitat for the southern California DPS (steelhead) within the Project Area. Note that there are several miles along unnamed streams but which are still designated critical habitat within the Project Area.

County	Stream	Miles
Santa Barbara	Unnamed (Multiple)	9.410
Santa Barbara	Arroyo Hondo	1.259
Santa Barbara	Carpinteria Creek	0.102
Santa Barbara	Dos Pueblos Canyon	0.340
Santa Barbara	El Capitan Creek	0.128
Santa Barbara	Eldorado Creek	0.528
Santa Barbara	Gato Canyon	0.345
Santa Barbara	Gobernador Creek	0.105
Santa Barbara	La Brea Creek	0.544
Santa Barbara	Manzana Creek	0.543
Santa Barbara	Maria Ygnacio Creek	0.065
Santa Barbara	North Fork La Brea Creek	7.615
Santa Barbara	Refugio Creek	0.316
Santa Barbara	San Jose Creek	0.238
Santa Barbara	Steer Creek	0.073
Santa Barbara	Sutton Creek	0.065
Santa Barbara	Tecolote Canyon	0.313
Santa Barbara	Tecolotito Creek	0.465

Table 6

Occurrences of sensitive, threatened, and endangered animal species within the Project Area according to the CNDDB.

Common Name	Listing Status	Occurrences
Blunt-nosed leopard lizard	Endangered (ESA)	5
California condor	Endangered (ESA)	2
Conservancy fairy shrimp	Endangered (ESA)	1
Least Bell's vireo	Endangered (ESA)	6
Longhorn fairy shrimp	Endangered (ESA)	2
Smith's blue butterfly	Endangered (ESA)	15
Southwestern willow flycatcher	Endangered (ESA)	2
Tidewater goby	Endangered (ESA)	1
Arroyo toad	Threatened (ESA)	3
California red-legged frog	Threatened (ESA)	13
Vernal pool fairy shrimp	Threatened (ESA)	2
Western snowy plover	Threatened (ESA)	1
California legless lizard	Sensitive (U.S. Forest Service)	10
Foothill yellow-legged frog	Sensitive (U.S. Forest Service)	17
Lesser slender salamander	Sensitive (U.S. Forest Service)	3
Monarch	Sensitive (U.S. Forest Service)	11
Mount Pinos lodgepole chipmunk	Sensitive (U.S. Forest Service)	2
Pallid bat	Sensitive (U.S. Forest Service)	1
San Emigdio blue butterfly	Sensitive (U.S. Forest Service)	1
Southern rubber boa	Sensitive (U.S. Forest Service)	7
Tehachapi white-eared pocket mouse	Sensitive (U.S. Forest Service)	3
Townsend's big-eared bat	Sensitive (U.S. Forest Service)	4
Two-striped gartersnake	Sensitive (U.S. Forest Service)	15
Western pond turtle (southern Pacific pond turtle)	Sensitive (U.S. Forest Service)	34
Yellow-blotched salamander	Sensitive (U.S. Forest Service)	1

Table 7

CNDDB occurrences of sensitive plant taxa relative to the Project Area.

Scientific Name	All CNDDB Occurrences	CNDDB Occurrences in Project Area	Percent of CNDDB Occurrences in Project Area
Abies bracteata	80	17	21
Acanthoscyphus parishii var. *abramsii*	7	4	57
Agrostis hooveri	31	2	6
Allium hickmanii	32	1	3
Allium howellii var. *clokeyi*	25	18	72
Arctostaphylos cruzensis	8	1	13
Arctostaphylos edmundsii	8	2	25
Arctostaphylos luciana	10	6	60
Arctostaphylos pilosula	58	8	14
Arctostaphylos refugioensis	27	11	41
Calochortus fimbriatus	93	39	42
Calochortus obispoensis	46	5	11
Calochortus palmeri var. *palmeri*	111	7	6
Calochortus simulans	109	33	30
Calycadenia micrantha	22	2	9
Calycadenia villosa	59	3	5
Camissoniopsis hardhamiae	22	1	5
Carex obispoensis	29	5	17
Caulanthus amplexicaulis var. *barbarae*	11	7	64
Caulanthus lemmonii	91	15	16
Chorizanthe blakleyi	12	7	58
Chorizanthe breweri	45	9	20
Clarkia jolonensis	21	4	19
Dacryophyllum falcifolium	12	1	8
Delphinium hutchinsoniae	27	3	11
Delphinium umbraculorum	95	48	51
Eriastrum luteum	34	2	6
Eriogonum butterworthianum	4	3	75
Eriogonum kennedyi var. *alpigenum*	9	1	11
Eriophyllum lanatum var. *hallii*	6	3	50
Fritillaria liliacea	82	1	1
Fritillaria ojaiensis	49	17	35
Fritillaria viridea	22	2	9
Galium californicum ssp. *luciense*	30	16	53
Galium clementis	15	6	40
Galium hardhamiae	24	4	17
Horkelia cuneata var. *puberula*	103	4	4
Juncus luciensis	37	5	14
Layia heterotricha	125	26	21
Lonicera subspicata var. *subspicata*	31	10	32
Malacothamnus palmeri var. *lucianus*	9	2	22
Malacothamnus palmeri var. *palmeri*	10	2	20
Malacothrix saxatilis var. *arachnoidea*	15	1	7
Monardella linoides ssp. *oblonga*	57	25	44
Monardella palmeri	24	6	25
Navarretia peninsularis	35	6	17
Nemacladus secundiflorus var. *robbinsii*	9	3	33
Pedicularis dudleyi	7	2	29
Pentachaeta exilis ssp. *aeolica*	16	2	13
Plagiobothrys uncinatus	14	2	14
Sanicula maritima	17	1	6
Sidalcea hickmanii ssp. *anomala*	4	3	75
Sidalcea hickmanii ssp. *hickmanii*	17	3	18
Sidalcea hickmanii ssp. *parishii*	24	9	38
Sidalcea neomexicana	30	2	7
Streptanthus albidus ssp. *peramoenus*	103	5	5
Streptanthus campestris	73	1	1
Symphyotrichum defoliatum	102	1	1
Thelypteris puberula var. *sonorensis*	27	6	22
Thermopsis macrophylla	8	8	100

Table 8

Proportion of proposed Wilderness, potential Wilderness, and national scenic areas (currently being considered by Congress) within the Project Area.

CCHPA Name	CCHPA Type	Project Area (acres)	
		FBDZ	FHTU
Diablo Caliente	New Wilderness		563
Fox Mountain	Potential Wilderness		2714
Machesna Mountain	Potential Wilderness		61
Black Mtn	Scenic Area		1594
Condor Ridge	Scenic Area	1985	3726
Chumash	Wilderness Addition		1329
Dick Smith	Wilderness Addition		2006
Garcia Mountain	Wilderness Addition	1700	848
Machesna Mountain	Wilderness Addition		347
Matilija	Wilderness Addition		2
San Rafael	Wilderness Addition	12465	3524
Santa Lucia	Wilderness Addition		1197
Sespe	Wilderness Addition		1024

Figure 1

Map of the LPNF showing designated Wilderness, IRAs, and the portions of IRAs included in the Project Area.

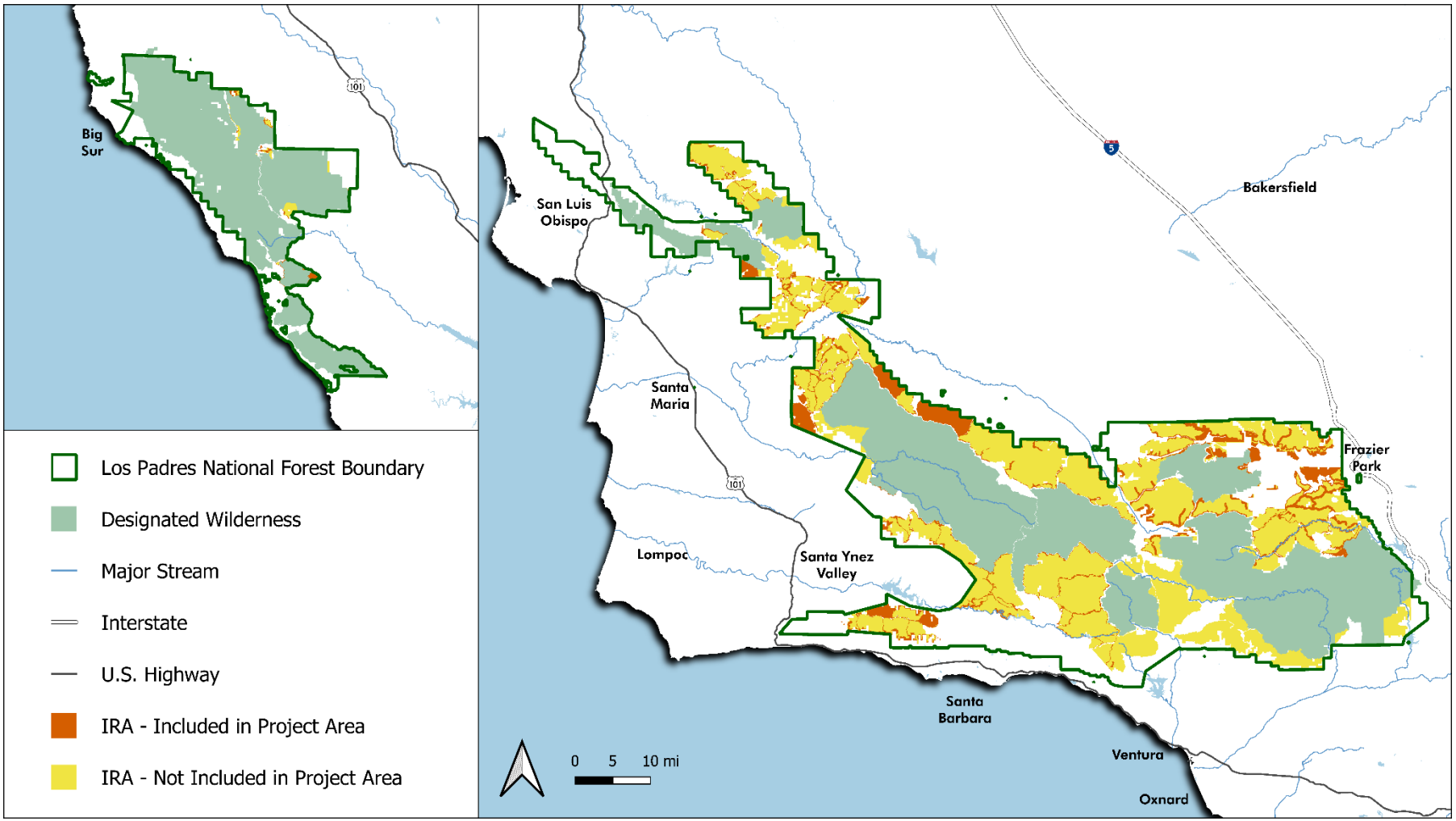

Figure 2

Map of the Tepusquet Peak IRA and the Project Area. EVeg vegetation cover data are only shown for the portion of the IRA that is within the Project Area.

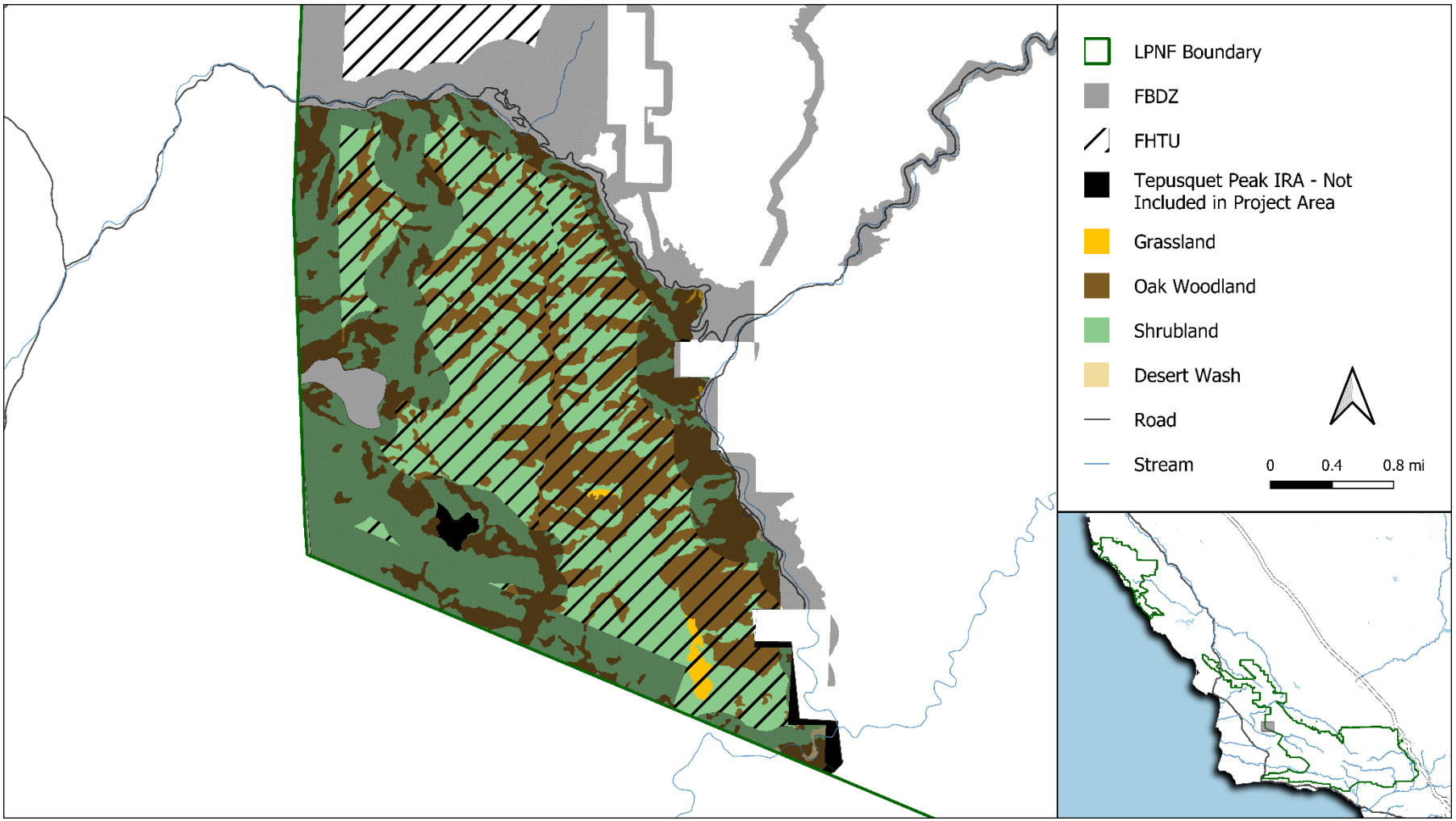

Figure 3

Map of the Tequepis IRA and the Project Area. EVeg vegetation cover data are only shown for the portion of the IRA that is within the Project Area.

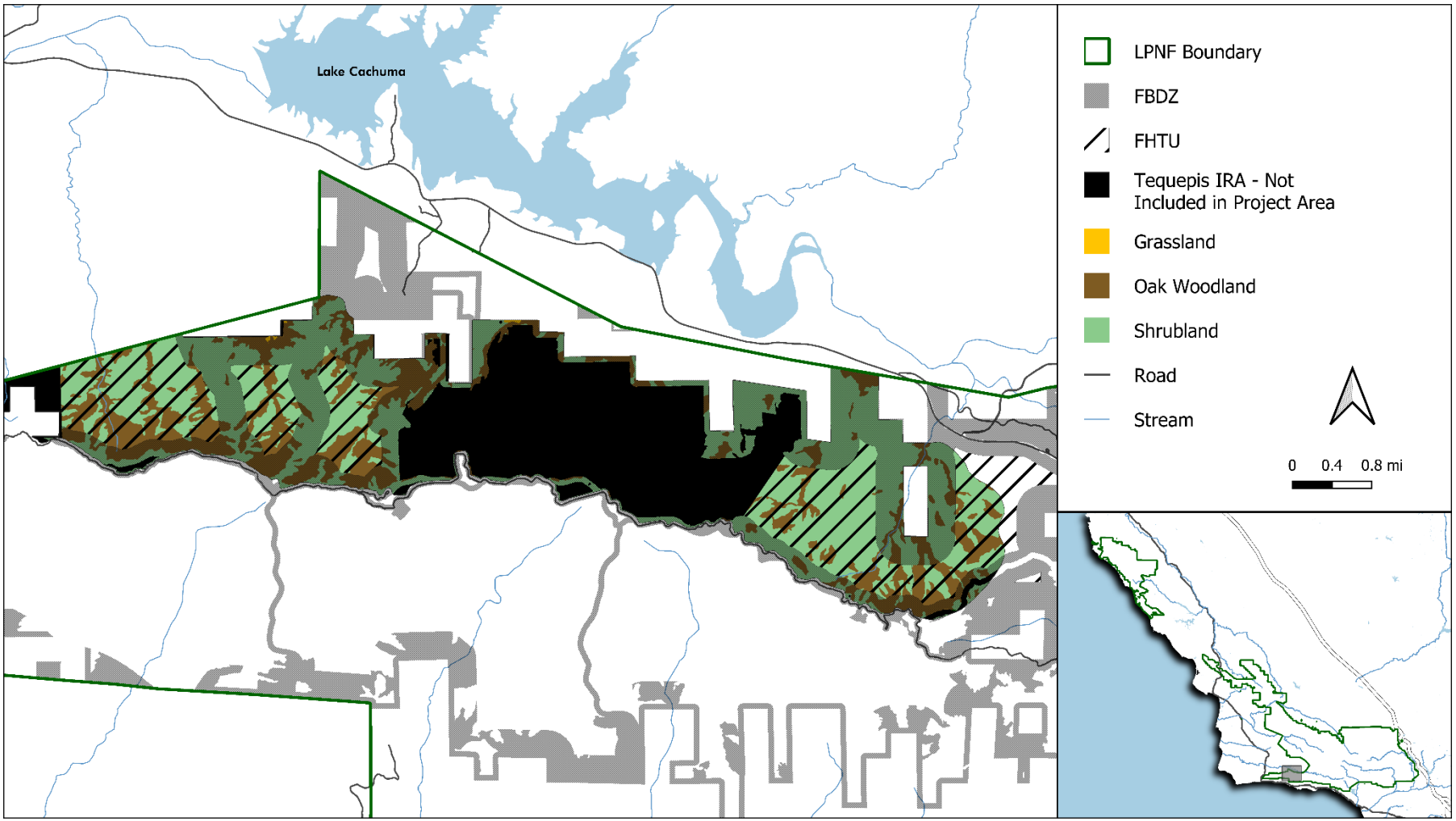

Figure 4

Top: Aerial image of the West Camino Cielo area of the Santa Ynez Mountains in the LPNF taken in 1953 before construction of the Camino Cielo Fuel Break. Bottom: Aerial image of the same area taken in 1976 after construction of the Camino Cielo Fuel Break. Note the large linear swath of land that is substantially altered along the crest of the Santa Ynez Mountains. Images obtained from https://earthexplorer.usgs.gov/.

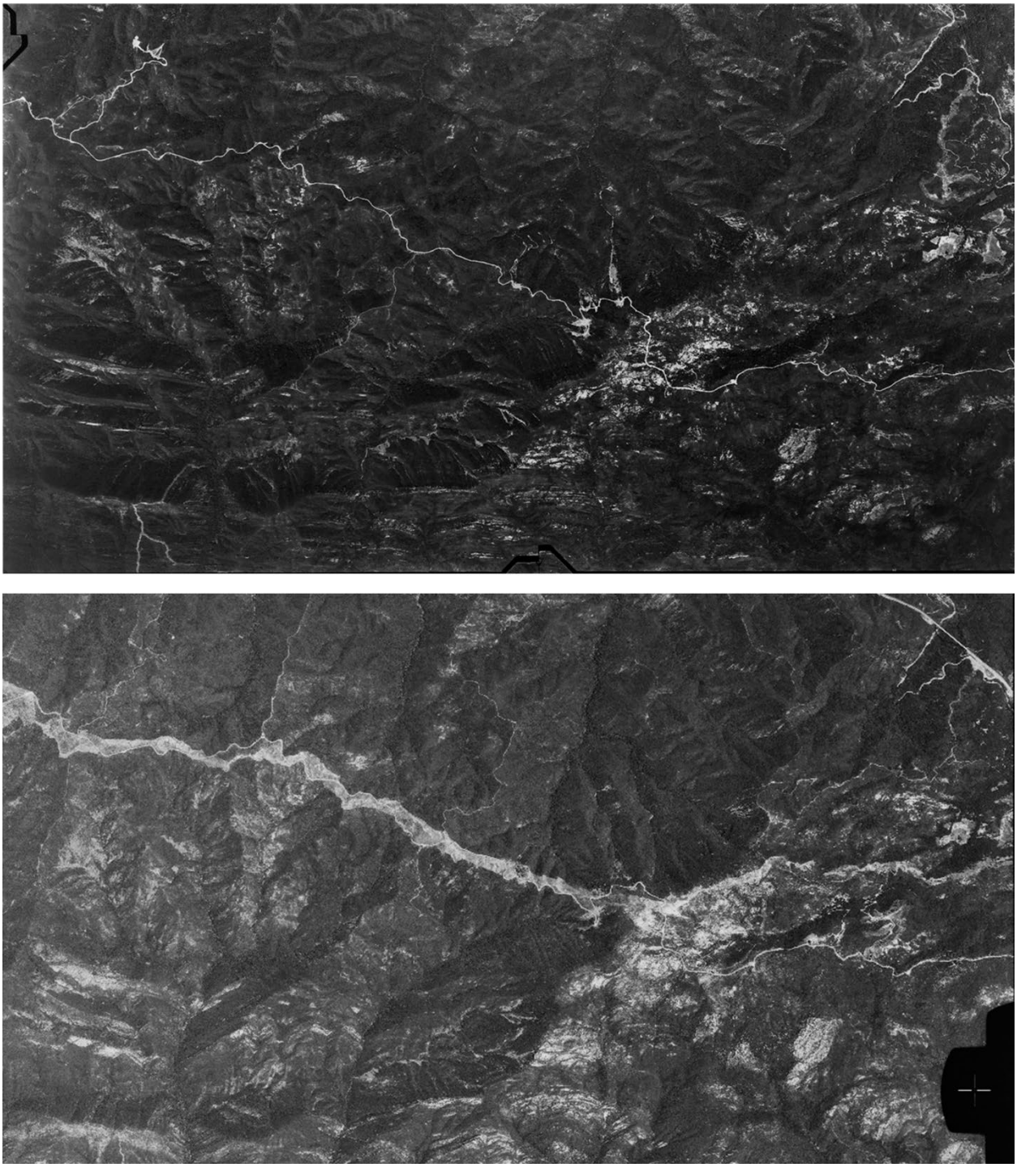

Figure 5

Photo of the fuel break depicted in Figure 4 as seen from just east of Lizard's Mouth (looking west) in 2018. Photo by Bryant Baker/Los Padres ForestWatch.

Figure 6

Part of the same fuel break in a different section of the Santa Ynez Mountains during and shortly after shrub mastication in 2008. Undisturbed vegetation (mature chaparral in this case) on either side of the fuel break represents what the masticated area once looked like. Photos by Jeff Kuyper/Los Padres ForestWatch.

Figure 7

Map of lands that would be designated as new and potential Wilderness as well as national scenic areas via the Central Coast Heritage Protection Act and where these areas overlap the Project Area.

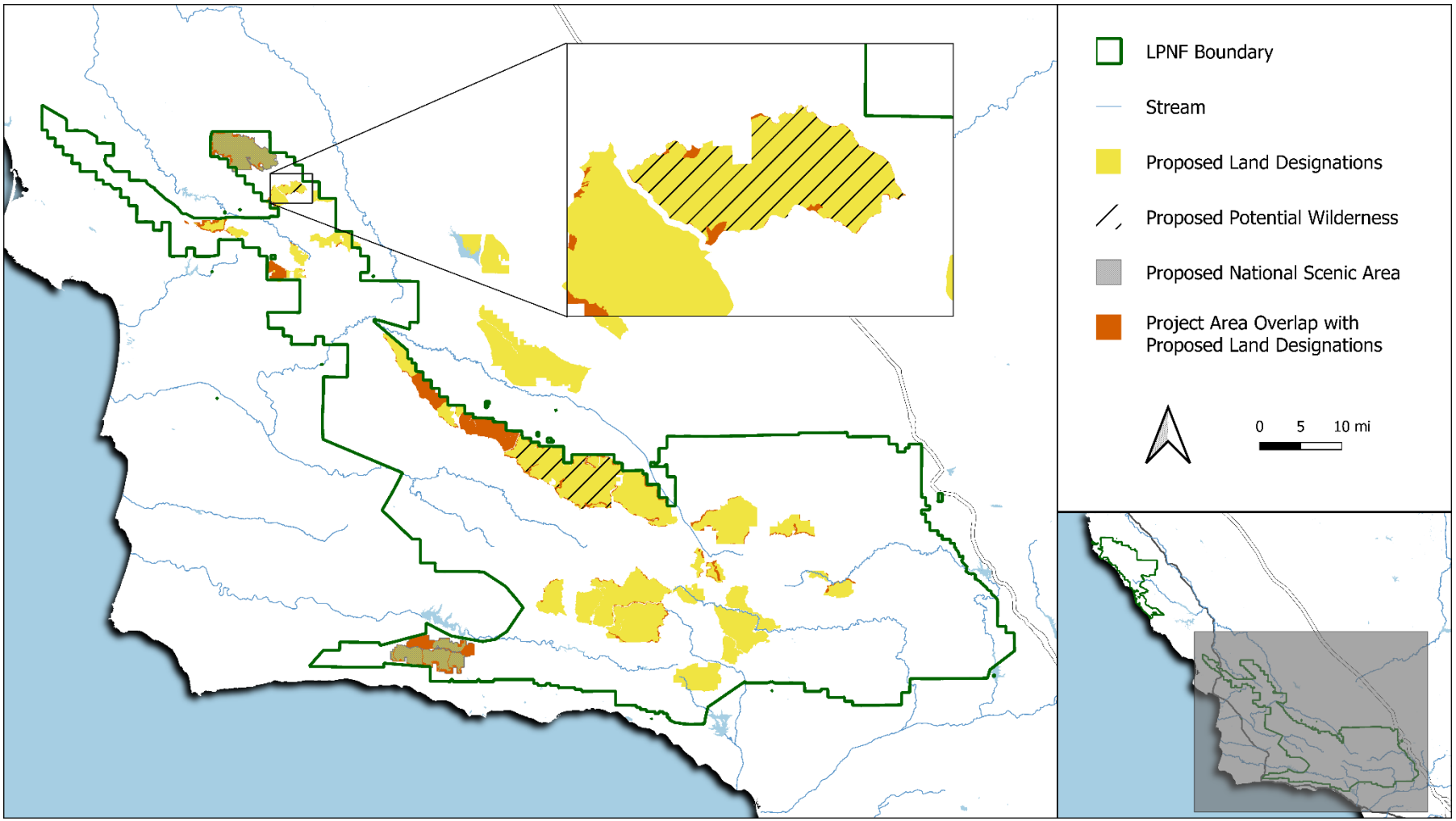

Figure 8

Map of the LPNF showing designated critical habitat and overlap with the Project Area.

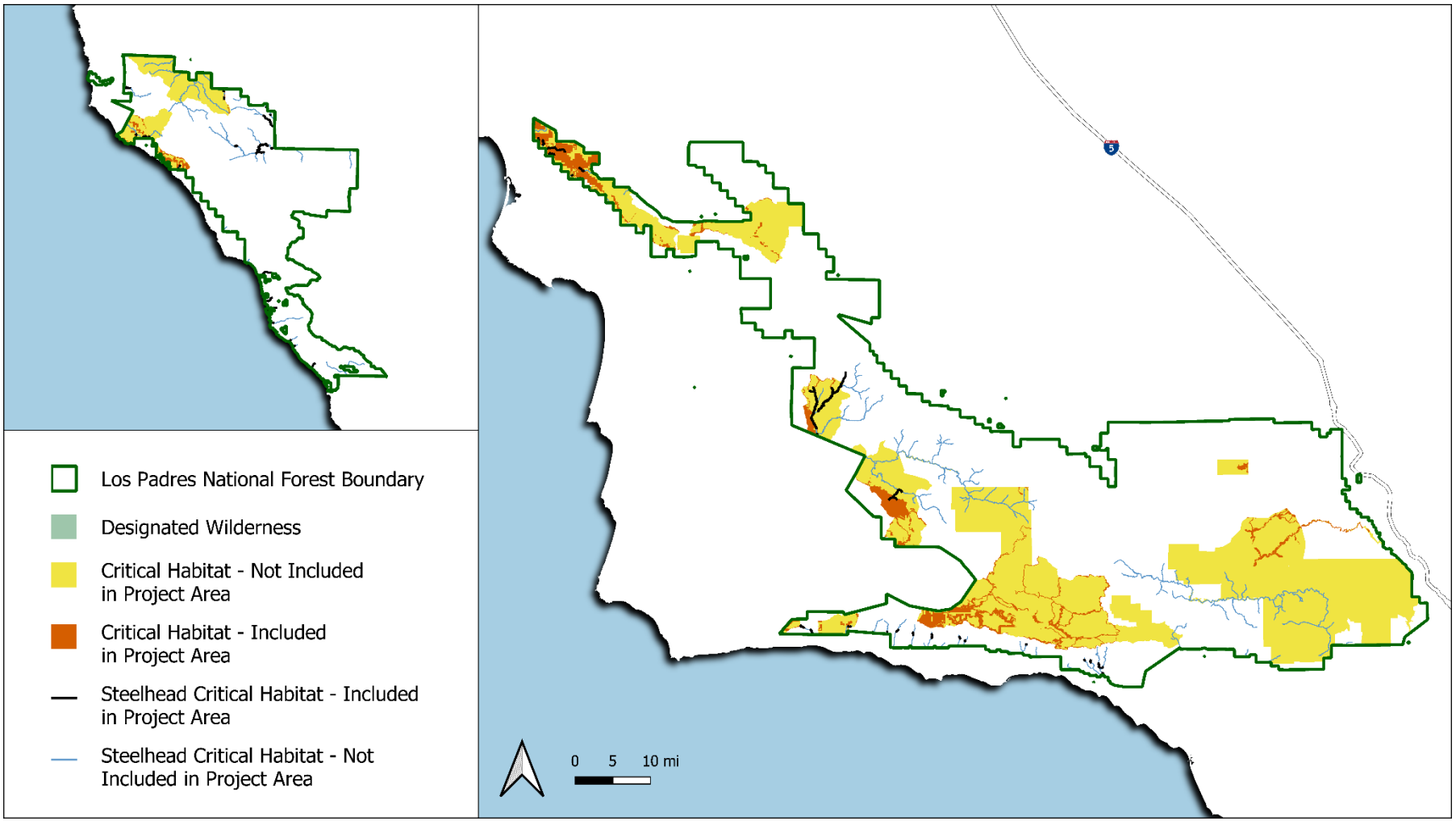

Figure 9

Photo of steelhead in Davy Brown Creek within the Project Area on April 4, 2022 at approximately 34.737749°, -119.967341°. Photo by Bryant Baker/Los Padres ForestWatch.

Figure 10

Photo of a two-striped gartersnake near Davy Brown Creek within the Project Area on June 9, 2019 at approximately 34.749497°, -119.966473°. Photo by Bryant Baker/Los Padres ForestWatch.

Figure 11

Photo of a two-striped gartersnake near Davy Brown Creek within the Project Area on June 9, 2019 at approximately 34.745212°, -119.967267°. Photo by Bryant Baker/Los Padres ForestWatch. Note: this is a separate individual than the one in Figure 9.

Figure 12

Photo of an area in 2019 that was pile burned following non-commercial thinning of pinyon-juniper woodland in the Mt. Pinos Ranger District. Note, too, that the surrounding herbaceous vegetation is dominated by invasive cheatgrass. Photo by Bryant Baker/Los Padres ForestWatch.

Figure 13

Photo of an area within the fuel break along West Camino Cielo in the Santa Barbara Ranger District with OHV trespass and erosion in 2018. Photo by Bryant Baker/Los Padres ForestWatch.

Figure 14

An area within the fuel break along West Camino Cielo in the Santa Barbara Ranger District with significant erosion from OHV trespass in 2017. Photo by Bryant Baker/Los Padres ForestWatch.

Exhibit 1

Hunt & Associates
Biological Consulting Services

U.S. Forest Service
Attn: Supervisor Christopher Stubbs
1980 Old Mission Dr.
Solvang, CA 93463 21 September 2022

Subject: Comments on Proposed Los Padres National Forest Ecological Restoration Project, California.

Supervisor Stubbs,

I am a wildlife biologist and consultant with over 35 years of field experience with special-status amphibians and reptiles in central and southern California, particularly in Monterey, San Benito, San Luis Obispo, Santa Barbara, Ventura, Kern, and Los Angeles counties. I am writing to express my concerns about potentially significant negative impacts to native herpetofauna from the proposed Los Padres National Forest (LPNF) Ecological Restoration Project (ERP). My comments concern the following special-status species:

- Arroyo toad (*Anaxyrus californicus*) – listed as Threatened under the federal Endangered Species Act;
- California red-legged frog (*Rana draytonii*) – listed as Threatened under the federal Endangered Species Act;
- Foothill yellow-legged frog (*Rana boylii*) – classified as a Sensitive species by the U.S. Forest Service;
- Southwestern pond turtle (*Emys marmorata*) – classified as Sensitive by the U.S. Forest Service, and;
- Two-striped garter snake (*Thamnophis hammondii*) –classified as Sensitive by the U.S. Forest Service.

Ecological Restoration Project Description. The underlying premise of the ERP is that natural vegetation on national forest lands must be "managed". In the case of chaparral and other scrub communities, fire frequency is considered too high. In woodland communities, fire frequency is considered too low because of fire suppression, which has increased tree density and allowed understory vegetation to become overgrown. Two types of treatments are proposed: a) Forest Health Treatment Units totaling almost 50,000 acres, and; b) Fuelbreak and Defense Zones totaling over 186,000 acres.

Vegetation treatment in Forest Health Treatment Units focuses on reducing conifer and hardwood tree density in woodland habitats by selectively removing trees < 24 inches dbh and

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by reducing or eliminating the woodland understory by thinning, mastication, and mowing as initial treatment methods, then using prescribed burns to maintain managed conditions.

Vegetation treatment in Fuelbreak and Defense Zones (aka Fuel Reduction Treatments) targets chaparral/shrub habitats and uses mechanical or hand-thinning of trees and shrubs, mechanical and/or hand-piling and burning of cut material, mastication, prescribed burning of understory vegetation, targeted grazing, mowing, weed-whipping, and planting and seeding along roads and in buffers. In forested habitats, an undetermined number of hardwood and/or conifer trees will be retained to allow for long-term shaded fuelbreaks. The goal is to create and maintain a network of fuelbreaks that vary in width according to vegetation type: 1,500 feet wide through forested (conifer and hardwood) habitats, 300 feet wide through chaparral/shrub communities, and 100 feet wide through grasslands. Fuel breaks and buffers would be established and maintained along existing roads, motorized trails, Forest Service administrative sites (including developed recreation sites, fire stations, and ranger district offices), communication sites, and property lines.

Shared Life History Features of Focus Species. The scope of the ERP includes portions of National Forest lands across five counties throughout central and southern California, and overlaps extensively with the geographic ranges of the focus species and many other special-status amphibians and reptiles.

The five focus species co-occur on LPNF lands where they are strongly associated with aquatic and riparian habitats during one or more life history stages. Arroyo toads (AT), California red-legged frogs (CRLF), and foothill yellow-legged frogs (FYLF) use aquatic habitats for courtship, breeding, egg laying, and larval development. Southwestern pond turtles (SWPT) and two-striped garter snakes (TSGS) spend most of the year in aquatic and riparian habitats, but also use adjacent upland habitats. A shared feature of the natural history of all of these species is their extensive use of upland habitats for foraging, overwintering, dispersal, and, in the case of SWPT, egg laying. Radio-tracking and other studies have demonstrated that each of these species are capable of long-distance movements of hundreds to several thousands of feet from aquatic habitats into surrounding upland woodland and scrub habitats (e.g., Hunt, 1994; Ramirez, 2003a,b; AECOM, 2010). These species show strong site fidelity to natal habitats and will attempt to return to them when displaced. Consequently, although the ERP does not specifically target riparian habitats, it could affect these species where Forest Service trails and roads cross drainages, as well in upland woodland, chaparral, and grassland habitats adjacent to drainages.

Potential Significant Effects of Focus Species. The ERP would affect almost 370 square miles of scrub and woodland habitats across the LPNF. Significant impacts to the focus species are expected from the following actions:

Mastication, Chipping, and/or Mowing of Vegetation. Since 2007, I've been involved in annual giant reed eradication efforts along 15 stream miles of the Ventura River and Matilija Creek in Ventura County (Hunt, 2009). The project area includes portions of the Los Padres National Forest (Ojai Ranger District). Mastication was employed as a cost-effective method of reducing

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the standing biomass of giant reed, a highly invasive, non-native grass, but only in very limited areas that supported monotypic stands of giant reed so that collateral damage to native habitats could be avoided. The ERP proposes mastication as a routine means of reducing understory vegetation in woodlands and for creating and maintaining 300-foot wide firebreaks through stands of native chaparral/shrub vegetation on over 186,000 acres. The efficiency and cost benefits of using mastication for vegetation removal and maintenance means this may be the method of choice on LPNF lands with the ERP. However, the use of a masticator in chaparral/shrub vegetation is non-selective and will result in significant and widespread loss of many plant and wildlife species, including the focus species.

Habitat Fragmentation. There is an extensive literature on the manifold negative effects of habitat fragmentation on plant and animal populations. The ERB would transform contiguous stands of scrub habitat into a mosaic landscape of smaller stands that average 446 acres and are surrounded by 300-foot wide fuelbreaks. Native tree density will be thinned and understory vegetation will be mowed or masticated in coniferous and hardwood woodlands to create 1,500-foot wide fuelbreaks. These fuelbreaks will be regularly mowed or masticated to manage native vegetation. CRLF, TSGS, and SWPT in particular could experience increased mortality and decreased gene flow between populations as individuals disperse in adjacent upland woodland and scrub habitat and encounter these fuelbreaks.

Direct Mortality. Vehicles and other heavy equipment, such as trucks, masticators, backhoes, etc., can cause direct mortality to all life stages of the focus species. Most or all of the motorized and non-motorized trails and roads that traverse drainages in LPNF are at-grade crossings. The five species discussed herein are aquatic or associated during one or more life history stages. Studies have documented loss of entire cohorts of egg masses as well as adult AT and CRLF at road crossings in LPNF due to vehicular traffic (e.g., Sweet, 1992; Hunt, 2007), as a result of vehicles driving through stream/road crossings. Even selective thinning of trees using hand-cutting methods in the proposed Forest Health Treatment Units will require the use of heavy equipment, such as cranes, backhoes, and trucks, to remove and transport cut logs. Increased vehicular traffic at creek crossings and in vegetation clearance zones could create a significant source of mortality for these species.

Soil Erosion and Sedimentation. Vegetation treatment under the Forest Health Treatment or the Fuelbreaks and Defense Zones method will cause significant soil disturbance that could result in widespread soil erosion across treated areas and increased sedimentation into drainages. Sedimentation alters habitat quality, foraging habits, and degrades the prey base for all life history stages of the focus species. Additionally, silt smothers amphibian eggs, resulting in loss of entire cohorts.

Microclimatic Changes and Microhabitat Loss. Reducing tree canopy cover and understory cover will increase insolation of the soil, elevate soil temperatures, and decrease soil moisture. Mastication, followed by prescribed burning to remove treated vegetation, also will remove the leaf/stick litter layer where the majority of arthropod species that comprise the prey base for adult CRLF, FYLF, AT, and TSGS reside. Logs, branches, and other downed wood, in addition

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to leaf litter, provides essential refugia for juveniles of these species when they move out of aquatic and riparian habitats into adjacent upland habitats. The proposed ERP will remove or significantly degrade microhabitat quality for these species by removing these habitat elements.

Proliferation of Non-Native Vegetation. Invasive, non-native plants, particularly grasses and forbs, degrade the value of natural plant communities to wildlife. Non-native plants are highly adapted to rapidly colonize disturbed conditions, such as those that will be created and maintained by the proposed fuelbreaks. It is highly likely that the fuelbreaks will facilitate the spread of non-native grasses and forbs deep into woodland and scrub habitats and could elevate the fire potential over existing conditions.

Conclusions. The five special-status species discussed in this letter co-occur across extensive portions of LPNF and overlap broadly with the areas proposed for vegetation treatment in the ERP. The proposed ERP will likely have significant direct and indirect effects on arroyo toads, California red-legged frogs, foothill yellow-legged frogs, southwestern pond turtles, and/or two-striped garter snakes as a result of:

- Direct mortality during vegetation removal, specifically from use of masticators to treat vegetation and other heavy equipment, increased vehicular traffic at stream crossings, etc;
- Habitat fragmentation created by fuelbreaks and defense zones that increase edge effects (e.g., increased predation; microclimatic changes caused by habitat alteration, etc.), restrict gene flow, and decrease long-term effective population size for these species;
- Soil erosion in uplands that results in downslope sedimentation of aquatic and riparian habitats;
- Microclimatic and microhabitat changes that elevate soil temperatures and lower soil moisture levels; removal of woody debris (logs, bark, stick litter) that are used by juvenile and adults as refugia when moving from aquatic to upland habitats to overwinter and/or disperse;
- Removal of natural vegetation will create and maintain disturbance conditions that promote colonization and spread of invasive, non-native plants, particularly grasses and forbs that selectively outcompete native plant species, significantly lower habitat quality, and elevate fire potential.

These impacts will be long-term, permanent features of the ERP because achieving the desired goals in the Forest Health Treatment Units and Fuelbreak and Defense Zones requires regular maintenance.

Sincerely,

Lawrence Hunt

Lawrence E. Hunt

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References.

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recommendations. Prep. for USDA Forest Service, Los Padres National Forest, Goleta, Santa Barbara County, California. 198 pp.

Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California amphibian and reptile species of special concern. California Dept. Fish and Wildlife, Sacramento, CA, and Univ. Calif. Press, Berkeley, CA. 389 pp.

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Resume for
Lawrence E. Hunt

Hunt & Associates Biological Consulting Services
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Santa Barbara, California 93111

Office: (805) 967-8512 Cell: (805) 689-7423
e-mail: *anniella@verizon.net*

Title: Consulting Biologist; Principal at Hunt & Associates Biological Consulting Services

Expertise: Herpetology, Mammalogy, and Terrestrial Ecology
Special-Status Species Surveys
Conservation Biology and Habitat Conservation Plans
Habitat Restoration Design and Implementation
Impact Assessment and Mitigation Planning
Spatial Statistics and Biostatistics

Statement of Qualifications. Lawrence Hunt is a herpetologist by training and a consulting biologist with over 30 years of experience with rare, threatened and endangered plant and wildlife species and their habitats in the western United States, Mexico, and Chile, focusing on rare, threatened, and endangered plants, crustaceans, fish, amphibians, reptiles, birds, and mammals of central and southern California. Lawrence Hunt created Hunt & Associates Biological Consulting Services to design and implement biological resource surveys and analyses for biological assessments, biological evaluations, expert opinions, biological resources sections of EIR/EISs, habitat restoration plans, habitat conservation plans (HCPs), statistical data analysis, local, state, and federal resource agency consultation, mitigation analyses, habitat restoration design and implementation, and permit compliance monitoring. Clients include planning departments for city and county governments and planning agencies, state and federal resource management agencies, non-governmental conservation organizations, and private corporations and individuals. Since 1985, Hunt & Associates BCS has been involved in hundreds of projects throughout central and southern California and southern Nevada, as well as international projects in Mexico, Chile, and Portugal.

Representative Project Experience. The following is a sampling of projects that Hunt & Associates has been involved with over the past 25 years. In addition to the field component, many of these projects involved project permitting, such as consultation with U.S. Fish and Wildlife Service on endangered species issues, preparation of Streambed Alteration Agreements with California Department of Fish and Wildlife, and preparation of Mitigation Monitoring and Reporting plans for State and Local agencies.

Habitat Conservation Plans, Habitat Management Plans, and Species Recovery Plans:

1989-1992: Western Pond Turtle Capture and Reintroduction Plan for the Gibraltar Dam Strengthening Project, Santa Ynez River, Santa Barbara County; CA Dept. Fish and Game and County of Santa Barbara.

1990-1993: Origin, Maintenance, and Land Use of Coastal and Inland Dunes of the Santa Maria Basin, San Luis Obispo and Santa Barbara counties, California. The Nature Conservancy, San Luis Obispo.

1993-2000: Kern County Valley Floor Habitat Conservation Plan for Dames & Moore, Inc. and County of Kern Planning and Development Department.

1996-1999: Emma Wood State Beach and Ventura River Estuary Management and Enhancement Plan; CA State Dept Parks and Recreation; City of San Buenaventura.

1998-2000: Status Review for Listing of the Black Legless Lizard, Monterey County; USFWS.

1998-2001: California Red-legged Frog Recovery Plan; Member, Scientific Committee; USFWS.

2001-2002: *Peer review of the Tidewater Goby Recovery Plan*; USFWS.

2002-present: California Tiger Salamander Recovery Plan; Member, Scientific Committee; USFWS.

2002-2005: California Tiger Salamander Habitat Conservation Plan for the Unocal and Dominion Road Parcels; U.S. Fish and Wildlife Service, Ventura Field Office.

2000-2004: Lake Los Carneros Habitat Restoration and Open Space Management Plan; County of Santa Barbara.

2006-2008: California Tiger Salamander Habitat Conservation Strategy; County of Santa Barbara Planning and Development Dept.

2008-2012: Southern Steelhead Recovery Plan for the South-Central California ESU and Southern California ESU; National Marine Fisheries Service. Prepared the *Threats Analysis* and *Recovery Actions* for the Recovery Plan using a modification of the Conservation Action Planning (CAP) Workbooks developed by The Nature Conservancy.

2015-present: California Tiger Salamander Hybridization Study, Santa Barbara County; funded by Section 6 grant from USFWS and CDFW.

2017-present: Monarch Butterfly Habitat Restoration and Management Plan for Honda Valley; City of Santa Barbara.

2020-present: Commissioner, City of Goleta Public Tree Advisory Commission.

Selected Habitat Restoration Projects:

1992-2002: Habitat restoration of the former SP Milling Surface Mine, Lower Ventura River Floodplain, Ventura County.

1997-2003: Habitat restoration of coastal sage scrub, coastal foredunes, and riparian woodland, Tecolote Creek Floodplain, Bacara Hotel and Resort, Santa Barbara County.

2003-2005: Habitat restoration of the Howard/Pacific Rock Quarry, Santa Monica Mtns, Ventura County.

2003-2006: Restoration of coastal dune habitat for the CA legless lizard (*Anniella*), Guadalupe Dunes, San Luis Obispo County.

2005-present: Vernal Pool Amphibian Habitat Management Plan, Casmalia Landfill, Casmalia Hills, Santa Barbara County.

2007-2012: San Marcos Foothills Coastal Sage Scrub and Native Grassland Restoration, San Marcos Foothills, Santa Barbara, Santa Barbara County.

2007-present: Giant Reed Removal Element for the Matilija Dam Removal Project, Ventura River and Matilija Creek watersheds, Ventura County.

2010-2012: San Antonio Creek Bridge Replacement Riparian Restoration Project, Ventura County.

2010-present: Riparian Woodland, Coastal Bluff, and Foredune Restoration Project, Lower Toro Canyon Creek, Santa Barbara County.

2013-2015: Vernal Pool Amphibian Management Plan, Santa Maria Airport, Santa Barbara County.

2015-present: Honda Valley Monarch Butterfly Habitat Restoration and Management Plan, City of Santa Barbara.

2020-present: Atascadero Creek Habitat Restoration Project, Santa Barbara County.

2021-present: San Ysidro Ranch Habitat Restoration Project, Montecito, Santa Barbara County.

Representative Linear Infrastructure Projects Involving Special-Status Plants and Wildlife Surveys, Biological Assessments and Evaluations, EIR/EISs, and Permit Compliance Monitoring.

Electrical Transmission and Cathodic Protection:

1984-1993: Project biologist on five electrical transmission line construction projects (Mobil Oil Corporation, Unocal, and Exxon Corporation) emanating from cogeneration facilities in Monterey, Madera, Kern, Tulare, Fresno, Los Angeles, Riverside, and San Bernardino counties. Responsibilities included resource agency coordination/consultation, designing field survey protocols, organizing and conducting field surveys and vegetation mapping, preparing biological documents, project permitting, and supervising construction monitoring teams during project implementation.

1993-1994: Project biologist to County of Santa Barbara Planning & Development Department on the SCE 65Kv Transmission Line project across southern Santa Barbara County. Responsibilities included pre-construction surveys, constraints analyses, impact assessments, preparation of CEQA permitting documents, and construction monitoring.

1997-1998: Project biologist to ENSR Consulting, Inc. on the ARCO Line 90 Electrical Transmission Project in southern Kern and central Riverside County. Responsibilities included field surveys and report preparation for CEQA permitting documents.

2001-2002: Project biologist to URS Corporation on Enron-Pastoria Creek Power Plant Project. Conducted field surveys in the Pastoria Creek, Tunis Creek, Tejon Creek, and Grapevine Creek watersheds on the western side of the Tehachapi Mountains in Kern County; prepared biological constraints analyses and impact assessments.

2012-2016: Project biologist to U.S. Dept. of Energy for endangered species surveys and biological assessment of proposed 65Kv power line installation, Ciervo Hills, Fresno and Madera counties, CA.

Fiber Optic Transmission:

1988-1992: Project biologist to Dames & Moore, Inc. on the Sprint Fiber Optic Transmission Project in Kern, Los Angeles, and San Bernardino counties, and Clark County, Nevada. Responsibilities included special-status species surveys, wrote CEQA documents, and supervised construction monitoring.

2001-2003: Project biologist/resource specialist and Environmental Compliance Coordinator to the County of Santa Barbara Planning and Development Department on the Level (3) Communications Fiber Optic Transmission Project across western and southern Santa Barbara County. Responsibilities included special-status species surveys, wrote CEQA documents, and supervised construction monitoring.

2002-2004: Project biologist/biological monitoring for EELV Delta IV Program fiber-optic route across Vandenberg Air Force Base, Santa Barbara County. Responsibilities included pre-construction surveys for special-status species, wrote CEQA documents, supervised construction monitoring, and prepared non-native plant eradication and native habitat restoration plan for project.

Oil and Gas Transmission:

1993-1997: Project biologist to Dames & Moore, Inc. on the 1,200-mile long Kern River Gas Transmission Project through Kern County, southern Nevada, and southwestern Utah. Responsibilities included field surveys, biological constraints analyses, impact assessments, mitigation assessment, and construction monitoring for CEQA and NEPA permitting documents.

1994-1998: Project biologist to Pacific Pipeline, LLC on the 175-mile long Pacific Pipeline Project crude oil pipeline in southern Kern County to southern Los Angeles County; included at least 60 miles through Angeles National Forest. Responsibilities included habitat evaluation and mapping, pre-construction surveys for special-status plant and animal species, intensive consultation with Tejon Ranch attorneys and land managers regarding survey results, and implementation of mitigation measures during pipeline construction.

1996-1998: Senior Environmental Scientist to the Chilean Interior Ministry on the 1,500-mile long *Proyecto Gasoducto Transandino* (Trans-Andean Gas Pipeline Project) across Argentina and Chile. Responsibilities included preparing biological evaluations of various proposed routes through the Andes from Argentina to a receiving station/gas plant on the Pacific Ocean near Santiago, Chile; identified and classified project-related impacts, developed mitigation recommendations, and permit compliance plans for the project.

1999-2000: Project biologist to ENSR Corporation on the Thermo Eco-Tek Natural Gas Pipeline and Cogeneration Facility Project in southwestern San Bernardino County and northern Orange

County. Responsibilities included pre-construction surveys, constraints analyses, impacts assessments, and preparation of environmental documents for CEQA permitting documents.

2002-2008: On-call biologist to ENSR Corporation (now AECOM) for ExxonMobil Corporation projects in Kern and Tulare counties; species surveys, biological assessments, and construction monitoring.

2003-2006: Project biologist to ENSR Corporation (now AECOM) responsible for developing the Southern California Gas Company (Sempra Energy Co.) Programmatic Biological Assessment for Operations and Maintenance in Madera, Fresno, Tulare, Kern, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, western Riverside, and western San Bernardino counties. Responsibilities included analyses of biological resources along numerous existing pipeline routes, assessing impacts, and proposing mitigation to reduce or avoid potential impacts to resources during pipeline operation and maintenance for CDFG, USFWS, and CPUC permit compliance.

2007-2008: Project biologist for ExxonMobil M-70 oil pipeline extension across Santa Clara River, Los Angeles County.

2012-2015: Project biologist on Occidental Petroleum Co. project to assess impacts of seismic testing of natural gas and crude oil reserves for proposed exploratory drilling on Newhall Ranch, Los Angeles County.

Offshore LNG Re-Gasification Facility Permitting:

2004-2009: Consulting biologist to ENSR Corporation on the Woodside Liquefied Natural Gas (LNG) Project in the Southern California Bight off Los Angeles County and adjacent onshore receiving and transmission sites in coastal Los Angeles and Orange counties. Responsibilities included evaluating proposed and alternative routes in Los Angeles and Orange counties, conducted biological constraints analyses of various routes, impact assessments, and mitigation recommendations for CEQA and NEPA permitting documents.

Renewable Energy Transmission:

2006-2009: Biologist to Aspen Environmental Group, Inc. for the Tehachapi/Antelope Valley PdV Wind Energy Project DEIR/EIS, the Antelope-Pardee DEIR/EIS, and the Tehachapi Renewable Transmission Project (TRTP) DEIR/EIS from the Tehachapi Mountains and Antelope Valley to the Los Angeles Basin, Kern and Los Angeles counties; prepared CEQA documents for permitting process (characterize biological resources, assess project-related impacts, and propose mitigation recommendations for DEIR/EIS); peer review of outside consultants' work products for California Public Utilities Commission (CPUC).

2010: One of several biologists conducting small mammal surveys for Topaz Solar Farm EIR, San Luis Obispo Co, CA; subcontracted to Althouse & Meade Consultants, Inc.

2010-2015: Project herpetologist to CH2MHill, Inc. for the NextEra Big Sky Wind Energy Project, Piute Mtns, Kern County. Responsible for special-status reptile and amphibian surveys for project viability and constraints analysis regarding siting of turbines and access/service roads.

Highways and Bridge Removal/Replacement:

1989-1995: Project biologist to Dames & Moore, Inc. on three California Department of Transportation projects to widen and/or construct roadways in Madera, Fresno, and Kern counties. Duties included focused field surveys, impacts assessment, and mitigation recommendations for CEQA and NEPA documents, including sampling and rating over 250 vernal pools and vernal pool complexes for special-status plants, crustaceans (fairy shrimp), and amphibians.

2002-2009: Project biologist to County of San Luis Obispo Planning Department and Garcia and Associates on three bridge replacement projects in San Luis Obispo County; conducted biological evaluation and assessment for Federal Highway Works Administration CEQA/NEPA permitting documents.

2010-2013: Project biologist to Galvin Preservation Associates and County of Ventura Public Works Agency on bridge replacement project; Ventura River watershed; field surveys and construction monitoring for CA red-legged frog, least Bell's vireo, and other special-status riparian species.

Water Conveyance:

2000-2004: Project biologist to Los Angeles Department of Water and Power (LADWP) on Morris and San Gabriel Reservoir Sedimentation projects, Los Angeles County; special-status species surveys; field experiments on impacts of sedimentation on aquatic insects; biological assessment for CA Department of Fish and Game of effects of sediment sluicing on aquatic and riparian resources.

2003-2006: Project biologist to California Department of Water Resources and Aspen Environmental Group, Inc. for Mojave Check 66 Replacement Project, southwestern San Bernardino County (Mojave River); conduct special-status wildlife surveys and focused surveys and impact assessment for on the arroyo toad (*Bufo californicus*).

2004-2006: Project biologist to California Department of Water Resources and Aspen Environmental Group, Inc. for Tehachapi Embayment Project, Tejon Ranch, south slopes of the Tehachapi Mountains and adjacent Antelope Valley in Kern and Los Angeles counties; conduct field surveys and impact assessment/mitigation recommendations.

2007-present: Project biologist to Ventura County Watershed Protection District on the Matilija Dam Removal and Ecosystem Restoration Project, Giant Reed Removal Element, Ventura River watershed, Ventura County; special-status species surveys and monitoring during extensive non-native plant eradication effort; document and analyze natural recolonization of project area by native vegetation for Bureau of Reclamation and CDFG documentation.

Academic Background: Ph.D. Candidate, Evolutionary Ecology, UC-Santa Barbara
M.S., Ecology and Systematics (Herpetology), University of Kansas
B.S., Vertebrate Zoology (Herpetology), UC-Berkeley

Citizenship: United States.

International Consulting/Research Experience: Chile, England, Mexico, Portugal, Scotland.

Professional Affiliations: American Society of Ichthyologists and Herpetologists; Society for the Study of Amphibians and Reptiles; American Society of Zoologists; Sigma Xi Scientific Society.

Research Affiliate in Herpetology, Cheadle Center for Biodiversity & Ecological Restoration (CCBER), University of California-Santa Barbara.

Teaching Experience: Lecturer, University of California-Santa Barbara for upper-division undergraduate courses in: "Management of Endangered Species" and "Conservation Biology" (1994-2002).

Peer-Reviewed Publications:

1980. Hunt, L.E. and J. Ottley. Geographic Distribution: *Crotalus viridis helleri*. Herpetological Review, 12(2): 65.
1982. Hunt, L.E. Reproduction and feeding in *Eridiphas slevini* (Serpentes: Colubridae). Herpetological Review, 13(1): 8-9.
1983. Hunt, L.E. Book Review: Annotated bibliography of the desert tortoise, *Gopherus agassizi*. Herpetological Review, 14(1): 25.
1983. Hunt, L.E. A nomenclatural rearrangement of the genus *Anniella* (Sauria: Anniellidae). Copeia 1983(1): 79-89.
1984. Seigel, R.A., L.E. Hunt, et al. (eds.) Contributions to Vertebrate Zoology and Systematics: A Tribute to Henry S. Fitch. Spec. Publ. Mus. Nat. Hist. Univ. Kansas. No. 10. 278 pp.
1984. Hunt, L.E. Geographic patterns of morphological variation in the lizard genus *Anniella*. Masters Thesis. Univ. of Kansas, Lawrence. 302 pp.
1985. Schultze, H.P., L.E. Hunt and J. Chorn. Type and figured specimens of fossil vertebrates in the collections of the University of Kansas, Museum of Natural History, Part II: Fossil amphibians and reptiles. Misc. Publ. Mus. Nat. Hist. Univ. Kansas No. 77. 66 pp.
1985. Fleischer, R., M. Murphy and L.E. Hunt. Clutch size increase and intraspecific brood parasitism in the yellow-billed cuckoo (*Coccyzus americanus*). Wilson Bull. 97(1): 125-127.
1993. Hunt, L.E. Origin, maintenance and land use of aeolian sand dunes in the Santa Maria Basin, California. Prep. for The Nature Conservancy and U.S. Air Force, Vandenberg AFB. 72 pp.
1994. Hunt, L.E. Capture, relocation and monitoring of a southwestern pond turtle (*Clemmys marmorata pallida*) population on the upper Santa Ynez River, Santa Barbara County, California; Gibraltar Dam Strengthening Project. Prepared for the City of Santa Barbara, U.S. Forest Service and Woodward-Clyde Consultants. 135 pp.
1997. Hunt, L.E. Geostatistical modeling of species distributions: Implications for biogeographical and ecological studies, pp. 427-438, In: Soares, A. et al (eds.). Geostatistics for Environmental Applications. Kluwer Academic Publishers, London. 556 pp.
2000-2003. Predicting vertebrate distributions at local, landscape, and regional spatial scales. Ph.D. Dissertation. Dept. Ecology, Evolution, and Marine Biology, University of California-Santa Barbara.
2009. Hunt, L.E. *Anniella, Anniella pulchra, Anniella geronimensis*. SSAR Catalogue of American Amphibians and Reptiles. 39 pp.
2010. Hunt, L.E. California tiger salamanders in southern San Luis Obispo County, California. Herpetological Review, *in prep*.
In prep: Geographic Distribution: *Anniella pulchra*. Herpetological Review.
Geographic Distribution: *Coleonyx variegatus abbotti.* Herpetological Review.
Hunt, L.E. Additions to the pulmonate snail fauna of Ventura County. The Veliger.
Hunt, L.E. and Barry Roth. A new species of land snail (Pulmonata: Helminthoglyptidae) from Ventura County, California. The Veliger.
Hunt, L.E. Occurrence of California tiger salamanders in the "gap region" of Central Coastal California. Herpetological Review.

Hunt, L.E. Documentation of early-stage hybridization between native and non-native tiger salamanders in the Santa Barbara County Distinct Population Segment (DPS) of the California Tiger Salamander. Herpetological Review.

Grants, Awards, and Invited Speaker Engagements:

1976. National Science Foundation Grant
1980. Phi Sigma Biology Honor Society, Univ. Kansas
1982. Regents Scholarship, University of California-Santa Barbara
1984. Masters Thesis, with honors, University of Kansas
1985. National Audubon Society, Research Grant
1987. Chancellor's Advisory Committee, University of California Natural Reserve System
1988. Storrer Award, American Society of Ichthyologists and Herpetologists
1988. Academic Instructional Grant, University of California-Santa Barbara
1989. Graduate Dissertation Fellowship, University of California-Santa Barbara
1989. 1st World Congress in Herpetology, Canterbury, England, Invited Speaker
1990. Research Grant, The Nature Conservancy
1994-2003. UCSB Annual Academic Development Grants, Patagonia, Inc.
1996. 'Excellence in Reclamation' Award, California Mining Association
1996. 1st European Conference on Geostatistics, Lisbon, Portugal, Invited Speaker
1997. Society for Ecological Restoration-Dune Guild, San Luis Obispo, CA, Invited Speaker
1998. 2nd European Conference on Geostatistics, Valencia, Spain, Invited Speaker
2001. Santa Ynez Natural History Association, Santa Ynez, CA, Invited Speaker.
2002. OSPR Grant, Endangered Species Research Fund, California Department of Fish and Game
2003. University of California-Santa Barbara Habitat Restoration Group, Invited Speaker
2003. Threatened and Endangered Amphibians and Reptiles of Southern California, Wildlife Society and Bureau of Land Management, Riverside, CA, Invited Speaker
2005. U.S. Fish and Wildlife Service Research Grant, Ventura Field Office, Ventura, CA.
2005-2010. Lecturer, UC-Santa Barbara EEMP Courses in Endangered Species Management and Conservation Biology.
2006. Wildlife Conservation Board and U.S. Fish and Wildlife Service CA Tiger Salamander Regional Conservation Strategy Grant, Washington, D.C.
2010-present. U.S. Fish and Wildlife Service Research Grant on Hybrid Tiger Salamander Issues, Ventura Field Office, Ventura, CA.
2010-2011. Guest Lecturer, UC-Santa Barbara EEMP 188 Seminar on Ecological Restoration and Conservation.
2015-present. CTS-BTS Hybridization Study Grant, USFWS and CDFW, Ventura and Sacramento, CA
2021. Guest Lecturer in Herpetology course, University of California-Los Angeles.

Current Permits:

- U.S. Fish and Wildlife Service 10(a)1(a) Recovery (handling) Permits for the California tiger salamander, California red-legged frog; and several species of fairy shrimp.
- California Department of Fish and Game – Scientific Collecting Permit for amphibians and reptiles.

County Approved Qualified Biologist Lists: Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Kern.