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By E-mail and Certified Mail

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RE: Notice of Intent to Sue the U.S. Fish and Wildlife Service and U.S. Forest Service for Failing to Ensure that Expansion of the Lee Canyon Ski Area, Clark County, Nevada does not Jeopardize the Mount Charleston Blue Butterfly or Adversely Modify Its Critical Habitat

Dear Secretary Bernhardt, Director Skipwith, Field Supervisor Knowles, and Forest Supervisor Dunkelberger:

The Center for Biological Diversity (“Center”) hereby provides notice, pursuant to Section 11(g) of the Endangered Species Act (“ESA”), that the U.S. Fish and Wildlife Service (“FWS”) and the United States Forest Service (“Forest Service”) are in violation of the Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531–1544, for failing to ensure that an expansion of the Lee Canyon Ski Area does not jeopardize the Mount Charleston blue butterfly or destroy or adversely modify its critical habitat. *See* Biological Opinion for the Effects to Mount Charleston Blue Butterfly for the Lee Canyon Ski Area Master Development Plan – Phase 1, Clark County Nevada (Dec. 13, 2019) (“2019 BiOp”).

The Mount Charleston blue butterfly is a critically endangered species that is on the brink of extinction. Since being listed as an endangered species in 2013, nearly a quarter of remaining Mount Charleston blue butterfly populations have been extirpated, and less than 100 individuals have been seen in recent surveys. *See* Determination of Endangered Species Status for Mount Charleston Blue Butterfly (“Final Listing Determination”), 78 Fed. Reg. 57,750, 57,753–54 (Sept. 19, 2013); Gulley 2016; Gulley 2017; Thompson 2018. Despite the perilous state of the butterfly, FWS has approved a plan by the Lee Canyon Ski Area (“LCSA”) to drastically expand operations, including newly proposed summer operations that will bring thousands of visitors every year into the heart of the butterfly’s critical habitat and into one of few remaining places it

survives. *See* Designation of Critical Habitat for Mount Charleston Blue Butterfly (*Icaricia (Plebejus) shasta charlestonensis*) (“Final Critical Habitat Designation”), 80 Fed. Reg. 37,404, 37,411 (June 30, 2015).

In green-lighting the expansion, FWS drastically underestimated the impacts of ski area development on the Mount Charleston blue butterfly and its critical habitat by limiting analysis to so-called “core” and “non-core” areas—rather than all of the butterfly’s critical habitat impacted by expanded construction and operation of the ski area—and the construction footprint. FWS also failed to consider the impacts of newly proposed summer operations, such as disturbance to the butterfly and its habitat from the development of a significant network of mountain biking trails, and expanded winter operations. Additionally, FWS failed to consider the impacts from later phases of proposed development and the impact development will have on the butterfly’s recovery. Finally, FWS relied on inadequate and vague minimization measures proposed by the Forest Service and failed to adequately protect the species from excessive take. These failures, amongst others, fail to follow the best available science, violate the ESA, and are arbitrary and capricious.

The Center for Biological Diversity is a non-profit conservation organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has more than 74,000 members across the world, including hundreds in Clark County, Nevada. Some Center members enjoy recreating in and deriving aesthetic benefit from the habitat of the Mount Charleston blue butterfly on the Humboldt-Toiyabe National Forest.

This letter serves as notice that unless FWS withdraws the 2019 BiOp and ITS within 60 days of receipt of this notice, the Center intends to challenge the FWS and the Forest Service’s unlawful conduct in court.

STATUTORY BACKGROUND

Enacted in 1973, the ESA is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). The ESA provides a means to conserve endangered and threatened species and the ecosystems upon which they depend. 16 U.S.C. § 1531(b). To receive the full protections of the ESA, a species must first be listed by the Secretary of the Interior as “endangered” or “threatened” pursuant to ESA Section 4. *See id.* § 1533. The ESA defines an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range.” *Id.* § 1532(6). A “threatened” species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” *Id.* § 1532(20).

Congress recognized the importance of timely habitat protections to the conservation and recovery of endangered species when it found that:

[C]lassifying a species as endangered or threatened is only the first step in insuring its survival. Of equal or more importance is the determination of the habitat necessary for that species’ continued existence. . . . If the protection of endangered

and threatened species depends in large measure on the preservation of the species' habitat, then *the ultimate effectiveness of the Endangered Species Act will depend on the designation of critical habitat.*

H.R. Rep. No. 94-887 at 3 (1976) (emphasis added). Thus, concurrent with listing a species, the ESA requires the designation of critical habitat. 16 U.S.C. § 1533(a)(3)(A)(i); *see also id.* § 1533(b)(6)(C). Critical habitat means “the specific areas within the geographical area occupied by the species . . . on which are found those physical or biological features (I) *essential* to the conservation of the species and (II) which may require special management considerations or protection;” and unoccupied areas “*essential* for the conservation of the species.” *Id.* § 1532(5) (emphasis added). “Conservation” is defined as all methods that can be employed to “bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary.” *Id.* § 1532(3). As such, “the purpose of establishing ‘critical habitat’ is for the government to carve out territory that is not only necessary for the species’ survival but also essential for the species’ recovery.” *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1070 (9th Cir. 2004). Any such designation must be based on the “best scientific data available” 16 U.S.C. § 1533(b)(2).

Once a species is listed and critical habitat is designated, Section 7 of the ESA requires each federal agency, in consultation with a federal wildlife agency (FWS for the Mount Charleston blue butterfly) to ensure that any proposed action is not likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat. *Id.* § 1536(a)(2). To “jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. “Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.” *Id.*

When a proposed action may affect a listed species, the action agency must engage in formal consultation with FWS. *Id.* § 402.14(a). Formal consultation results in the preparation of a biological opinion. *Id.* § 402.14. A biological opinion must detail “how the agency action affects the species or its critical habitat.” 16 U.S.C. § 1536(b)(3)(A). “Thus, the scope of the agency action is crucial because the ESA requires the biological opinion to analyze the effect of the entire agency action.” *Conner v. Burford*, 848 F.2d 1441, 1453 (9th Cir. 1988) (citing *North Slope Borough v. Andrus*, 642 F.2d 589, 608 (D.C. Cir. 1980)). In the Ninth Circuit, the term “agency action” is interpreted broadly. *Id.* (citing *Tenn. Valley Assoc. v. Hill*, 437 U.S. at 173 & n. 18). This is in-line with the ESA’s precautionary principle, because, “caution can only be exercised if the agency takes a look at all the possible ramifications of the agency action.” *Id.* (quoting *North Slope*, 642 F.2d at 608). “Thus, section 7 of the ESA on its face requires the FWS in this case to consider *all phases* of the agency action....” *Id.* (emphasis added).

FWS must evaluate both the current status of listed species as well as the effects of the proposed action on the listed species. 50 C.F.R. § 402.14(g)(2)-(3). Under Section 7’s implementing regulations:

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

Id. § 402.02. Agencies are required to “use the best scientific and commercial data available” in assessing impacts to protected species during the consultation process. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(d). Based on this information, FWS must reach a “biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species” 50 C.F.R. § 402.14(g)(4). A biological opinion produced through formal consultation is a final agency action subject to judicial review under the arbitrary and capricious standard. *See Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 422 F.3d 782, 709 (9th Cir. 2005).

After the procedural requirements of consultation are complete, however, the ultimate duty to ensure that an activity does not jeopardize a listed species lies with the action agency. An action agency’s reliance on an inadequate, incomplete, or flawed biological opinion to satisfy its ESA section 7 duty is arbitrary and capricious. *See Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010). Federal agencies are also required to report back to FWS on the action’s progress and its impact on an endangered species in order to monitor the impacts of incidental take. 50 C.F.R. § 402.14(i)(3). “If during the course of the action the amount or extent of incidental taking . . . is exceeded, the Federal agency must reinitiate consultation immediately.” *Id.* §§ 402.14(i)(4); 402.16(a)(1). Consultation must also be reinitiated if: “new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;” “the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence;” or “a new species is listed or critical habitat designated that may be affected by the identified action.” *Id.* § 402.16(a)(2-4).

FACTUAL BACKGROUND

I. The Mount Charleston Blue Butterfly and Its Listing as an Endangered Species

The Mount Charleston blue butterfly (*Icaricia (Plebejus) shasta charlestonensis*) is a rare and endemic subspecies of the Shasta blue butterfly that evolved due to 10,000 years of isolation in the high elevations of the Spring Mountains west of Las Vegas, Nevada between elevations of 6,600 and 11,500 ft. Final Listing Determination, 78 Fed. Reg. at 57,751; *see also* Final Critical Habitat Designation, 80 Fed. Reg. at 37,416. Small, with a wingspan no longer than an inch, males’ upper sides are “dark to dull iridescent blue,” while females “are brown with some blue basally.” *Id.* Both males and females have “a row of submarginal black spots on the dorsol side of the hind wing and a discal black spot on the dorsal side of the forewing and hind wing.” *Id.* These markings distinguish them from other similar butterflies in the Spring Mountains. *Id.*



The Mount Charleston blue butterfly is found only on public lands managed by the Forest Service within the Spring Mountains National Recreation Area on the Humboldt-Toiyabe National Forest. The majority of the butterfly's occurrences are in two locations: along the upper ridges of the Mount Charleston Wilderness above Kyle Canyon and in the Upper Lee Canyon area. Final Listing Determination, 78 Fed. Reg. at 57,753–54.

The Mount Charleston blue butterfly was listed as an endangered species in 2013 when there were 17 known historical locations and seven presumed occupied sites in three general areas—the South Loop Trail area, LCSA, and the Bonanza Trail. *Id.* The butterfly is threatened by habitat loss, succession due to fire suppression, invasive species, climate change, recreation, feral horses, and collecting. One of the major reasons for the butterfly's listing in 2013 was “its few occurrences in a small area” and threats from the “implementation of recreational development projects and fuels reduction projects” that “will increase the inherent risk of extinction of the remaining few occurrences of the [butterfly].” *Id.* at 57,750.

Four Mount Charleston blue butterfly populations have become extirpated since listing. Surveys conducted in 2016 found only four individuals in the Lee Canyon area and none at other sites. Gulley 2016. In total, less than 100 individuals have been observed in more recent surveys. *See* Gulley 2017; Thompson 2018. With its small size, low vagility, semi-isolated populations, and specific and limited larval host plants which are early successional habitat specialists, the butterfly is susceptible to population declines and is not currently resilient. Carvajal-Acosta et al. 2015 p. 6.

Adult female Mount Charleston blue butterflies mate and lay eggs on host plants as well as seek nectar plants for feeding; larvae feed on host plants. The butterfly's host plants are Torrey's and broad-kneeled milkvetch (*Astragalus calycosus* and *A. playtropis*) and mountain oxytrope (*Oxytropis oreophila* var. *oreophila*). Females fly between or walk along host plants, sometimes for over 30 minutes, before ovipositing a single egg on a plant or in the nearby leaf litter, and then feed and/or bask on the ground to restore energy. Thompson et al. 2014 pp. 122–24. Their nectar sources include Clokey's fleabane (*Erigeron clokeyi*), Lemmon's bitterweed (*Hymenoxys lemmonii*), Cooper's rubberweed (*Hymenoxys cooperi*) and sulphur-flower buckwheat (*Eriogonum umbellatum* var. *versicolor*), among others. Final Listing Determination, 78 Fed. Reg. at 57,753.

Mount Charleston Blue butterflies likely take two years to develop, overwintering as diapausing eggs or first instar larvae, feeding as early stage larvae through the following growing season, and then diapausing as late stage larvae or pupating that winter and emerging as adults the following summer. Boyd & Murphy 2008 p. 21. To complete their development into the pupal stage before host plants dry up, larvae actively seek out host plants in sufficient quantity in areas with adequate amounts of sunlight before they pupate. Thompson et al. 2014 p. 150. The ability to overwinter as two distinct stages is an adaptation to environmental extremes such as drought or heavy snowfall. Boyd & Murphy 2008 p. 21. The viability, and thus recovery, of the butterfly is dependent on the synchronization of larval emergence and host plant availability. Boyd & Murphy 2008 p. 13. Adult activity corresponds with peak bloom, from mid to late June to early July, with the end of the adult activity period in mid to late August. Boyd & Murphy 2008 pp. 12–18. Nectar contributes nutrients to egg production and can augment egg size, which directly impacts the resulting larva's survival. Boyd & Murphy 2008 p. 9.

In addition to the presence of host plants and nectar sources and low canopy cover, the Mount Charleston blue butterfly's presence is dependent on vegetation structure and composition within and adjacent to host and nectar resources. Boyd & Murphy 2008 p. 2; Thompson 2018 pp. 75–78. The type of host and nectar plants present is important, as researchers have found more eggs on *O. oreophila* than *A. calycosus*, despite the presence of more *A. calycosus*, and more eggs with increasing density of the nectar plants *Gutierrezia sarothrae* and *Erigeron clokeyi*. Thompson et al. 2014 p. 147; Thompson 2018 p. 77. Areas with host plants at low density might also be important for the butterfly to avoid inter- and intraspecific competition for egg laying sites, as the Reakirt's blue also uses *O. oreophila* as a host plant. Thompson 2018 p. 88.

Additional factors that contribute to habitat suitability are slope and aspect, degree of solar exposure, microtopographic variation within a patch, as well as patch configuration and proximity and connectivity to other habitat patches. Boyd & Murphy 2008 p. 21. A low grass versus forb cover is also important due to the need for larvae and adults to move about a patch; grass should be less than 15 cm (the height at which adults typically fly) and clumps only sparsely present at a density below five plants per meter squared. Thompson et al. 2014 pp. 138–141. Further, like many butterflies, the Mount Charleston blue butterfly requires elevated locations with open exposure during mating periods as males perch to encounter females. Boyd & Murphy 2008 pp. 19–20.

The Mount Charleston blue butterfly exhibits metapopulation dynamics that require the protection, maintenance, and management of a network of connected habitat patches. Final Critical Habitat Designation, 80 Fed. Reg. at 37,416–21. Butterfly individuals appear and disappear in habitat patches across the metapopulation landscape in response to the temporal and spatial changes in habitat quality caused by localized microclimatic conditions. *Id.* at 37,414–15. The butterfly relies on stepping stone habitat—or smaller patches of host and nectar plants that act as waypoints between larger habitat patches—to disperse throughout their range for gene flow and recolonization during years of high adult abundance, such as between the LCSA's ski slopes and the Bonanza Trail in the north part of the butterfly's range. Thompson et al. 2014 pp.

155–157.¹ Areas of low occupancy or low abundance of host plants are critical to metapopulation survival, as they represent spill over areas for the less competitive individuals to establish and enhance overall genetic diversity. Howe and Davis 1991. Furthermore, these areas serve as what is known as the ‘rescue effect’: if butterflies in adjacent areas suffer mortality, individuals can colonize adjacent habitat during years of high production of adults or vice versa. *Id.* Thus, the butterfly requires a high level of connectivity between habitat areas in order to maintain metapopulation dynamics and survive in the region. Final Critical Habitat Designation, 80 Fed. Reg. at 37,416–21.

II. The Mount Charleston Blue Butterfly’s Critical Habitat Designation

In 2015, following listing, FWS designated critical habitat for the Mount Charleston blue butterfly. Final Critical Habitat Designation, 80 Fed. Reg. 37,404. In doing so, FWS designated approximately 5,214 occupied acres in the Spring Mountains of Clark County, Nevada, as *essential* for the butterfly’s survival and recovery. *Id.* When designating critical habitat for the butterfly, FWS found that the species required the following physical or biological features: “flat or gently sloping areas between 2,500 m (8,200 ft) and 3,500 m (11,500 ft) elevation in the Spring Mountains[,]” *id.* at 37,416; “open habitat that permits light to reach the ground, nectar plants for adults and host plants for larvae, and exposed soil and rock substrates with short, widely spaced forbs and grasses[,]” *id.* at 37,416–17; “areas with larval host plants and adult nectar plants, and areas immediately adjacent to these plants[,]” *id.* 37,417; “areas with larval host plants, especially *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, or *Astragalus platytropis*, and adult nectar plants, especially *Erigeron clokeyi*, *Eriogonum umbellatum* var. *versicolor*, *Hymenoxys cooperi*, and *Hymenoxys lemmonii*, during the flight period of the [butterfly,]” *id.* at 37,417–18; and “habitat where natural disturbance, such as fire that creates and maintains openings in the canopy[.]” *Id.* at 37,418–19. In sum, FWS found three primary constituent elements essential for the species’ survival and recovery:

- i. Areas of dynamic habitat between 2,500 m (8,200 ft) and 3,500 m (11,500 ft) elevation with openings or where disturbance provides openings in the canopy that have no more than 50 percent tree cover (allowing sunlight to reach the ground); widely spaced, low (less than 15 cm (0.5 ft) in height) forbs and grasses; and exposed soil and rock substrates. When taller grass and forb plants greater than or equal to 15 cm (0.5 ft) in height are present, the density is less than five per m² (50 per ft²).
- ii. The presence of one or more species of host plants required by larvae of the [butterfly] for feeding and growth. Known larval host plants are *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, and *Astragalus platytropis*. Densities of host plants must be greater than two per m² (0.2 per ft²).
- iii. The presence of one or more species of nectar plants required by adult [butterflies] for reproduction, feeding, and growth. Common nectar plants include *Erigeron clokeyi*, *Hymenoxys lemmonii*, *Hymenoxys cooperi*, and

¹ The Las Vegas Ski and Snowboard Resort (“LVSSR”) is now known as the Lee Canyon Ski Area (“LCSA”).

Eriogonum umbellatum var. *versicolor*. Densities of nectar plants must occur at more than two per m² (0.2 per ft²) for smaller plants, such as *E. clokeyi*, and more than 0.1 per m² (0.01 per ft²) for larger and taller plants, such as *Hymenoxys* sp. and *E. umbellatum*. Nectar plants typically occur within 10 m (33 ft) of larval host plants and, in combination, provide nectar during the adult flight period between mid-July and early August. Additional nectar sources that could be present in combination with the common nectar plants include *Antennaria rosea*, *Cryptantha* sp., *Ericameria nauseosa* ssp., *Erigeron flagellaris*, *Guitierrezia sarothrae*, *Monardella odoratissima*, *Petradoria pumila* var. *pumila*, and *Potentilla concinna* var. *concinna*.

Id. at 37,420.

Within the critical habitat designation, FWS delineated three separate critical habitat units (“CHU”) essential to the survival and recovery of the Mount Charleston blue butterfly: (1) South Loop, (2) Lee Canyon, and (3) North Loop. *Id.* The Lee Canyon CHU is particularly important to the Mount Charleston blue butterfly because it includes approximately 2,569.3 acres or nearly half of the butterfly’s 5,214 acres of designated critical habitat. BA at 37. 414 acres of the Lee Canyon CHU overlap with the LCSA permit boundary. BA at 37. Lee Canyon contains a key metapopulation, perhaps only one of two, of the butterfly and it has been stated by experts that “it is critically important that each of the separate geographic areas be considered as essential and that each be managed to maximize the amount and interconnectedness of existing habitat fragments.” Thompson et al. 2014 p. 157. In both 2016 and 2017, individual butterflies within the Northern critical habitat portion (Lee Canyon and North Loop Units) were only (with the exception of one individual at Gary Abbott in 2017) found within the LCSA on the Bimbo and Blackjack ski runs, affirming the importance of these areas to the butterfly. Gulley 2016 p. 4; Gulley 2017 p. 7.

As such, the Lee Canyon CHU, in which the entire action area resides, is of central importance to the persistence and recovery of the Mount Charleston blue butterfly. *See* Final Critical Habitat Designation, 80 Fed. Reg. at 37,423 (detailing why the Lee Canyon CHU is essential to the survival and recovery of the butterfly); *see also* 2019 BiOp at 2 (noting that the action area is within the Lee Canyon CHU); *see also id.* Figures 2–6 (showing that the action area, with the exception of a small carveout, is within critical habitat). Looking narrowly at the LCSA itself, FWS determined that:

The critical habitat for the [butterfly] in Unit 2 at [LCSA] is *essential* to the conservation and recovery of the subspecies, because of the subspecies’ restricted range, overall low numbers, and occupancy of few locations... . Additionally, the population of [butterflies] in Unit 2 and at [LCSA] is one of three known occupied locations. While other presumed occupied locations exist outside of designated critical habitat, the location within [LCSA] is important because it is known occupied habitat with primary constituent elements essential to the conservation and recovery of the subspecies.

Final Critical Habitat Designation, 80 Fed. Reg. at 37,411 (emphasis added).

The importance of the Lee Canyon CHU is only heightened by the current condition of the other two CHUs. Despite the designation of the North Loop CHU, and despite repeated surveys in the intervening years, no Mount Charleston blue butterflies have been observed on the North Loop Trail since 1995. Thompson et al. 2014; Thompson et al. 2018. While the butterfly's presence can be cryptic and many years can pass between detections, the fact that repeated surveys have failed to locate a single butterfly on this site in 25 years brings into question the North Loop CHU's role in the butterfly's conservation.

Historically the South Loop CHU had the most robust population of Mount Charleston blue butterflies out of the three CHUs. Indeed, in 2008, after repeated surveys failed to turn up individuals in Lee Canyon, there was suspicion that the South Loop area was the only remaining occupied habitat for the butterfly. Boyd & Murphy 2008 p. 2. Surveys in the decades before listing revealed that “[t]he South Loop ridge habitat at highest elevation has continuously supported individuals over the past two decades...,” *id.* p. 21, and repeated surveys in the 2010s located individuals on the South Loop trail. Thompson et al. 2014; Thompson et al. 2018.

However, in 2013, at least half of the South Loop CHU burned in the Carpenter 1 fire, a catastrophic wildfire which at 28,000 acres was the largest in recorded history in the Spring Mountains. Hermann 2017 p. 2–5. While fire is natural and beneficial in many if not most forest ecosystems, the high-elevation bristlecone pine ecosystem, as is found in the South Loop CHU, is not particularly adapted to fire, and inasmuch as fire does occur within the ecosystem, the fires are typically low-severity, not stand-replacing. *Id.* The Carpenter 1 fire, however, was large-scale, high-intensity, and “consumed all standing bristlecone trees within its perimeter and greatly affected the forest and alpine flora and fauna of the Spring Mountains.” *Id.* Post-fire plant surveys found a moderate level of resilience, measured by recovery of plant species diversity and abundance, in non-burned and low-intensity burned areas, and a much lower level of resilience in areas of high-intensity burn. *Id.* p. 46. As if to confirm this data, two years after the fire in 2015, 48 out of 49 observations of Mount Charleston blue butterflies in the South Loop area were found on the unburned West Ridge. Thompson et al. 2018 p. 6. Again in 2016 and 2017, no butterflies were observed in the burned area of the South Loop CHU. *Id.* p. 72, 84. This data strongly suggest that the South Loop population has been significantly impacted by the Carpenter 1 fire. Since the South Loop population was historically the most robust, this gives far greater importance to the Lee Canyon CHU and demonstrates that the conservation of habitat in Lee Canyon is absolutely essential to the persistence and recovery of the butterfly.

III. The Lee Canyon Ski Area Master Development Plan and Its Consultation History

a. Master Development Plan

In 2011, the LCSA developed its Master Development Plan (“MDP”).² Ecosign Mountain Resort Planners Ltd., Las Vegas Ski and Snowboard Resort Master Development Plan 2011 (Mar. 2011). Broken into Phase 1 and Phase 2, the MDP set forth LCSA’s plan for removing and replacing existing infrastructure, along with the development of new facilities over time. *Id.* at IV-1. Amongst other objectives, the MDP sought to “[p]rovide other recreational activities for year-round utilization of the facilities[.]” *Id.* On information and belief, the Forest Service has never consulted with FWS over the MDP.

b. Phase 1 Project

Beginning in 2014, the Forest Service and FWS began working with the representatives of LCSA to begin consultation and discuss the impacts the ski area’s development plans might have on the Mount Charleston blue butterfly. Phase 1 includes the ongoing maintenance and operation of significant existing facilities as well as the development of several new ski lifts, snowmaking facilities, roads, glading, a mountain coaster, a hiking trail, a significant mountain bike trail system, zip line, and buildings and facilities. 2019 BiOp at 4–5.

c. 2019 BiOp

The culmination of this consultation was the 2019 BiOp and associated ITS at issue in this notice of intent letter. In approving the LCSA Master Development Plan – Phase 1 Project (“Project”), the Forest Service, after consulting with FWS, authorized LCSA “(1) to continue maintenance and operations of existing [LCSA] and associated infrastructure, (2) to implement the LCSA Master Development Plan – Phase 1, which includes the construction of new infrastructure, and (3) subsequently maintain and operate the new infrastructure.” *Id.* at 4. Although maintenance and operations would be ongoing with no planned end date, the implementation and construction associated with Phase 1 is expected to occur over a 10-year period. *Id.*

FWS determined that the action area for the Project is the LCSA Special Use Permit Boundary area and a 40-meter buffer from the boundary. *Id.* The action area is within the Spring Mountains National Recreation Area of the Humboldt-Toiyabe National Forest and Lee Canyon CHU 2. *Id.*

In the 2019 BiOp, FWS found that the Project will eliminate 13.7 acres of “non-core” and “core” habitat. Defined for the first time in the Forest Service’s Biological Assessment (“BA”)—several years after FWS designated critical habitat for the Mount Charleston blue butterfly—“core” habitat is defined as areas “of contiguous cells greater than 0.08 ac (312.5 m²) in the Gary

² Ski areas are required by the National Forest Ski Area Permit Act of 1986 to submit master development plans to the Forest Service. *See* 16 U.S.C.S. § 497b.

Abbott, Bimbo and Blackjack ski runs[,]” that “have a higher density of host and nectar plants across a broader area with lower tree canopy cover.” 2019 BiOp at 36–37; *see also* Biological Assessment for Lee Canyon Ski Area Master Development Plan – Phase 1 and Maintenance and Ongoing Operations at Lee Canyon Ski Area, Appendix B at 45 (July 26, 2019) (“Methodologically, core areas are comprised of contiguous cells in these areas with more than 312.5 square meters of potential habitat (prior to the application of the 5-meter buffer around habitat), and any single cell with potential habitat lower than that threshold that provides the only connection between two cells with more potential habitat than that threshold.”). “Non-core areas are areas of habitat outside the core areas. Non-core areas generally have lower host and nectar plant densities as well as higher tree canopy cover.” 2019 BiOp at 37; *see also* BA at 45 (defining non-core areas as “[h]abitats patches outside of the three core areas”).

Within the impacted “core” and “non-core” areas, “[a]ll eggs, larvae, and pupae present in the removal portion of the action area will be injured, crushed, buried, and killed. Adults during the flight period between June and September will be displaced or killed.” 2019 BiOp at 38. Beyond those direct impacts, “[i]ndividuals adjacent to disturbed habitat will be indirectly affected by the loss of available habitat[;] [a]dults in the upcoming flight season will be affected from reduced nectar food availability and area of locations to deposit eggs;” and “[l]arvae near the margins of directly affected areas will have reduced food availability and suitable habitat to enter pupation.” *Id.* at 39.

The Project could also introduce nonnative, invasive species that would compete with host and nectar plants and reduce food and cover resources for all life stages of the Mount Charleston blue butterfly. *Id.* Non-native plants may also interfere with the movement and utilization of habitat. *Id.*

Despite the significant impacts to the Mount Charleston blue butterfly and its critical habitat, FWS concludes that the Project will not jeopardize the butterfly or result in the destruction or adverse modification of its habitat. *Id.* at 46–47. In doing so, FWS relies heavily on minimization measures proposed by the Forest Service that would purportedly be implemented by LCSA. *Id.* at 46. The minimization measures proposed by the Forest Service, although numerous, *see id.* at 25–29, are often vague as well as untested and unproven. Indeed, in many cases it is unclear if they are even workable. Finally, it is unclear how the implementation of the conservation measures and their effectiveness will be monitored by the Forest Service of FWS since a qualified biologist will only be on-site during construction “periodically,” to say nothing of the ongoing impacts to the butterfly from activities beyond construction. BA, Appendix B at 75 (July 26, 2019).

Legal Violations

I. The 2019 BiOp Fails to Adequately Address the Project’s Impacts to the Mount Charleston Blue Butterfly and Its Critical Habitat

Fundamentally, the 2019 BiOp fails to address the significant impacts the Project will have on one of the last remaining populations of the Mount Charleston blue butterfly and its critical habitat. It does so both by restricting its analysis to so-called “core” and “non-core”

areas, and by ignoring impacts beyond the footprint of construction. Even then, the 2019 BiOp looks at only a portion of construction impacts on the butterfly and its critical habitat, and ignores the significant impacts of opening up the area to summer operations, including mountain biking and new hiking trails.

a. The 2019 BiOp Improperly Disregards Construction and Other Impacts Beyond “Core” and “Non-core” Areas

FWS and the Forest improperly truncated their analysis by only considering impacts in “core” and “non-core” areas—rather than the whole of the critical habitat impacted by the Project. *See* 2019 BiOp at 36–37; BA at 44.³ To be clear, the entire Project occurs within critical habitat, and has impacts outside of the areas referred to as “core” and “non-core” by the Forest Service and FWS. However, FWS failed to analyze those impacts even though the ESA and its implementing regulations require the Forest Service and FWS to insure that the Project does not result in “a direct or indirect alteration that appreciably diminishes the value of *critical habitat* as a whole for the conservation of a listed species.” 50 C.F.R. § 402.02 (emphasis added); *see also* 16 U.S.C. § 1536(a)(2). FWS’s failure to analyze the Project’s full impact on the Mount Charleston blue butterfly and its critical habitat violates the ESA and is arbitrary and capricious.

By restricting the analysis of the Project’s impacts to “core” and “non-core” areas, *see, e.g.*, 2019 BiOp at 38, the 2019 BiOp finds that the Project impacts a mere 13.7 acres of “core” and “non-core” habitat. 2019 BiOp at 38–39, 44. This restriction ignores significant impacts to the Lee Canyon CHU; an especially important area of the Mount Charleston blue butterfly’s critical habitat. *See, e.g.*, 2019 BiOp at 9, Figure 5 (detailing proposed mountain bike trails outside of “core” and “non-core” areas but within critical habitat). Specifically, while the 2019 BiOp concludes that only 13.7 acres of “core” and “non-core” habitat will be impacted, the BA stated that 120.8 acres will be impacted by the Project.⁴ *See* BA at 12.

In disregarding the approximately 107.1 acres outside of “core” and “non-core” habitat impacted by the Project, the 2019 BiOp ignores significant impacts to the butterfly’s critical habitat. For instance, the 2019 BiOp found that the construction of mountain bike trails would have *no* impact on the Mount Charleston blue butterfly and its critical habitat because no mountain bike trails would be placed in “core” or “non-core” habitat.⁵ 2019 BiOp at 26; BA at

³ “Core areas,” a term not defined in the ESA or its implementing regulations, “are comprised of contiguous cells ... with more than 312.5 square meters of potential habitat (prior to the application of the 5-meter buffer around habitat), and any single cell with potential habitat lower than that threshold that provides the only connection between two cells with more potential habitat than that threshold.” BA at 45. “Non-core areas” are “[h]abitat[] patches outside of the three core areas.” *Id.*

⁴ It is unclear how FWS arrived at its figure of 13.7 acres of impacted habitat. The BA found that 17.4 acres would be impacted, BA at 47.

⁵ Neither FWS nor the Forest Service know the final locations of the proposed mountain bike trails. 2019 BiOp at 26. As such, the Forest Service and FWS cannot know how the trails will impact the Mount Charleston blue butterfly and its habitat. *See* BA at 65 (acknowledging “some

51. But the mountain bike trails *will* be within critical habitat, will result in the destruction of significant critical habitat, and will have significant impacts on the butterfly itself. *See* BA at 11 (noting that mountain bike trails will cover 7.7 acres of critical habitat). Additionally, the creation of the mountain bike trails, which have never before existed at LCSA, will bring thousands of riders each summer—an impact completely dismissed in the 2019 BiOp. *See infra* Part I.b. The 2019 BiOp also disregards the impacts associated with the construction of the new hiking trail, mountain coaster, zipline, lifts, and roads, despite the heavy increase in human traffic they will also invite in addition to their direct impacts on critical habitat. *See* 2019 BiOp at 9, Figure 5 (detailing Phase 1’s summer access and activities impacts within the butterfly’s critical habitat).

The agencies’ definition of “core” and “non-core” areas also ignores the best available science regarding the Mount Charleston blue butterfly’s habitat needs. As noted above, the Forest Service and FWS delineated “core” and “non-core” areas as areas with “higher density of host and nectar plants across a broader area with lower tree canopy cover” and areas that generally “have lower host and nectar plant densities as well as higher tree canopy cover,” respectively. 2019 BiOp at 36–37. In doing so, they excluded designated critical habitat that may not currently contain such features, but which, nonetheless, is essential to the butterfly’s survival and recovery. For instance, in the Final Critical Habitat Designation, FWS identified “flat or gently sloping areas between 2,500 m and 3,500 m elevation in the Spring Mountains as ... essential to the [butterfly] for space for individual and population growth and for normal behavior,” *id.* at 37,416, and “locations of known populations and suitable habitat immediately adjacent to, or areas between, known populations that provide connectivity between those locations.” *Id.* at 37,420.

Further, the Final Critical Habitat Designation included “connectivity corridors of butterfly populations between or adjacent to areas of suitable habitat,” because the butterfly requires the protection, maintenance, and management of a connected network of habitat patches to support metapopulation dynamics and those areas are “important for butterfly dispersal.” *Id.* at 37,421; *see also id.* at 37,411 (“The ability of the [butterfly] to move among or between close patches of habitat within each [CHU] is necessary and essential for the conservation and recovery of the subspecies.”). In order to protect those connectivity corridors, FWS’s critical habitat “buffered” suitable habitat areas by 500m which allowed FWS to determine if the habitat patches were within the “approximate 1,000m (3,281 ft) dispersal distance of each other.” *Id.* When marking out “core” and “non-core” areas, however, the Forest Service and FWS excluded areas adjacent to and in between “core” and “non-core” areas, including these buffer areas specifically designated to allow dispersal. *See, e.g.,* 2019 BiOp at 9 (Figure 5, detailing the

uncertainty regarding the impacts of proposed mountain biking operations”). The BA also acknowledged that this resulted in other unknowns, such as the impacts on the species and its habitat from mountain bike falls. BA at 65. The agencies will have to reinitiate consultation once the actual trail routes are known as such information would constitute “new information reveal[ing] effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered,” or a modification of the Project “in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence.” 50 C.F.R. § 402.16(a)(2).

patchy, checkboard pattern of “core” and “non-core” habitat and the disregarded areas of critical habitat in between).

Exclusion of consideration of impacts outside core and non-core areas also ignores the fact that habitat is dynamic overtime. During years of ideal precipitation and temperatures, when host plants are abundant, the Mount Charleston blue butterfly will be found at “practically every patch of *A. calycosus*.” Boyd & Austin 1999 p. 17. Thus, “habitat is temporally dynamic—areas that serve as habitat in one year might not provide habitat in another, and habitat condition or value can vary spatially week to week, or during a single butterfly flight season—mak[ing] mapping habitat at best an exercise in estimation.” *Id.* p. 22. Also, given that the butterfly may diapause in both egg and larval stage for multiple overwintering seasons, all historic locations where holdover post-diapause larvae may still persist or where adults could recolonize under favorable conditions must be protected. But the delineation of “core” and “non-core” areas disregards the temporal nature of the butterfly’s habitat, instead arbitrarily fixing it at one point in time. Thus, the focus on avoiding only “core” and “non-core” habitat is misguided. Rather, large areas of habitat across the landscape must be protected, like the areas delineated in the Final Critical Habitat Designation, so that patches of high-quality habitat can come and go according to natural temporal and spatial dynamics.

b. The 2019 BiOp Fails to Consider the Serious Impacts of Allowing Summer Operations at the Lee Canyon Ski Area

By narrowly focusing its analysis on the impacts of construction “occur[ing] from surface and vegetation disturbance by crews and equipment resulting in habitat removal,” FWS utterly fails to consider the impacts of opening the area to summer operations during the precise period the Mount Charleston blue butterfly is active. 2019 BiOp at 38. In so doing, FWS fails to properly assess the effects of the action, to properly describe the amount and extent of take, and, ultimately, to ensure the butterfly will not be jeopardized. This violates both the ESA and its implementing regulations.

For instance, FWS’s constrained analysis fails to take into account the heavy impact from mountain biking which will greatly disturb and increase mortality to adults, disrupt dispersal and mating behavior (including oviposition), and destroy eggs. Instead of analyzing the full impacts of thousands of mountain bikers crisscrossing the Mount Charleston blue butterfly’s critical habitat every year, FWS relies entirely on a requirement that mountain bike trails be constructed outside of suitable habitat. 2019 BiOp at 26. This fails for several reasons. First, degradation of mountain bike trails, leading to widening and braiding, as well as expansion of the trail network through short-cuts and user created trails are well known problems that will lead to additional habitat destruction, including potentially suitable habitat. Second, limiting mountain bikes to suitable habitat ignores the importance of dispersal habitat for connecting butterfly habitat patches, potentially isolating butterflies from each other and suitable habitat patches. And third, allowing thousands of mountain bikers to descend through the butterfly’s critical habitat at high speed is likely to result in direct mortality of butterflies through collision and being run over and will disturb butterflies attempting to disperse, forage, or mate. None of these impacts were given serious consideration in the 2019 BiOp.

Likewise, FWS makes no attempt at quantifying the increase in visitation, and concomitant increase in impacts, from the proposed expansion of summer activities despite such information being readily available. The FEIS provides estimates of anticipated user numbers in the summer, including both mountain bikers and hikers. The FEIS states that “the mountain bike park at the ski area would draw approximately 10,000 biker visits the first year of operation and gradually increase to a maximum of 25,000 biker visits in 5 to 10 years.” FEIS at 169. And that on a peak day, LCSA could see 650 mountain bikers, 1,500 people riding the mountain coaster, and 300 individuals riding the zip line. *Id.* at 163 (internal citation omitted). Nowhere does the 2019 BiOp discuss this significant increase in visitors or address their significant impact.

c. The 2019 BiOp Failed to Consider Increased Winter Impacts to the Mount Charleston Blue Butterfly and Its Critical Habitat

In addition to the significant impact caused by the planned summer activities, proposed winter activities will also impact the Mount Charleston blue butterfly in ways the 2019 BiOp failed to consider. For example, the 2019 BiOp failed to consider the ongoing impacts of the newly proposed ski runs. As noted in the Final Listing Determination, while ski runs can sometimes maintain the open canopy favored by the butterfly, “the [LCSA’s] ski runs are not specifically managed to benefit habitat for this subspecies, and operational activities regularly modify [butterfly] habitat or prevent larval host plants from reestablishing in the disturbed areas.” Final Listing Determination, 78 Fed. Reg. at 57,764.

Use of artificial snow is also likely to impact the Mount Charleston blue butterfly and was not adequately considered in the 2019 BiOp. Artificial snow will add snowfall to areas where it otherwise wouldn’t naturally occur and extend the period of snow coverage, altering the response of diapausing eggs and/or larvae, most likely increasing the length of time in diapause and thus increasing the risk of mortality for both eggs and larvae. Indeed, variation in snow cover is known to delay or advance the emergence date of larvae and adults and to influence larval growth and survival. Thompson et al. 2014 pp. 150–51. Moreover, the viability, and thus survival and recovery, of the butterfly is dependent on the synchronization of larval emergence and host plant availability. Changes in microclimate, such as by adding artificial snow and modifying the microtopography via recreation and construction can cause mismatches of larvae and host plant emergence. CaraDonna et al. 2018. Peak bloom in the ski area is the naturally narrow window of mid- to late June to early July, corresponding with the time of adult activity, with fewer flowers at the end of the adult activity period in mid- to late August. Boyd & Murphy 2008 pp. 12–18. The subset of morphologically available nectar resources must be available during appropriate temporal periods and spatially near host plants. Boyd & Murphy 2008 p. 13. Increasing the extent of artificial snow could alter the blooming period of the drought-tolerant plants and subsequently negatively affect the butterfly, which has evolved against the backdrop of natural blooming periods.

The 2019 BiOp further claims that proposed new ski runs and “glading” would benefit the Mount Charleston blue butterfly by creating new open-canopy areas which the butterfly prefers. 2019 BiOp at 43. However, it requires much more than simply creating an open canopy to create suitable habitat. Revegetation of newly created open-canopy areas, free of invasive plants, is critical if such an action will actually benefit the butterfly. However, artificial snow and

increased recreation can increase invasive plants; a significant threat to the butterfly. Thompson et al 2014 p. 269 (“Invasive non-native plant species provide a serious threat to *P. s. charlestonensis*, at least in... the open areas generated by the development of ski-runs at the LCSA. Invasive plants are particularly problematic on the open ski runs of LCSA where *Bromus inermis*, *Festuca ovina* and *Melilotus indica* were seeded to control erosion decades ago and now cover a large portion of all ski slopes.”) (internal citation omitted). Already the vegetation composition in the LCSA on the moderately disturbed ski runs has been noted to be distinct from natural openings in the adjacent forested areas that support the butterfly. Final Listing Determination 78 Fed. Reg. at 57,764. In a LCSA ski run, the vegetation shifts from low lying plants preferred by the butterfly to shrub cover, or effectively unusable habitat, in two years; while the natural process of vegetation encroachment occurs over a much longer time period of 20 years. *Id.* at 57,762. Invasive non-native plants are already a dominant threat to the butterfly in the ski run area and this action of increased recreation will increase invasive plants. Further, the invasive grasses reduce and inhibit dispersal movement of adult butterflies, reducing connectivity of ski run habitat to surrounding areas. Thompson et al. 2014 pp. 152–53.

d. The 2019 BiOp Ignored Other Relevant Impacts Such as Erosion

Finally, the 2019 BiOp fails to adequately account for other impacts to the Mount Charleston blue butterfly, such as the increase in erosion resulting from the Project which can degrade or eliminate habitat. Despite promises to prevent sediment runoff from entering butterfly habitat, 2019 BiOp at 17, this will be impossible during years of heavy rain. Further, the plan to use “heavy equipment” to remove, transport, and replace sediment from erosion, *id.*, will result in extreme ground disturbance. These activities will lead to direct mortality of diapausing or active eggs, larvae, and pupae. Significant erosion damage has already occurred in ski areas in the last two years and it is likely to get worse with the increased ground disturbance due to the proposed project. *Id.* at 18.⁶

Thus, the 2019 BiOp ignores important aspects and underestimates the spatial and temporal effects of the Project and its impact on the Mount Charleston blue butterfly and its critical habitat. The butterfly is already at risk of extinction due to small population size alone. Kuussaari et al. 2009 p. 565. The 10-year ongoing construction planned for this Project will continue to degrade the habitat of the butterfly and, if it does not put the species in jeopardy during the first year of activity, the resultant decline in abundance, loss of habitat, and loss of connectivity will accumulate through subsequent years, including years of operation, putting the species in jeopardy, risking extinction throughout its range and extirpation within Lee Canyon, and adversely modifying the butterfly’s critical habitat designation. Thus, while the 2019 BiOp limits analysis to impacts on “core” and “non-core” areas and construction activities, the Project will have a much larger spatial and temporal impact than is considered. Future ongoing impacts, such as mountain biking, are clearly caused by the Project, would not occur but for the Project,

⁶ Compounding the problem given the threat of invasive species to the Mount Charleston blue butterfly, LCSA has in recent years resorted to using non-native seed mixes to control erosion, as non-native plants tend to grow faster and more abundantly; non-native plants outcompete host and nectar sources and there is no evidence that LCSA will not resort to using non-native seed mixes in areas and time periods with extensive erosion problems.

and are reasonably certain to occur—indeed they’re the point of the Project. As such, the 2019 BiOp fails to follow the best available science and is arbitrary and capricious in violation of both the ESA and the APA.

II. The 2019 BiOp Fails to Analyze the Effects of the Entire Agency Action

The 2019 BiOp failed to consider the best scientific and commercial data available and failed to analyze the effect of the entire agency action when it only considered Phase 1 of the MDP and failed to consider the impacts associated with Phase 2 of the MDP. Specifically, the 2019 BiOp does not discuss Phase 2 of the MDP which involves the construction of two new ski lifts that will open up almost 40 new acres of ski trails. MDP at IV-44. By failing to consider and analyze the total impacts that will result from the implementation of the MDP, including Phase 2, the Forest Service and FWS have failed to analyze the effect of the entire agency action.

The agencies’ failure cannot be excused by arguing that Phase 2 of the MDP is too speculative or uncertain because the MDP lays out Phase 2 in enough detail that the agencies could have (and indeed were required to) analyzed its impacts on the Mount Charleston blue butterfly. *See* MDP at IV-44–52, 21a-b. Regardless, as the Forest Service recognized:

Under the terms of the Ski Area Permit Act of 1986, development and operation of ski areas on National Forest System (NFS) lands is guided by MDPs, which describe existing conditions, identify physical, environmental, and socio-economic opportunities and constraints, establish the permittee’s conceptual vision for the ski area, and outline near-to-long-term plans for achieving that vision.

U.S. Dep’t of Agriculture, Forest Service, Final Environmental Impact Statement: Lee Canyon Ski Area Master Development Plan Phase I (“Final EIS”), 1 (Nov. 2019).

The MDP was also noted by FWS when it first listed the Mount Charleston blue butterfly as endangered. Final Listing Determination, 78 Fed. Reg. at 57,765. Indeed, FWS stated that it was one of four ongoing or future development projects that could impact the butterfly in Upper Lee Canyon. At that time, FWS was already aware of the extensiveness of the MDP, noting that it proposed to: increase snow trails, beginner terrain, snowmaking reservoir capacity and coverage, widen existing ski trails, replace and add lifts, develop “gladed areas” for sliding that would remove deadfall timber to reduce fire hazards, allow for lift-accessed sightseeing and hiking, nature interpretative hikes, evening stargazing, mountain biking, conference retreats and seminars, weddings, family reunions, mountain music concerts, festivals, climbing walls, bungee trampoline, beach and grass volleyball, car rallies, and other activities. *Id.* Furthermore, the impacts of Phase 2 on the butterfly may be severe as FWS recognized that “[b]ecause of its likely small population size, projects that impact even relatively small areas of occupied habitat could threaten the long-term population viability of the [butterfly],” and that “[t]he continued loss or modification of presumed occupied habitat would further impair the long-term population viability of the [butterfly] in Upper Lee Canyon by removing diapausing larvae and, potentially, pupae (if present), and by reducing the ability of the [butterfly] to disperse during favorable years.” *Id.* at 57,767.

Even if FWS was only required to consider Phase 1 in the 2019 BiOp, the subsequent phases of development should have been addressed as effects of Phase 1 development as they otherwise would not occur but for the Phase 1 development and are reasonably certain to occur as Phase 2 has already been contemplated and set forth in the MDP. 50 C.F.R. § 402.14(i) (requiring a biological opinion to “assess the effects of the action”). As such, by failing to analyze the impacts associated with Phase 2 of Development, the Forest Service and FWS failed to adequately analyze the effects of the action.

III. The 2019 BiOp Fails to Meaningfully Analyze the Impacts of the Action on the Mount Charleston Blue Butterfly’s Recovery

The 2019 BiOp utterly fails to meaningfully analyze the effects of the Project on the Mount Charleston blue butterfly’s recovery. A biological opinion is required to analyze whether a project is likely “to reduce appreciably the likelihood of both the survival *and recovery* of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02; *see also Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 931 (9th Cir. 2008) (concluding that the “jeopardy regulation requires [the expert agency, in this case FWS,] to consider both recovery and survival impacts”). Regarding whether a project adversely modifies a species’ critical habitat, FWS must also consider whether the project appreciably diminishes the habitat’s capacity to support and enable the species’ recovery because “the purpose of establishing ‘critical habitat’ is for the government to carve out territory that is not only necessary for the species’ survival but also essential for the species’ recovery.” *Gifford Pinchot*, 378 F.3d at 1070.

The 2019 BiOp’s analysis of recovery, unfortunately, is woefully inadequate. *See* 2019 BiOp at 44. Not only does it fail to meaningfully address the threats facing the species, it fails to grapple with the fact that development projects, such as this one, are one of the threats that led to the species’ listing in the first place. Two of the major reasons for the Mount Charleston blue butterfly’s listing in 2013 was “its few occurrences in a small area” and because of threats from “implementation of recreational development projects and fuels reduction projects” that “will increase the inherent risk of extinction of the remaining few occurrences of the [butterfly].” Final Listing Determination, 78 Fed. Reg. at 57,773. Indeed, at listing, the LCSA was one of less than a handful of locations supporting remaining butterfly populations. *Id.* at 57,753. As one of the few remaining populations, any loss within this metapopulation is extremely detrimental to the species’ viability.

With few small, semi-isolated populations remaining, and its low vagility, the Mount Charleston blue butterfly is susceptible to population declines and is not currently resilient.⁷ Carvajal-Acosta et al. 2015 p. 6. This is evidenced by the fact that the butterfly is getting further from recovery in the years since its ESA listing. At listing, the butterfly occupied only three of 17 historical locations within seven sites that were presumed to have extant subpopulations. Final

⁷ A species is resilient if its populations are able to persist long-term in the face of disturbance; resiliency requires maintaining abundant individuals in populations to maintain population stability or growth, maintenance of connectivity between populations by conserving habitat patches throughout the landscape, and threat abatement. Wolf et al. 2015 pp. 204–205.

Listing Determination, 78 Fed. Reg. at 57,753. Four populations the butterfly have since been declared extirpated. *See* Gulley 2016; Gulley 2017; Thompson 2018. In total, less than 100 individuals have been observed in recent surveys. Gulley 2017; Thompson 2018.

As such, the Project further reduces Mount Charleston blue butterfly's already low resiliency and exacerbates threats. The proposed expansion of ski and summer recreation activities in the species' critical habitat would further imperil the butterfly and reduce the likelihood of recovery. The 2019 BiOp conclusion—that the Project will “not appreciably diminish the ability of [butterfly] to reach stable or increasing population trends in the future,” 2019 BiOp at 44—lacks any scientific support. But FWS's jeopardy and adverse modification determinations must be based the best available science, not belief.

The 2019 BiOp's Jeopardy Analysis is also fatally flawed because it fails to identify a tipping point that, once past, the Mount Charleston blue butterfly can no longer recover. *Wild Fish Conservancy*, 628 F.3d at 528. The fact that the butterfly might continue to “cling to survival,” does not mean that the Project does not appreciably diminish the species' chance for recovery. *Id.* at 527 (citing *Nat'l Wildlife Fed.*, 524 F.3d at 931). Without knowing, or even having a rough estimate of, the point at which recovery is no longer feasible, FWS has no measuring stick against which to compare the Project's impacts. As such, the 2019 BiOp is arbitrary and capricious, and violates the ESA.

IV. The 2019 BiOp's Reliance on the Forest Service's Minimization Measures Violates the ESA

The 2019 BiOp's finding that the Project is not likely to jeopardize the continued existence of the Mount Charleston blue butterfly or adversely modify its critical habitat is based on the Forest Service's proposed minimization measures. 2019 BiOp at 46. But if FWS and the Forest Service are going to rely on the proposed minimization measures, those measures “must be reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.” *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 1139, 1152 (D. Ariz. 2002) (citing *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987)). They must also provide sufficient detail for FWS to analyze, based on the best available science, whether they will actually avoid jeopardy and adverse modification. *See* 50 C.F.R. § 402.14(g)(8); *see also* Regulations for Interagency Cooperation, 84 Fed. Reg. 44,976, 45,002-03 (Aug. 27, 2019) (detailing the action agency's duty “to include the level of detail necessary for the Services to understand the action and evaluate its effects to listed species or critical habitat”). However, the proposed minimization measures are little more than a “laundry list” of proposals, few of which will actually benefit or prevent harm to the butterfly on the ground. *Id.* at 1153.

For instance, FWS assumes that a small buffer around Mount Charleston blue butterfly habitat will eliminate all activities within the buffer, yet this ignores the reality that it is impossible to contain adult butterflies within this buffer or to actually exclude recreationists. 2019 BiOp at 40. Regardless, the proposed 5-meter buffer has no scientific grounding. *Id.* at 26. The other “minimization measures” meant to reduce this impact are not sufficient either, as

“avoiding habitat during the adult flight period” is impossible since the Project will open the area to *more* summer recreation during the flight period of the butterfly. Nor will any amount of “training and public education” and “monitoring” prevent adult butterflies from being displaced. *Id.* at 40.

Two other related measures are to “[a]void suitable habitat in the design phase wherever possible” and “[w]herever practical, avoid impacting marked suitable habitat within the construction disturbance area.” 2019 BiOp at 26. However, such a determination can be made anytime the “qualified biologist” determines that “it is not permissible to apply the design criteria and minimization measures.” *Id.* at 25. Yet there is no definition of what is “permissible,” and such a vague statement cannot be the basis for avoiding jeopardy as it provides no, let alone sufficient, detail about when such a determination will be made. An agency cannot skirt its requirement to ensure that an action does not jeopardize a species by saying that it tried, but that it was not “permissible.”⁸

Another minimization measure is to conduct activities outside of the flight period “when possible.” 2019 BiOp at 26. This measure is worth little and less since the Mount Charleston blue butterfly flight period ranges from mid-June to mid-September, which is the prime construction time in the Spring Mountains due to the presence of snow during other months. Further, even if construction avoided the “flight period,” eggs, larvae, and pupae are always present in the project area and thus this minimization measure will not reduce harm to immature stages of the butterfly.

Finally, the minimization measures mention restoration and reseeded but do not provide areas or details. The harm done by the Project, particularly the mountain bike trails, will destroy large swaths of potential habitat and reduce connectivity, thus any amount of restoration will not mitigate this impact in this endemic butterfly’s already tiny critical habitat.

Thus, the minimization measures proposed by the Forest Service fail to “address the threats to the species in a way that satisfies the jeopardy and adverse modification standards,” *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. at 1152, and fail to provide sufficient detail to assess the effects of the action on listed species and critical habitat. As such, they cannot support FWS’s conclusion that the Project will not jeopardize the continued existence of the Mount Charleston blue butterfly or adversely modify its critical habitat.

V. The 2019 BiOp’s Incidental Take Statement Impermissibly Permits the Indefinite Take of the Mount Charleston Blue Butterfly Without an Adequate Reinitiation Trigger

The 2019 BiOp’s ITS violates the ESA because it lacks an adequate reinitiation trigger; instead allowing the indefinite take of Mount Charleston blue butterflies, regardless of how many are lost. The ITS requires reinitiation if more than 13.7 acres of “core” or “non-core” habitat will be lost. 2019 BiOp at 48–49. 13.7 acres, however, is the scope of the entire Project as set forth by the Service. But an ITS must “set forth a ‘trigger’ that, when reached, results in an unacceptable

⁸ Rather, the agency would need to seek and have granted “exemption for such action by the Committee pursuant to subsection (h) of [Section 7].” 16 U.S.C. § 1536(a)(2).

level of incidental take, invalidating the safe harbor provision [of the ESA], and requiring the parties to re-initiate Consultation.” *Or. Natural Res. Council v. Allen*, 476 F.3d 1031, 1038 (quoting *Ariz. Cattle Growers’ Ass’n v. United States Fish & Wildlife, BLM*, 273 F.3d 1229, 1249 (9th Cir. 2001)). That trigger cannot be equivalent to the loss of every animal associated with a Project. *Id.* Because the ITS allows for the loss of every butterfly associated with the Project (as currently conceived and analyzed in the 2019 BiOp), no matter how many are lost, and fails to quantify or limit take from activities beyond construction, including mountain biking, it violates the ESA and is arbitrary and capricious.

VI. The Forest Service Violated the ESA in Relying on FWS’ 2019 BiOp

Section 7 of the ESA imposes a substantive duty on the Forest Service to ensure that the Project is not likely to jeopardize the continued existence of any listed species, or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2); *Ctr. for Biological Diversity*, 698 F.3d at 1127. Relying on a faulty biological opinion violates this duty. *Ctr. for Biological Diversity*, 698 F.3d at 1127. “In particular, [the Forest Service] “cannot meet its section 7 obligations by relying on a Biological Opinion that is legally flawed. . .” *Id.* at 1127-28.

For all the above stated reasons, the 2019 BiOp is unlawful. The Forest Service relied on the 2019 BiOp in determining that the Project will not violate Section 7 of the ESA. “Accordingly, the [Forest Service] violated its substantive duty to ensure that its authorization of the Project would not jeopardize the survival of the [affected listed species] or adversely modify the species’ critical habitat.” *Ctr. for Biological Diversity*, 698 F.3d at 1128.

The Forest Service must also provide FWS “with the best scientific and commercial data available or which can be obtained during the consultation for an adequate review of the effects that an action may have upon listed species or critical habitat.” 50 C.F.R. § 402.14(d); *see also Resources Ltd. v. Robertson*, 35 F.3d 1300, 1304 (9th Cir. 1994). Here, however, the Forest Service has failed to provide sufficient detail about how their proposed minimization measures will “address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.” *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. at 1152. By failing to develop and provide this information, the Forest Service is in violation of its duty to insure that its action is not likely to jeopardize the continued existence of the Mount Charleston blue butterfly and, in turn, the Forest Service’s reliance on the 2019 BiOp is unjustified, unlawful, and arbitrary and capricious. *See Resources Ltd.*, 35 F.3d at 1304–05.

Conclusion

As set forth above, the parties to this letter intend to pursue litigation in federal court after sixty days, and will seek injunctive, declaratory, and other relief, including an award of fees and expenses incurred in investigating and prosecuting this action. To avoid litigation, FWS and the Forest Service should immediately halt reliance on the 2019 BiOp and ITS for lethal take of Mount Charleston blue butterflies in the project area until the agencies reinitiate and lawfully complete formal consultation under section 7 of the ESA and its implementing regulations.

If you have any questions or wish to discuss this matter further, please contact us.



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