



June 28, 2007

Dirk Kempthorne, Secretary of Interior
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
Fax: 202-208-5048

Dale Hall, Director
U.S. Fish and Wildlife Service
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
Fax: 202-208-6965

BY CERTIFIED MAIL & FAX

**Re: Emergency Endangered Species Act listing request for the
Sacramento Mountains Checkerspot Butterfly**

Dear Secretary Kempthorne and Director Hall:

Forest Guardians and the Center for Biological Diversity hereby petition for listing of the Sacramento Mountains Checkerspot Butterfly (*Euphydryas anicia cloudcrofti*) under the Endangered Species Act as described in 16 U.S.C. § 1531 *et seq.* This petition is filed under 5 U.S.C. § 553(e), 16 U.S.C. § 1533(b)(3)(A) and 50 C.F.R. § 424.19, which give interested persons the right to petition for the issuance of a rule.

Petitioners also request the Service emergency list the butterfly, which is threatened with imminent extinction. The Service has the authority to promulgate an emergency listing rule for any species when an emergency exists that poses a significant risk to the species. 16 U.S.C. § 1533(b)(7). In this case, the spraying of pesticides over this butterfly subspecies' narrow range poses such an emergency. Such rule shall take effect immediately upon publication in the Federal Register and shall be effective for a maximum of 240 days. *Id.*

Ongoing and proposed widespread insect control activities in and around Cloudcroft, New Mexico pose a high-magnitude, imminent threat to the Sacramento Mountains checkerspot butterfly (“butterfly” or “checkerspot”). Continued loss and degradation of the butterfly’s habitat, proliferation of non-native weeds, fire suppression, climate change, and other factors also contribute to the need to list this subspecies. Because of its extremely limited range, its susceptibility to local extirpations, and specific life history traits, all of the threats we describe may pose an imminent danger to the very existence of this butterfly.

History of the federal listing effort

The Center for Biological Diversity petitioned for listing of the checkerspot as endangered on January 28, 1999. The petition included an emergency listing request, based on a proposed U.S. Forest Service (USFS) land exchange involving butterfly habitat.¹ The U.S. Fish and Wildlife Service (USFWS) published a positive 90-day finding on December 27, 1999. USFWS then published a court-ordered 12-month finding on September 6, 2001, proposing to list the subspecies as Endangered and designating 54-square-miles as critical habitat. In the listing proposal, USFWS identified a multitude of threats to the checkerspot, including private and federal land habitat loss and degradation, catastrophic wildfire, fire suppression, spread of non-native vegetation, insect control, herbicide application, collection, extreme weather, roads, and recreation. The situation described by USFWS in the listing proposal was dire – so dire that the agency recommended Endangered status and the designation of all suitable habitats, including unoccupied habitats and dispersal corridors, as critical habitat. *See 66 Fed. Reg. 46575-95.*

In an abrupt shift, USFWS withdrew the listing proposal on December 21, 2004, describing the threats to the butterfly as reduced below the statutory definition of threatened or endangered and leaning heavily on actions taken by USFS as a rationale for not listing this critically imperiled species. USFWS also dismissed the impact of private land habitat modification. *See 69 Fed. Reg. 76428-76445.*

USFWS erred in withdrawing the listing proposal, failing to consider the checkerspot’s extremely narrow distribution, small and isolated populations, and the fact that it is vulnerable to so many threats, many of which the USFS exerts little control over, such as drought, climate change, private lands development, and noxious weed proliferation. USFWS also failed to consider private land insect control efforts that are currently underway in the Village of Cloudcroft, and erroneously assumed that USFS would not spray for insects on the Lincoln, as demonstrated by the current proposal to spray.

¹We have attached the 1999 listing petition and subsequent Center for Biological Diversity correspondence to the U.S. Fish and Wildlife Service concerning the need to list the checkerspot as Endangered under the Endangered Species Act and designate critical habitat for this subspecies. *See Exhibits 1-2.*

New information mandating emergency listing

In both the listing proposal and withdrawal, USFWS did not foresee the magnitude of the current threat from insect control. The agency stated in the listing proposal:

The application of carbaryl and *Bacillus thuringensis* (BT) to control insects poses a threat to the Sacramento Mountains checkerspot butterfly. The petitioner reported that the entire Douglas-Fir forest in the Sacramento Mountains was treated in 1984 with either carbaryl or BT to control an outbreak of forest insects. Carbaryl is considered moderately to highly toxic and is lethal to many non-target insects, whereas BT can kill the larval stage of many insects, including butterflies (Cornell University 1998a, 1998b). These insecticides were applied during months when butterfly larvae were not in diapause; however, the areas which were treated with carbaryl or BT were heavily wooded and are not areas that were inhabited by the butterfly. Nevertheless, drift of these insecticides into areas used [by] the butterfly could have occurred. It is unknown what affect these treatments may have had on the Sacramento Mountains checkerspot butterfly because we have no pretreatment data for comparison. There has been a recent outbreak of tussock moth (*Orgyia pseudotsugata*) in the Sacramento Mountains (G. Garcia, pers. comm. 2000). The FS may attempt to control the outbreak using a virus specific to the tussock moth, BT, or an application of insecticide (G. Garcia, pers. comm. 2000). Future applications of carbaryl or BT may pose a potential risk for the viability of Sacramento Mountain checkerspot butterfly localities” (66 *Fed. Reg.* 46583).

The listing proposal considered future insect control a risk to the butterfly, but focused on national forest spraying.

In the listing withdrawal, USFWS reversed their previous conclusion that insect control was a significant threat:

In the proposed rule, we also determined that the application of carbaryl and *Bacillus thuringensis* (BT) to control insects poses a threat to the butterfly. Carbaryl is considered moderately to highly toxic and is lethal to many non-target insects, whereas BT can kill the larval stage of many insects, including butterflies (Cornell University 1998a, 1998b). The Forest Service stated that any future proposed treatments would need to be analyzed under NEPA, and the suggestion that carbaryl or BT would be used to control these or other forest insects was premature. Although future applications of carbaryl or BT may pose a potential risk to the butterfly, there are no proposals to spray for insect outbreaks currently or in the future (Forest Service 2001, Service 2004b). This action is no longer considered a significant threat to the species (69 *Fed. Reg.* 76443).

This conclusion was not based on any new information or assurances from either the Village of Cloudcroft or the Lincoln National Forest that they would not spray and indeed, that is what both entities now intend to do.

Insect control underway on private lands

Private landowners are currently conducting insect control in the Village of Cloudcroft, using a product called "Confirm 2F," which can kill all Lepidoptera and threatens the survival of the butterfly. There is widespread participation by residents in current insecticide applications. The Village and Otero County governments are considering a plan to conduct even more extensive insect control. Residents and municipal government officials are pressuring USFS to spray adjacent national forest land. There is every indication that control efforts will be repeated in the fall, when newly-hatched checkerspot larvae are actively feeding and therefore most vulnerable.

Articles from the *Alamogordo Daily News* and *Albuquerque Journal* have reported this effort:

Members of a group that has started spraying private property in the village encouraged village leaders not to rely on the U.S. Forest Service and not to wait for the Forest Service to act. *ADN 6/13/2007.*

Jim Maynard, owner of Green Mountain Real Estate and developer of The Woodlands subdivision, said spraying on private property will continue as soon as Wednesday when a replacement pump arrives. *ADN 6/13/2007.*

A group of residents in Cloudcroft began spraying their properties Sunday morning in an effort to quell further devastation by the spruce budworm and looper caterpillar, the two primary insect species that have been destroying trees in the Lincoln National Forest and on private lands for the past year or longer. *ADN 6/12/2007.*

Organized by Cloudcroft residents Dr. Laurel Walters, John Cronin, Jim Maynard, Frank Starns and John Bennett, the group quickly drew 15 volunteers who have been manning phones for the past two weeks in an effort to notify residents and property owners. *ADN 6/12/2007.*

"We know that with the other properties in Cloudcroft not being sprayed yet, and with the Forest Service not spraying the surrounding forest at the same time, that we are going to have to spray several times in order for this to be effective," Maynard said. "We care about our properties, and if that is what it takes, we will do whatever it takes." *ADN 6/12/2007.*

"When Dr. Walters, with 25 years of field work as an entomologist, tells us that the spruce budworm is the biggest immediate threat to our lands, and Otero County agrees with that, we're putting ourselves in that corner,"

Maynard said. "The majority of loopers have [sic] already pupated and will not be affected by spraying now. We know we will have to wait until the next generation comes out as larvae in late September or early October to have the biggest impact on the loopers. *ADN* 6/12/2007.

"The Forest Service has finally seen the light on that issue," he said. "What we don't understand is that they can't see the immediate threat that the budworm is to the forest, and why they don't act on this now, as they should. If the other property owners up here don't act now to save what they have, they may very well be living on lots with no trees in the not-too-distant future. *ADN* 6/12/2007.

Cloudcroft Village and Otero County leaders expect to announce their plans within the next week or so to spray pesticide in the village to kill insect larvae that are damaging trees. *ADN* 6/13/2007.

See Exhibit 3: 2007 news articles regarding Cloudcroft spraying. The spray reportedly being used in these private efforts is Confirm 2F, which targets lepidopterous larvae and will therefore kill the checkerspot if it is in a larval phase.²

Insect control planned on federal lands

Insect control proposed by the U.S. Forest Service would likely impact butterflies.³ While USFWS remarked in the listing proposal that, "The Sacramento Ranger District in the Lincoln National Forest has been instrumental in avoiding or minimizing some recent potential impacts to the butterfly on their lands" (66 *Fed. Reg.* 46577), USFS may now be presenting a direct threat to the butterfly by conducting insect control. The insect control would target budworms, looper caterpillars, and tussock moths. A June 8, 2007, USFS press release states that the county, village, and USFS will "work together on a proposal for an aerial spray application of a biological agent, *Bacillus thuringiensis* (Btk)," likely in September or October 2007. Furthermore, USFS would skip the National Environmental Policy Act review process:

The Lincoln National Forest (LNF) will be seeking alternative arrangements from the Council on Environmental Quality to streamline procedures required by the National Environmental Policy Act (NEPA) in order to meet the October schedule. The Forest will be focusing on National Forest System (NFS) lands within a mile to a mile and a half around the VOC [Village of Cloudcroft]. *See* Exhibit 4: USFS 6/8/2007 press release.

²See http://pmep.cce.cornell.edu/profiles/insect-mite/propetamphos-zetacyperm/tebufenozide/tebufenozide_let_402.html.

³We have attached as Exhibit 5 comments submitted by Forest Guardians to USFS on the proposed insect control, dated June 24, 2007.

The preferred control method of spraying *Bacillus thuringiensis* var. *kurstaki* (Btk), a bacterium, will harm non-target Lepidoptera such as the checkerspot.⁴ The Environmental Protection Agency considers the risk of Btk “minimal to nonexistent to nontarget organisms including endangered species except endangered insect species.”⁵ Swadener (1994) writes,

Large scale applications of B.t. can have far reaching ecological impacts. B.t. can reduce dramatically the number and variety of moth and butterfly species, which in turn impacts birds and mammals that feed on caterpillars. In addition, a number of beneficial insects are adversely impacted by B.t...

In Washington, B.t. applications in King and Pierce counties to kill gypsy moths reduced spring moth populations by almost 90 percent... In addition, one rare species appeared to have been eradicated from the treatment zone...⁶

Miller (1990) found a significant reduction in species richness among uncommon species in a site treated with Btk. Six species which occurred in an untreated site were not present in the treated site. He writes,

...if any of the species had been limited in its distribution, or a unique genotype of the species was locally endemic, then the population/species would be at high risk of becoming extinct.⁷

USFWS has recognized the danger of Btk to the Karner Blue butterfly, listed as Endangered under the ESA. The recovery plan for that subspecies states,

In laboratory tests, even the relatively specific insecticide, *Bacillus thuringiensis* *kurstaki* (Btk), used to control the gypsy moth killed about 80 percent of the Karner blue larvae fed Btk treated lupine leaves (Herms 1997). Because the timing of Btk applications for gypsy moth control typically coincides with the larval stage of the Karner blue, application of this insecticide results in Karner blue mortality (Herms 1997). Individuals and agencies (e.g. U.S. Forest Service) wishing to use Btk for gypsy moth suppression are encouraged by the Service to use alternative, non-lethal control methods in Karner blue butterfly areas (Recovery Plan at p. 40).⁸

⁴Other inert chemicals are in Btk, such as surfactants and emulsifiers to spread it and keep it evenly dispersed. These may pose additional risks.

⁵See Environmental Protection Agency. 2006. “*Bacillus thuringiensis* subspecies *kurstaki* strain M-200 (006452) Fact Sheet.” Online at: www.epa.gov/pesticides/biopesticides/ingredients/factsheets/factsheet_006452.htm.

⁶See Swadener, Carrie. 1994. “*Bacillus Thuringiensis* (B.T).” *Journal of Pesticide Reform* 14(3):13-20.

⁷See Miller, Jeffrey C. 1990. “Effects of a Microbial Insecticide, *Bacillus thuringiensis* *kurstaki*, on nontarget Lepidoptera in a Spruce Budworm-infested Forest.” *Journal of Research on the Lepidoptera* 29(4):267-276 at p. 275.

⁸The Karner Blue butterfly’s recovery plan is at: http://ecos.fws.gov/docs/recovery_plans/2003/030919.pdf.

Avoid using insecticides in association with the Karner blue. Most insecticides are toxic to Karner blue butterfly larvae. Even though some insecticides may be used to maintain or improve habitat, use of insecticides is discouraged. One example of an insecticide used in Karner blue habitat is *Bacillus thuringiensis* var. *kurstaki* (Btk) used to control the gypsy moth which causes defoliation of trees. Experimental testing of the effect of Btk on Karner blues found it caused mortality of Karner blue larvae (Herms et al. 1997). If insecticide use is necessary, it should be used at a time when Karner blue larvae and adults are not susceptible to the insecticide, its residues, or its metabolic by-products. The Service recommends that no aircraft broadcasting of Btk should occur within one-half mile of any Karner blue butterfly sites. Distances of less than one-half mile may be acceptable on a case by case basis by building in precautions to minimize drift (refer also to APPENDIX G). Other insect control tactics might be substituted for insecticides, but the potential detrimental effects of these other control tactics should be considered before they are used (Recovery Plan at Appendix G-83).

Given the narrow distribution of the checkerspot, USFS's proposed spraying could result in the extinction of this butterfly. Moreover, it would be difficult for any insect control to discriminately target budworms and loopers and not impact checkerspots, since their feeding stages generally overlap. The insects being targeted all belong to the order Lepidoptera, which includes all moths and butterflies. Moths and butterflies are closely related, more to each other than any other type of insect (such as bees or flies) and generally share the same biological responses to threats such as insect control.

In addition, the Lincoln National Forest is advising private landowners that it is "fine" to spray:

Lou Woltering, forest supervisor for the Lincoln, was asked Friday for his reaction to the spraying effort by the residents.

"It's certainly within their rights to do that," Woltering said. "I think that's great if that is what they have chosen to do. The Forest Service has no restrictions on private lands and on what property owners can do on their lands. If they want to spray, that is fine." *ADN* 6/12/2007 (Exhibit 3).

It is not fine to spray. Rather, it places the checkerspot at grave risk.

We are encouraged that USFS and USFWS have been discussing impacts to the checkerspot from spraying. Lou Woltering, comm. to Forest Guardians, dated 6/13/2007. However, there is no assurance that USFS will not spray because there are inadequate regulatory protections for the butterfly, given its unlisted status. This is a particular

danger given the enormous political pressure USFS is receiving from the county, village, and Rep. Steve Pearce (R-NM) to address the insect outbreak.⁹

Climate change in the Southwest

Scientific information not considered in, or subsequent to, the withdrawal indicates that the impacts of climate change will be especially severe in New Mexico and the southwestern U.S.¹⁰, and the harms from climate change to butterflies have been particularly well documented. Impacts include, but are not limited to: dependence on particular plants can make butterflies very habitat specific and thus vulnerable to climate conditions affecting habitats they occupy; altered growing seasons of plant hosts can shift under climate change, leading to starvation of larvae; extreme weather can kill individual butterflies at various life stages; weather can impact adult flight time, thus impacting the number of eggs laid and consequent reproduction; and altered flight times can also affect butterflies' ability to colonize unoccupied habitat.¹¹

Butterflies with limited dispersal abilities and specialized habitat needs are at significant risk.¹² Climate change impacts on other checkerspots have been documented.¹³ The Edith's checkerspot, was found to shift its range northward by approximately 100 miles.¹⁴ However, New Mexico penstemon (*Penstemon neomexicanus*), is the Sacramento Mountains checkerspot butterfly's primary host plant and the only plants known for egg-laying sites, and it is restricted to the Sacramento Mountains and the Capitan Mountains to the north.¹⁵ Just a slight shift in either the checkerspot's or the plant's distribution, productivity, or other factors could further imperil the checkerspot. These impacts from climate change underscore the need for expeditious listing of this butterfly subspecies.

Ongoing threats to the checkerspot

The listing proposal reported a desperate biological situation:

⁹See Exhibit 3 (news articles) and Pearce's questioning of Mark Rey, Under Secretary for Natural Resources and Environment at the US Department of Agriculture, at: <http://www.pearce.house.gov/newscenter.html>.

¹⁰See <http://www.nmclimatechange.us/background-impacts.cfm>. We incorporate this website and links by reference.

¹¹See Hellmann, Jessica J. 2001. "Butterflies as model systems for understanding and predicting climate change." In *Wildlife Responses to Climate Change*. Eds. Stephen H. Schneider and Terry L. Root. Washington: Island Press; Hellman, Jessica J. 2002. "The effect of an environmental change on mobile butterfly larvae and the nutritional quality of their hosts." *The Journal of Animal Ecology* 71(6):925-936; Parmesan, Camille. 1996. "Climate change and species' range." *Nature* 382:765-6; Murphy, D.D., and S.B. Weiss. 1992. "Effects of climate change on biological diversity in Western North America: Species losses and mechanisms." Chapter 26 in *Global Warming and Biodiversity*. Eds. R.L. Peters and T.E. Lovejoy. Castleton, NY: Hamilton Printing. Online at: <http://www.ciesin.org/docs/002-262/002-262.html>. We incorporate these sources by reference.

¹²See Hellmann 2001, 2002.

¹³See Parmesan 1996, Murphy and Weiss 1992.

¹⁴See Parmesan 1996.

¹⁵See http://nmrareplants.unm.edu/rarelist_single.php?SpeciesID=137.

Many of the remaining Sacramento Mountains checkerspot butterfly populations are likely small and/or not viable (i.e., are likely to become extirpated in the near future). The isolated localities and limited geographic range of the butterfly indicate that the species is particularly vulnerable to perturbations (disturbances that impact the habitat and host plants associated with the species), which could lead to extinction (Ehrlich et al. 1972; Thomas et al. 1996). (66 *Fed. Reg.* 46577)

Given the low probability of improving the status of the Sacramento Mountains checkerspot butterfly in the next few years (e.g., the high risk of a catastrophic wildfire in the next few years, the continued elimination of suitable habitat by development, the likelihood of an extreme weather event occurring, the reduction or elimination of larval or adult food plants by grazing and/or nonnative plants), this species is vulnerable to extinction throughout all or a significant portion of its range (66 *Fed. Reg.* 46586).

The state of the butterfly - small, isolated populations within an extremely limited geographic range subject to a multitude of threats - has not changed since the proposal. To the contrary: the suitable habitat estimate in the 2004 withdrawal was 2,709 acres, which is only 52% of the estimate provided in the 2001 proposal (5,198 acres). The estimate of total occupied habitat was under 2,000 acres in both the proposal and withdrawal.

Some threats to the checkerspot may have decreased due to new information or tangible conservation measures between the proposal and withdrawal, while many others did not:

- *USFS land transfer*: 3 of the 81 acres to be transferred to Cloudcroft are butterfly habitat. The majority of the five parcels to be transferred would be greenbelts and not developed or mowed and therefore less of a threat to the checkerspot than previously thought.
- *Development limits in Cloudcroft*: the withdrawal reports that development is no longer being encouraged by the Village of Cloudcroft due to a lack of water. In addition, the projected development amounts to much less direct disturbance of butterfly habitat than was estimated in the listing proposal. The Village is also no longer planning a 9-hole golf course due to lack of water. USFWS also reports that mowing is not a threat, given that butterflies (in various life stages) and food plants were found in areas that had been mowed. Overall, development was no longer considered by USFWS to be a significant threat to the butterfly.

While Otero County amended the Subdivision Ordinance on July 29, 2005, to direct the use of best management practices to minimize effects from future subdivisions, including a biological investigation of private property before any construction, this ordinance is set to expire in four years, on July 1, 2011. Although the threat of development decreased following the proposed rule, it still has continued and combined impacts and, combined with other threats such as

spraying, remains significant. If the butterfly is listed, this threat can be addressed. Without listing, there is no certainty that development activities will not harm the butterfly.

- *Modification of USFS campground projects*: the withdrawal reported that improvements at Pines Campground reduced the capacity of the campground, and USFS installed a barrier to butterfly habitat. Improvements at the Fir Campground included a boundary fence to reduce visitor impacts on butterflies. Measures proposed by USFS at five other campgrounds would reduce current impacts to butterflies by reducing the number of camping sites and condensing the campgrounds into smaller areas.

While the campground projects may have helped reduce impacts to butterflies at particular localities, the listing withdrawal does not address all of the evidence provided in the listing proposal that increasing recreation demands, including off-road vehicle use, camping, mountain biking, and other recreational uses, can result in harm to butterflies in various life stages and to their food plants.

In the listing withdrawal, USFWS spuriously points to century-old railroad and logging activities on the Lincoln to argue that, “it appears that the butterfly and its foodplants can tolerate a certain amount of natural and man-made disturbance.” (p. 76434). This is a general and poorly evidenced assertion that ignores the bulk of scientific data presented in the listing proposal. USFWS uses anecdotal evidence to argue that, “the species and its foodplants have been demonstrated to be resilient to some disturbances (e.g., edges of the football field, campgrounds, and railroad),” thereby abandoning the science-based, precautionary reasoning in the listing proposal to consider whether populations co-existing with deleterious land uses were actually population sinks.

- *Roads, corridors, and powerlines*: the listing withdrawal discusses impacts from these projects as temporary and of limited area. The listing proposal, conversely, discusses the dangers to small populations from larvae, adult butterflies, and host plants from being killed. In addition, the listing proposal discusses the problems of road mortality, fragmentation of habitat, and erosion and dust impacts to adjacent habitat. The listing withdrawal presents no new scientific evidence to justify its disregard of the impacts considered in the listing proposal.
- *Livestock grazing*: USFWS relies on USFS utilization rates of 35% to argue that livestock grazing does not present a threat to the butterfly. In the listing withdrawal, USFWS states, “the Forest Service manages these allotments consistent with existing range management standards and guidelines under their Forest Plan, and when management adjustments are necessary to meet the forage levels, adjustments are made through the permit administration process (Forest Service 2002d, 2004i, 2004l, United States District Court 2002). The existing forage utilization (i.e., 35 percent) is adequate for the protection of the butterfly to limit adverse effects (Service 2004c)” (69 *Fed. Reg.* 76437).

However, those utilization rates are continually exceeded by permittees, and USFS is doing little about it. USFWS noted in the listing proposal that the Sacramento Allotment has suffered excessive utilization rates since 1991 and states, “herbaceous plants and grasses have been effectively removed from the Sacramento Ranger District by intensive overgrazing” (66 *Fed. Reg.* 46582). The agency states, “Grazing levels in the known range of the Sacramento Mountains checkerspot butterfly continue to degrade the quantity and quality of suitable habitat” (66 *Fed. Reg.* 46582). USFWS further notes that USFS has failed to adjust grazing levels during drought, resulting in extensive damage. This candid assessment is missing from the listing withdrawal. Instead, USFWS depends on USFS regulations and policies that it knows are being chronically and regularly violated by permittees, to the detriment of the butterfly and its habitat. For example, in 2003, the CC Walker, James, Russia Canyon, and Sacramento Allotments – which are all allotments containing checkerspot habitat – had overall leaf-lengths of less than 4 inches, indicating overgrazing. *See Exhibit 6: 2003 USFS Monitoring Data.* In addition, herds of escaped and breeding horses are using the northern third of the checkerspot’s formerly proposed critical habitat, compounding grazing effects.

- *Catastrophic wildfire and fire suppression:* based on observations from the Scott Able fire in May 2000, USFWS concludes in the withdrawal that catastrophic wildfire may not be as great of a threat as suspected in the listing proposal. USFWS also argues that thinning projects are increasing butterfly habitat, including corridors for dispersal. The Scott Able fire hopped over drainage bottoms, presumably because they were more moist, and burned hillsides in a mosaic. The checkerspot’s range did not overlap with that of the fire’s, as the fire was too low in elevation.

The Service’s reasoning in the withdrawal on fire is highly speculative, particularly in contrast with the discussion in the listing proposal. In the proposal, USFWS stated that, “we believe that fire exclusion has substantially affected the species and will likely continue to significantly degrade the quality and quantity of suitable habitat” (66 *Fed. Reg.* 46579). The agency noted that both cattle grazing and fire suppression have led to high-density ponderosa pine and mixed-conifer forests, thereby increasing the threat of catastrophic wildfire. The contribution of livestock grazing to dense forest conditions is not noted in the withdrawal. In addition, the withdrawal drops consideration of the fact that, alongside the increase in woody plants, there has been a decrease in herbaceous vegetation used by butterflies: “the quality and quantity of the available butterfly habitat is decreasing range wide.” *Id.* It ignores the difficulties in restoring natural fire ecology given soil loss, non-native vegetation, and need to protect homes and businesses. Also, in the listing proposal, USFWS noted that it is unknown whether proposed thinning projects will reduce the threat of catastrophic wildfire to the butterfly and its habitat.

The November 2005 conservation plan is also more circumspect about the benefits of thinning than the listing withdrawal. The plan states, “neither the butterfly nor its host plants have been observed in the thinned forest edges,” and “Given the novelty of the extensive thinning approach in the Lincoln National Forest, there exists no data to make adequate predictions concerning the response of the butterfly to the increase in thinning” (p. 25).

- *Recreational impacts*: while off-road vehicle (ORV) use is increasing on the Lincoln and occurs in approximately half of butterfly habitat, USFWS relies on conservation measures by USFS, along with an outdated (1983) estimate of areal impacts of ORVs to conclude that this threat is not significant. However, illegal, off-trail OHV use is increasing, in spite of signs designating trails. ORVs routinely go around signs on the Lincoln and cruise through pristine meadows far from any roads. USFWS admits that, “some temporary OHV-related impacts will continue to affect the butterfly and its habitat. OHV impacts will likely result in the temporary crushing or possible destruction of foodplants in localized areas and mortality of individual butterflies” (69 *Fed. Reg.* 76440). FWS does not consider soil erosion, habitat fragmentation, and exotic weed proliferation that results from ORVs, only the extent of the tracks created. A USFS report dated October 18, 2004 documented ORV use in the butterfly’s habitat. *See* Conservation Plan at p. 56.¹⁶
- *Noxious weed management*: USFS has shifted to a manual weed-pulling program to control noxious weeds in butterfly habitat. While this alleviates the threat of herbicidal control to checkerspots, it does not fully address the threat of noxious weeds. The listing withdrawal curtly states, “nonnative vegetation and the application of herbicides are currently being managed” (69 *Fed. Reg.* 76441). This contrasts sharply with the more accurate assessment in the listing proposal that non-native vegetation is an enormous problem on the Lincoln National Forest, with 30% of mountain meadows and nearly half of some individual meadows dominated by noxious weeds in 1995.
- *Insect control*: as discussed in more detail above, large-scale insect control spraying is currently taking place in the Village of Cloudcroft, and USFS may spray on federal lands in the range of the butterfly. Neither the listing proposal nor the withdrawal considered the full magnitude of this threat.
- *Collection*: while the listing proposal reviews in detail a strong basis for considering this a threat, including the butterfly’s life history characteristics, attractiveness of a rare taxon to collectors, and newspaper publications promoting collection, USFWS relies on a 2000 closure order to dismiss this threat in the

¹⁶We have attached the 2005 Conservation Plan as Exhibit 7. USFWS stated in the listing withdrawal that it did not depend on the Conservation Plan as a basis for withdrawing the listing proposal. We agree with this statement, as USFWS legally cannot depend on voluntary, speculative, and unfunded plans to avoid ESA listing. *See* Exhibit 8, Center for Biological Diversity Comments on Sacramento Mountains checkerspot butterfly Conservation Plan, dated October 21, 2004.

listing withdrawal and presents no evidence to indicate this closure will be effective.

- *Inadequacy of regulatory mechanisms*: in the withdrawal, USFWS argues that the butterfly's status as a USFS sensitive species is providing adequate protection and cites a National Forest Management Act regulation requiring the maintenance of viable populations of existing native and desirable non-native species (36 C.F.R. § 219.19). However, sensitive species status provides none of the binding protections of ESA listing. In addition, the Bush Administration has passed new regulations that remove the viability standard previously provided in 36 C.F.R. § 219.19.

While USFWS describes conservation measures that resulted from conferencing with USFS, these measures no longer apply, as the checkerspot is no longer proposed for listing. Future federal projects will entail no conferencing, as the butterfly currently has no status under the ESA. Nor does it have any State protection, since NM does not recognize insects as "wildlife." This unlisted status means there are inadequate regulatory mechanisms to prevent the butterfly's extinction.

- *Extreme weather*: while USFWS recognized in the listing proposal that habitat loss and fragmentation impeded the butterfly's ability to sustain extreme weather events, the listing withdrawal cryptically and without any scientific basis dismissed this threat:

"In the proposed rule we identified periodic droughts and atypical weather events as a threat to the butterfly. As noted in our response to comment 3 above, we believe that the species can survive and has persisted despite natural events such as drought since the butterfly evolved in an environment subject to periodic atypical weather events" (69 *Fed. Reg.* 76443).

Climate change: the "comment 3" referred to above concerns climate change. The listing withdrawal reads:

"(3) Comment: If global warming is really a threat to the butterfly, are you going to get the whole planet to change its habits to protect this one butterfly?"

Our response: We agree that we cannot address an issue of this magnitude and complexity on a species by species basis. However, we recognized in the proposal that the butterfly may be vulnerable to changes in climate. We also note that this does not imply that the species cannot survive natural events such as drought since the butterfly evolved in an environment subject to periodic atypical weather events.

When a species has specific and limited habitat requirements, it is reasonable to assume that climate shifts occurring more rapidly than evolutionary timeframes might have an impact on the species in the future. Even if we cannot address these issues on a species by species basis, we believe it is important,

where possible, to document the extent of any problems, to spur research or collaborative solutions. The U.S. Geological Survey (USGS) and the Service recently launched our Future Challenges Project with a scientific workshop at the National Conservation Training Center. At this workshop, we explored four environmental drivers that will affect our work and missions in the future. We examined the issues of water resources, invasive species, climate change, and biotechnology for their potential long-term impacts in managing biological resources and the systems that support them over the next 10 to 20 years. For example, we know the importance of coordinating research, monitoring, and risk assessment efforts so that human and financial resources are used effectively and directed at the highest priority needs. Closely related is the importance of accessing and sharing research and results so that the best information available is used by all decision-makers” (p. 76429).

While USFWS’s response is largely evasive to the issue of whether climate change presents a threat to the butterfly, the agency does admit that, with specific and limited habitat requirements, climate change can adversely impact a species. The listing petition points out, and the listing proposal agrees, that climate change is a significant threat to the butterfly. The listing withdrawal provided no science to disregard this threat. As we discuss above, new information indicates that climate change is likely a greater threat to the checkerspot than previously considered in the listing proposal.

As demonstrated above, there are many ongoing threats that were recognized in the listing proposal but which the withdrawal dismissed without adequate scientific basis. These threats contribute to the need to list the checkerspot under the ESA.

Peer-review supports listing

Of the six peer-reviewers for the listing proposal, only one responded. That scientist supported the listing. We do not believe that USFWS provided peer reviewers with the opportunity to review the withdrawal.

The need for emergency listing

An emergency listing can provide interim protection while USFWS finalizes a listing rule through the standard listing process.

While the listing proposal recognizes the extreme risks to small, isolated populations, particularly given the butterfly’s limited range, the listing withdrawal presents an about-face. The proposal makes clear that protection of suitable habitat, including corridors for dispersal, as well as prevention of harm to individual butterflies in their various life stage, are pivotal for maintaining the metapopulation, particularly given limited butterfly dispersal abilities. The proposal recognizes that the butterfly’s small isolated populations are vulnerable to extirpation, and some of the highest density populations at high elevations may be most susceptible. USFWS notes that butterflies in this genus can

undergo extreme variations in population size, and that populations of more than 50,000 may go extinct. There are no populations of checkerspots that even approach this size. While the Sacramento Mountains checkerspot butterfly's population is unknown, it is likely less than 5,000.¹⁷

The butterfly's detection on a football field, campgrounds, and an old railroad site is given particular weight in the withdrawal, where USFWS argues that this is evidence that "the species and its foodplants have been demonstrated to be resilient to some disturbances" (69 *Fed. Reg.* 76436) and that the threat of habitat loss and degradation is therefore reduced below the need to list the butterfly. This recklessness is further embodied in USFWS's response to comment #19: "The commentator [sic] is correct that in a functioning metapopulation, as we believe is the case here, the loss of a few butterflies will not jeopardize the continued existence of the species" (69 *Fed. Reg.* 76431).

The withdrawal stands in stark contrast to the proposal, summarily dismissing many of the threats demonstrated in the petition and listing proposal. USFWS relies on conjecture and anecdote to disregard weighty threats, such as habitat loss and fire suppression. The withdrawal ignores the proposal's warning to consider whether some extinct populations are sinks due to harmful land uses. And that the coexistence of butterflies and those land uses should not be interpreted as evidence that those land uses are benign.

Further evidence presented in this petition concerning impacts from insect control and climate change justifies emergency federal listing for the checkerspot. There are many unknowns about the butterfly. But there are also many things about which there are high levels of certainty: it is present on fewer than 2,000 acres; it is imperiled by current and future insect control; its habitat is degraded by fire suppression leading to tree encroachment into meadows and unnaturally dense forest conditions; its habitat is also harmed by proliferation of non-native vegetation and livestock grazing; it is further threatened by off-road vehicle use and other recreation impacts; it may be particularly vulnerable to climate change and extreme weather, particularly given its close relationship with another narrow endemic, the New Mexico penstemon; road-building and maintenance, and future municipal development and landscaping may harm butterfly populations; and the butterfly's populations are small and isolated and therefore extremely susceptible to extirpation.

The best available scientific data supports listing this subspecies under the Endangered Species Act. The threats from insect control and climate change require emergency listing.

Petitioners

Petitioner Forest Guardians is a non-profit conservation organization whose mission is to defend and restore the wildlands and wildlife of the greater American Southwest through fundamental reform of public policies and practices. Forest Guardians is committed to

¹⁷See metapopulation management discussion in the Karner Blue Butterfly's recovery plan, cited at footnote 8.

protecting flora, fauna, natural processes, and native habitats in the greater American Southwest. Forest Guardians is interested in the conservation of species that face high levels of imperilment, especially those who play important umbrella and keystone functions within their ranges. In addition, Forest Guardians strives for the restoration and preservation of *all* naturally occurring components and processes within native ecosystems.

Petitioner Center for Biological Diversity is a non-profit environmental organization dedicated to protecting endangered species and wild places through science, policy, education, and environmental law. The Center submits this petition on its own behalf and on behalf of its members and staff, with an interest in protecting the Sacramento Mountains checkerspot and its habitat.

Requested designation

Forest Guardians and the Center for Biological Diversity hereby petition the U.S. Fish and Wildlife Service to emergency list the Sacramento Mountains checkerspot butterfly as an Endangered species pursuant to the Endangered Species Act. This listing action is warranted, given the acute and imminent risk of extinction currently faced by this subspecies. We further request that you immediately begin the standard listing process to grant this butterfly Endangered status and provide it with critical habitat.

Sincerely,



Nicole J. Rosmarino, Ph.D.
Conservation Director
Forest Guardians
312 Montezuma Ave.
Santa Fe, NM 87501
505-988-9126x156
On behalf of:

Noah Greenwald, M.S.
Conservation Biologist
Center for Biological Diversity
PO Box 11374
Portland, OR 97211
503-484-7495

List of Exhibits

- Exhibit 1: Center for Biological Diversity listing petition, dated January 28, 1999.
Exhibit 2: Center for Biological Diversity comments on draft environmental assessment and draft economic analysis for checkerspot proposed critical habitat, dated November 15, 2004.
Exhibit 3: 2007 news articles regarding Cloudcroft spraying.
Exhibit 4: USFS 6/8/2007 press release.
Exhibit 5: Forest Guardians comments on proposed Lincoln National Forest insecticide application, dated June 24, 2007.
Exhibit 6: 2003 USFS Monitoring Data.
Exhibit 7: Sacramento Mountains Checkerspot Butterfly 2005 Conservation Plan.
Exhibit 8: Center for Biological Diversity Comments on Sacramento Mountains checkerspot butterfly Conservation Plan, dated October 21, 2004.