

BEFORE THE SECRETARY OF THE INTERIOR

PETITION TO PROTECT THE MOUNT PINOS SOOTY GROUSE
(*Dendragapus fuliginosus howardi*)

UNDER THE ENDANGERED SPECIES ACT



Photo Courtesy James D. Bland

CENTER FOR BIOLOGICAL DIVERSITY
June 26, 2024

NOTICE OF PETITION

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Pursuant to Section 4(b) of the Endangered Species Act (“ESA”), 16 U.S.C. §1533(b); Section 553(e) of the Administrative Procedure Act (“APA”), 5 U.S.C. §553(e); and 50 C.F.R. §424.14(a), the Center for Biological Diversity hereby petitions the Secretary of the Interior, through the U.S. Fish and Wildlife Service (“FWS”), to protect the Mount Pinos sooty grouse (*Dendragapus fuliginosus howardi*) as a threatened or endangered subspecies, and to concurrently designate critical habitat with such listing. If the geographic range of the Mount Pinos sooty grouse is redefined to exclude the population in the southern Sierra Nevada, Petitioner alternatively requests that FWS list the Southern Sierra Nevada Distinct Population Segment (“DPS”) of the Sierra sooty grouse (*Dendragapus fuliginosus sierrae*) as a threatened or endangered species with a concurrent designation of critical habitat.

FWS has jurisdiction over this petition. The ESA defines ‘species’ to “include[] any subspecies of fish or wildlife or plants, and any distinct population segment of

any species of vertebrate fish or wildlife which interbreeds when mature.” 16 U.S.C. § 1533(16).

This petition sets in motion a specific process, placing nondiscretionary response requirements on FWS. FWS must issue an initial finding as to whether the petition “presents substantial scientific or commercial information indicating that the petitioned action may be warranted.” 16 U.S.C. §1533(b)(3)(A). FWS must make this initial finding “(t)o the maximum extent practicable, within 90 days after receiving the petition.” *Id.*

The Center for Biological Diversity (“Center”) is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law, supported by more than 1.7 million members and online activists. The Center works to secure a future for all species, great or small, hovering on the brink of extinction. We submit this petition on behalf of our staff and members who hold an interest in protecting the Mount Pinos sooty grouse, or in the alternative, the Southern Sierra Nevada DPS of the Sierra sooty grouse.

Submitted June 26, 2024.

A handwritten signature in black ink, appearing to read 'JS' or 'JL', is positioned above the typed name of the signatory.

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EXECUTIVE SUMMARY

The Mount Pinos sooty grouse is an imperiled subspecies at the southern end of sooty grouse distribution. It is highly endemic, restricted to a five-county region (Fresno, Tulare, Inyo, Kern, and Ventura) of Central and Southern California. The Mount Pinos sooty grouse historically inhabited the southern Sierra Nevada south of Kings Canyon, as well as “sky islands” of forested montane habitat to the south of the Sierra Nevada, including the Tehachapi Mountains, Piute Mountains, and the Frazier Mountain and Mount Pinos region. Today, the subspecies is considered extirpated from the southern sky islands portion of its range and is becoming increasingly rare in the southern Sierra Nevada.

Sooty grouse are positively associated with an abundance of large fir trees and logs, with past timber harvest the most likely cause of Mount Pinos sooty grouse extirpation south of the Kern Gap. The principal threats to the continued existence of the Mount Pinos Sooty grouse include habitat degradation caused by the continued logging of large trees; wildfires exacerbated by fire suppression and climate change; post-fire salvage logging and other “hazard tree” operations; livestock grazing, particularly within high-elevation meadows; recreational impacts; and continued hunting within its already significantly reduced range.

To ensure the survival of the Mount Pinos sooty grouse, it needs dedicated monitoring and research, and protection of its habitat from logging, wildfire, hazard tree removal, livestock grazing, and motorized recreation. Hunting of sooty grouse should be suspended within its greatly receded range in Fresno, Tulare, and Inyo Counties. Mount Pinos sooty grouse would also greatly benefit from potential reintroductions into its historic Southern California range, assuming measures are also taken to restore old-growth forest and meadow habitats, and to restrict land management practices, which likely caused the extirpation of this species in the first instance.

This petition summarizes the natural history of the Mount Pinos sooty grouse, its population status, and the threats to this subspecies’ habitat, and demonstrates that, in the context of the ESA’s five statutory listing factors, FWS should list the Mount Pinos sooty grouse—or alternatively, a distinct population segment of southern Sierra Nevada sooty grouse—as threatened or endangered.

TABLE OF CONTENTS

NOTICE OF PETITION	II
EXECUTIVE SUMMARY	IV
TABLE OF CONTENTS	V
TABLE OF FIGURES	VI
INTRODUCTION	1
I. Natural History of the Mount Pinos Sooty Grouse.....	2
a. Taxonomy	2
b. Physical Description	3
c. Population Distribution and Status	4
d. Habitat Requirements	5
II. The Southern Sierra Population Qualifies as a Distinct Population Segment.....	8
a. Discreteness	9
b. Significance	11
III. Conservation Status.....	12
IV. The Mount Pinos Sooty Grouse (or alternatively, the Southern Sierra DPS) Warrants Listing Under the ESA	12
a. The present or threatened destruction, modification, or curtailment of its habitat or range.	12
b. Overutilization for commercial, recreational, scientific, or educational purposes.....	17
c. Disease or predation	19
d. Other natural or manmade factors affecting Mt. Pinos sooty grouse's continued existence	20
e. The inadequacy of existing regulatory mechanisms	21
V. Critical Habitat	23
CONCLUSION	23

TABLE OF FIGURES

Figure 1:	Estimated distribution of sooty and dusky grouse in North America (Schroeder 2004).....	2
Figure 2:	Distribution of the subspecies of Sooty grouse, <i>Dendragapus fuliginosus</i> , in California (Grinnell & Miller 1944, p. 115)	3
Figure 3:	Range of Mount Pinos sooty grouse (Bland 2008, p. 102).....	5
Figure 4:	Hooting male sooty grouse (Timmer 2016)	6
Figure 5:	Young Mount Pinos sooty grouse in nest (photo courtesy of James D. Bland).....	7
Figure 6:	Major public land management agencies (Fontaine 2009, p. 3).....	10
Figure 7:	Timber suitability in the Sequoia National Forest	13
Figure 8:	Sooty grouse hunt zone (CDFW).....	18
Figure 9:	Sooty grouse reported annual hunting take (CDFW).....	19
Figure 10:	Mount Pinos sooty grouse female (photo courtesy of James D. Bland).....	24

INTRODUCTION

Mount Pinos sooty grouse are closely associated with upper-elevation mixed-conifer and fir forests between 6,000 and 10,000 feet. (Bland 2008, p. 104). In early spring, these grouse congregate in open, mature forested stands near ridgelines, and males return to their springtime “hooting sites” over generations. In late spring and summer, females brood their young in meadows and other mesic areas. In winter, the birds rely on dense, high-elevation conifer stands, where they subsist almost entirely on fir needles. (USFS 2019b, p. 40). The sooty grouse’s high-elevation forest and meadow habitat each comprise only a small percentage of the southern Sierra Nevada and Transverse Mountains. (USFS 2019b, p. 41-42).

The Mount Pinos subspecies is considered extirpated from the sky-islands of South-Central California to the south of the Sierra Nevada—the first known regional extirpation of any sooty grouse. (Bland 2013, p. 301, Zwickel & Bendell 2004, p. 23). Surveys conducted over the past century show that the Mount Pinos sooty grouse range has receded by approximately 100 miles (USFS 2019a, p. 39; USFS 2019b, p. 44). Recent reports suggest this northward decline is continuing, with sightings in Kern County becoming increasingly rare (Bland 2002).

Although some portions of the Mount Pinos sooty grouse’s range are relatively well-protected within Sequoia and Kings Canyon National Parks, remaining habitat within lands administered by the U.S. Forest Service on the Inyo and Sequoia National Forests are not receiving meaningful protections. (USFS 2019a, p. 41; USFS 2019b, p. 44). In addition, the California Department of Fish and Wildlife continues to allow hunting of sooty grouse within its remaining range of Fresno, Tulare, and Inyo Counties (CDFW 2024).

Due to their reliance on large, mature trees, Mount Pinos sooty grouse are negatively impacted by management practices that impact those habitats, including large tree logging (Bland 2008, p. 104; Bland 2006, p. 2). Sooty grouse are also negatively impacted by livestock grazing within their meadow rearing habitat. (Bland 2008, p. 105; Steel et al. 2012, p. 647; Vernon et al. 2022, p.2). These high-elevation forest and meadow habitats—already naturally rare across the southern Sierra and Transverse Ranges—are further threatened by climate change related stressors, as well as fire suppression and altered fire regime, recreational use of habitat, and land development. (USFS 2019a, p. 40-41; USFS 2019b, p. 43-44).

I. Natural History of the Mount Pinos Sooty Grouse

a. Taxonomy

Mount Pinos sooty grouse (*Dendragapus fuliginosus howardi*) is in the Kingdom Animalia, Phylum Chordata, Class Aves, Order Galliformes, and Family Phasianidae.

Over the past century, two main groups of blue grouse have been sometimes recognized as separate species and sometimes lumped together as one species: the more inland *D. obscurus* group, or dusky grouse, and the more coastal *D. fuliginosus* group, or sooty grouse. (Hoffman 1956, p. 321). In 2004, these two groups were reclassified as two species (Schroeder 2004, p. 4; Banks et al. 2006, p. 929). This reclassification was made based on genetic evidence, as well as differences in voice (hooting), behavior, and plumage characteristics. (Barrowclough et al. 2004; Banks et al. 2006, p. 929). Morphological differences between dusky and sooty grouse include the color of the bare skin on the male apteria, the presence or absence of a distinct color band, the number of rectrices, and the color of the downy young. The two species also have different mating vocalizations and other courtship behaviors (Barrowclough et al. 2004, p. 1912).

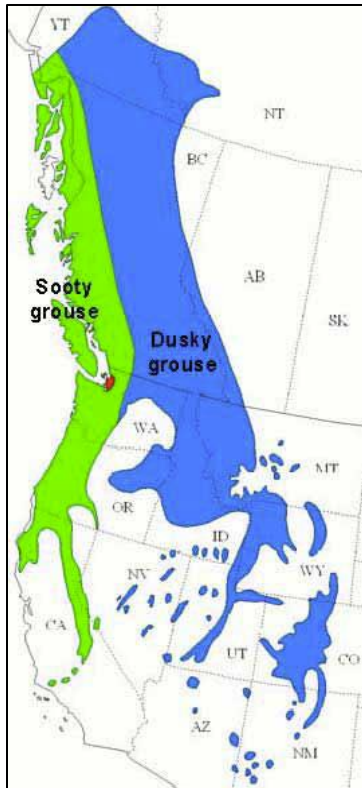


Figure 1: Estimated distribution of sooty and dusky grouse in North America (Schroeder 2004)

Sooty grouse range encompasses far western North America and is comprised of four subspecies, ranging from the western slopes of the coastal mountains of British Columbia and southeastern Alaska (including most islands), southward through the Cascade-Coast mountains of Washington, Oregon, and California, and the Sierra Nevada southward into the Transverse “sky island” ranges of Southern California, as well as disjunct populations in adjacent ranges. Three of these four subspecies are found in California. From north to south, these subspecies are: *D.f. fuliginosus* (“Oregon sooty grouse”), *D.f. sierrae*, (“Sierra sooty grouse”) and *D.f. howardi* (“Mount Pinos sooty grouse”) (Grinnell & Miller 1944, p. 113-116; AOU 1957, p. 126; Johnsgard 2016, p. 35-36; NatureServe 2024).

Primarily based on morphological differences, Dickey and van Rossum (1923, p. 168-69) recognized the Mount Pinos sooty grouse as a subspecies distinct from Sierra sooty grouse, with the subspecies range division occurring at about the 37th parallel of latitude (approximately Kings River Canyon in Kings Canyon National Park).

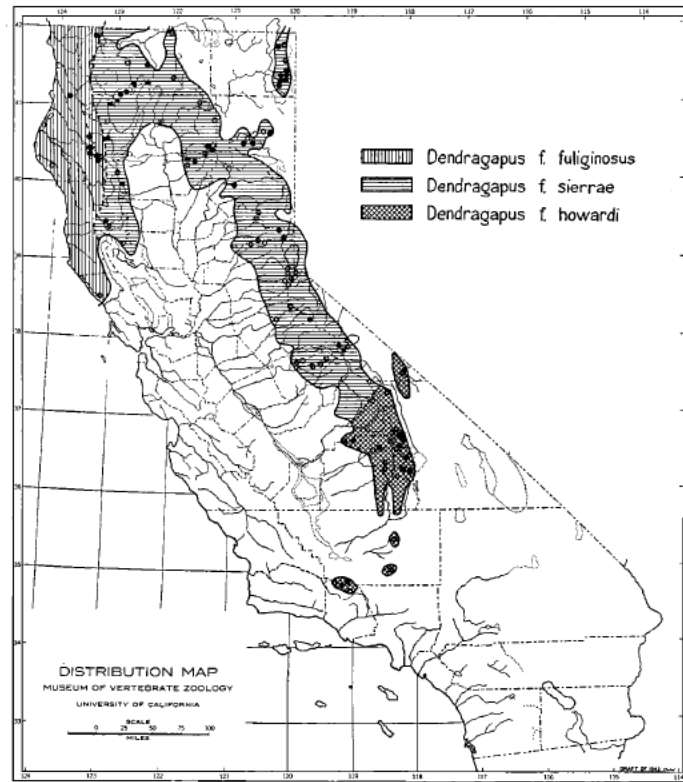


Figure 2: Distribution of the subspecies of Sooty grouse, *Dendragapus fuliginosus*, in California (Grinnell & Miller 1944, p. 115)

Unpublished mitochondrial DNA (“mtDNA”) data may suggest that the sooty grouse population in the southern Sierra represents *sierrae* rather than *howardi*, and the population on the isolated montane areas south of the Sierra Nevada, including Mount Pinos, may represent a distinct (and possibly extinct) species (NatureServe 2024). Reviewers, however, rejected this manuscript for publication for two main reasons: the number of samples from the extinct population was too small, and the mtDNA samples needed to be supported with evidence from nuclear DNA. The subspecies’ primary expert recommends that because the use of mtDNA to distinguish ‘phylogenetic’ species is not universally accepted, the currently recognized taxonomy should be used for planning purposes until studies of nuclear DNA confirm or refute findings of the unpublished mtDNA study. (J.D. Bland, personal communication, May 18, 2024). An analysis of population genetic structure that utilizes both mtDNA and microsatellite loci in tandem is thus essential to resolve the current taxonomic uncertainty. (Davis et al. 2021).

b. Physical Description

Related to the same family of birds as chickens and pheasants (Galliformes), sooty grouse are among the largest grouse species in North America. Measuring 15-21 inches in length, Mount Pinos sooty grouse are handsome birds, gray to bluish-

gray in coloration, with a distinctive red to yellowish-orange comb over their eyes. Males have a yellow cervical apteria (unfeathered skin on the sides of the neck) surrounded by white, reminiscent of a fried egg, and a black tail with a contrasting gray terminal band (Schroeder et al. 2009, p. 152).

The *howardi* Mt. Pinos subspecies of sooty grouse can be distinguished from the *sierrae* subspecies primarily by tail measurements and plumage characteristics (Dickey & van Rossum 1923, p. 168-69). Dickey and van Rossum described Mount Pinos sooty grouse as follows:

“Nearest to *Dendragapus [fuliginosus] sierrae*, but differing from that form in paler dorsal coloration, and in coarser and more conspicuous vermiculation and barring. Underparts darker, a brownish suffusion replacing the clearer gray of *sierrae*. The white median shafting and terminal pattern of the feathers of flanks and sides reduced in area and entirely lacking on anterior part of body, whereas in *sierrae* traces of this pattern extend forward to the shoulders. Wing slightly longer; tail decidedly longer and much more graduated, with terminal band averaging wider. Culmen, tarsus, and middle toe averaging slightly longer and decidedly heavier.”

c. Population Distribution and Status

Southernmost of the four sooty grouse subspecies, the Mount Pinos sooty grouse is a highly endemic subspecies that historically ranged from Kings Canyon in the southern Sierra Nevada (approximately latitude 37°) southward (Fresno, Tulare, and Inyo counties), into the “sky island” Tehachapi Mountains, Piute Mountains, and the Frazier Mountain and Mount Pinos regions of Kern and Ventura counties. (Grinnell & Miller 1944, p. 115).

Rangewide, the sooty grouse’s overall population declined by about 1.8% per year between 1968 and 2015, resulting in a cumulative loss of 57% over that period. (NatureServe 2024; Cornell Lab 2024). If these current decline rates continue, the species will have lost another half of its population by 2088, yet sooty grouse populations continue to be characterized as secure.

There are currently no reliable estimates of the overall abundance or population trend of Mount Pinos sooty grouse. Bland (2008, p. 103) characterized observed densities in 1992 at the northern extent of the subspecies’ range as the highest of sooty grouse densities anywhere in California (3 males per km² at Big Baldy Ridge, Sequoia National Park), although those densities are a fraction of observed densities in more northern subspecies. Bland (2008, p. 104) further described Mount Pinos sooty grouse as “common” in the eastern Sierra in Inyo

County, while noting that to the west in Tulare County, “its abundance drops off rapidly south of about 36° N latitude.”

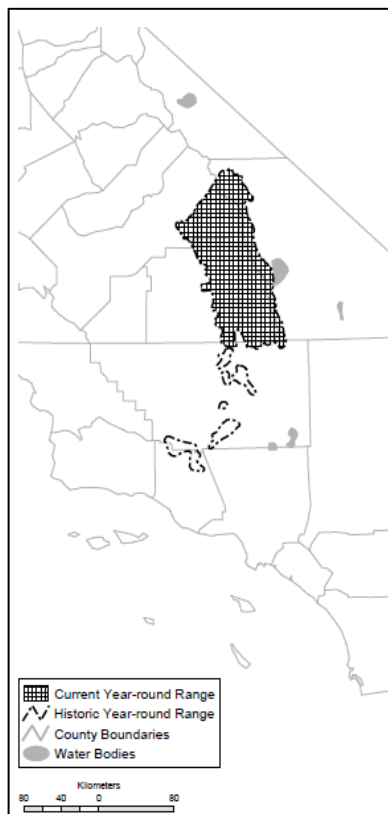


Figure 3: Range of Mt. Pinos sooty grouse (Bland 2008, p. 102)

With few exceptions, there have been no major extirpations of dusky grouse and sooty grouse from their historic range (Zwickel & Bendell 2004, p. 23). The southern end of the Mount Pinos sooty grouse’s distribution is one of those exceptions. (Bland 2013). The species was considered extremely rare in the Tehachapi, Mount Pinos, and Frazier Mountain areas in the 1950s through the 1970s, with only sporadic sightings reported (Zwickel & Bendell 2004, p.23). Several unconfirmed sightings in the early 1990s are the last evidence of the subspecies in this area. (Zwickel & Bendell 2004, p. 23; Lentz 1993, p. 213).

The most recent surveys indicate that the southern extent of sooty grouse range has receded northward by approximately 100 miles (Bland 2002, p. 1-2; USFS 2019b, p. 44). Due to its apparent extirpation south of the Sierra Nevada, the remaining range of Mount Pinos sooty grouse is largely comprised of federal lands administered by the U.S. Forest Service (Inyo and Sequoia National Forests) and National Park Service (Sequoia and Kings Canyon National Park)

d. Habitat Requirements

The Mount Pinos sooty grouse occupies different vegetation types according to season (Bland 2008, p. 104). In the spring, the bird’s habitat usually consists of open, mature pine-fir forest with clusters of large trees, on or near ridges between 6,000 and 10,000 feet. (Bland 2008, p. 104). The onset of the springtime hooting and courtship period—typically in April and early May—has been correlated with the persistence of the snow cover (Hoffman 1956, p. 323).

Male Mount Pinos sooty grouse sing primarily from trees, with a preference for “massive” old growth-trees, surrounded by a patchy tree canopy, as well as dead-and-down wood. (Bland 2002, p. 12; Zwickel & Bendell 2004, p. 178). In addition, “[a]t least a few fir or pine trees with diameters >100 cm are normally present, often in tight clusters of three to six trees.” (Bland 2008, p. 104).

Unlike other North American grouse that participate in communal courtship displays, adult male sooty grouse are strongly territorial when hooting (Hoffman

1956, p. 327; Zwickel & Bendell 2004, p. 11). Mount Pinos sooty grouse “hooting sites” or “spring activity centers” are “traditional and returned to year after year, generation after generation.” (USFS 2019b, p. 40). This behavioral difference may be correlated with different habitat preferences—unlike sage-grouse, which are found primarily in open country, sooty grouse typically perform the courtship display in denser cover, usually from a tree or log (Hoffman 1956, p. 327).

Sooty grouse flying is relatively uncommon and usually involves short flights into or out of trees or bushes for feeding or roosting, in response to intruders, or in escape. Sooty grouse are “strong flyers over short distances, skillfully maneuvering among trees in forested areas.” (Zwickel & Bendell 2004, p. 149).

Although the more northern Sierra Nevada subspecies has been observed hooting in shrubland vegetation, all records of hooting Mount Pinos Sooty Grouse are from coniferous forest (Bland 2008, p. 104). Male sooty grouse hooting has a deeply resonant sound that has been described as evoking a “boy-with-the empty-cider-jug.”

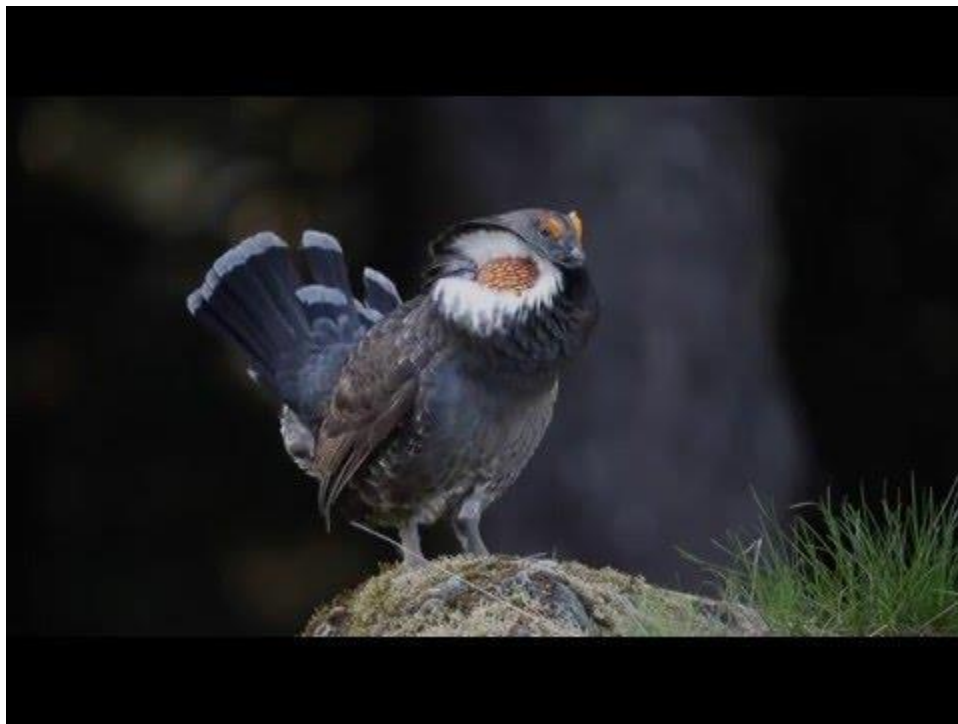


Figure 4: Hooting male sooty grouse (Timmer 2016)
(<https://www.youtube.com/watch?v=aflOCSF37gU>)

Following successful courtship, females brood their young in meadows and other mesic areas in the late spring and summer through fall. (Zwickel & Bendell 2004, p. 43). Sooty grouse nests are nearly always on the ground with some overhead cover. Nest materials may include small pieces of bark or rotten wood, pine needles, twigs, moss, and ferns. The cover may be as simple as twigs and needles or complete cover by logs, rocks, or vegetation. (Zwickel & Bendell 2004, p. 98).



Figure 5: Young Mount Pinos sooty grouse in nest (photo courtesy of James D. Bland).

Most sooty grouse populations follow an “inverted” vertical migration between summer and winter, moving from their relatively open breeding areas into montane conifer forests, usually at higher elevations (Zwickel & Bendell 2004, p. 185). The autumnal migration is believed to be more gradual than spring, with the well-grown young and adults walking to the tops of hills and ridges. (Zwickel & Bendell 2004, p. 186). However, Bland (2008, p. 105) found that the “presence of winter dropping accumulations within hooting territories at several southern Sierran sites ... suggests Mount Pinos sooty grouse do not move to special wintering locations” as do other sooty grouse.

Sooty grouse become more social in the winter, forming small flocks (Zwickel & Bendell 2004, p. 175). During this time, sooty grouse ascend conifer trees of several kinds and remain in these trees most of the time, subsisting almost exclusively on needles within dense conifer stands until the melting of snow allows them to obtain more food from the ground (Zwickel & Bendell 2004, p. 120; Hoffman 1956, p. 325).

Sooty grouse are primarily vegetarians, and their spring and summer diet consists largely of conifer needles, as well as the leaves and flowers of herbs, and the leaves, flowers, and berries of shrubs (Zwickel & Bendell 2004, p. 120). Older chicks and females may also eat large numbers of insects if available, including ants, beetles, and grasshoppers (Bland 2008, p. 104-105; Zwickel & Bendell 2004, p. 121).

Hens with broods seek mesic sites with lush vegetation and an abundance of insects for chicks (Zwickel & Bendell 2004, p. 121).

Specific Mount Pinos sooty grouse “key ecological conditions” include “the Montane, Upper Montane Zone, and Subalpine Zones, which include a mosaic of conifer forest, meadows, and montane chaparral,” while “[o]n the western slopes red fir, Jeffrey pine, and lodgepole pine are the dominant forest species.” In the far southern Sierra Nevada, white fir replaces red fir, and western white pine is also found on more productive sites. (USFS 2019b, p. 41).

Subalpine and Alpine Zone forest types makes up less than 5% of the Sierra Nevada south of Kings Canyon, and “may provide refugia” as “climate change related stressors push species” like Mount Pinos sooty grouse “to the end of their range.” (USFS 2019b, p. 44).

II. The Southern Sierra Population Qualifies as a Distinct Population Segment

As detailed in Section I.a, *supra*, the best available science supports the continued recognition of the Mount Pinos sooty grouse subspecies status and range as described in Dickey & Rossum (1923, p. 168-169) and Grinnell & Miller (1944, p. 113-116). However, if additional new science emerges supporting the mtDNA evidence suggesting that the Mount Pinos sooty grouse is extinct, and the sooty grouse south of Kings River Canyon are determined to instead be members of the Sierra sooty grouse subspecies, FWS should alternately list the southern Sierra Nevada sooty grouse as a DPS.

FWS promulgated its Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act (“DPS Policy”) in 1996. 61 Fed. Reg. 4722 (Feb. 7, 1996). The DPS Policy is intended to: 1) allow the Service to protect and conserve species and the ecosystems upon which they depend before large-scale decline occurs that would necessitate listing a species or subspecies across its entire range; 2) allow protection and recovery of declining organisms in a more timely and less costly manner, and on a smaller scale than the more costly and extensive efforts that might be needed to recover an entire species or subspecies; and 3) improve the Service’s ability to address local issues (without the need to list, recover, and consult rangewide), which will result in a more effective program.

Under its policy, FWS will designate a population as a DPS if it is: 1) “discrete” in “relation to the remainder of the species to which it belongs”; and 2) it is “significant” to the species to which it belongs. As detailed below, in the event a taxonomic change under which sooty grouse south of Kings Canyon are recognized as members of *sierrae* rather than *howardi* is recognized as the best available science, the southern Sierra population of sooty grouse meets both these criteria.

a. Discreteness

A population is considered discrete if it is “markedly separated from other populations” because of “physical, physiological, ecological, or behavioral factors;” or it is “delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D).” 61 Fed. Reg. at 4725. In considering discreteness, the Service can consider physical, physiological, ecological, behavioral, morphological, and genetic factors.

The test for discreteness under the Service’s DPS Policy is not intended to be particularly rigid. For example, it does not require absolute reproductive isolation but allows for some interchange among population segments. The standard adopted allows for some limited interchange among population segments considered to be discrete, so that loss of an interstitial population could well have consequences for gene flow and demographic suitability of a species as a whole. Indeed, if complete separation was required, the loss of the population would have little significance to other populations. While the DPS discreteness analysis is often informed by genetics, it is not limited to large genetic units such as clades.

In sum, the purpose of the distinctness criterion is merely to ensure that a DPS can be reasonably defined and described in order to ensure effective administration and enforcement of the ESA.

The southern Sierra Nevada population of sooty grouse qualifies as “discrete” because of physical, morphological, and behavioral factors that separate it from other populations.

Geographically, southern Sierra Nevada sooty grouse are “markedly separated” from other *sierrae* sooty grouse by the Kings River Canyon within Kings Canyon National Park. As described in Grinnell & Miller (1944, p. 114-115), the mapped range of *D.f. sierrae* and *D.f. howardi* are separated along the King’s River Canyon in southern Fresno County, and they described the range of the Sierra sooty grouse as extending “south along Sierra Nevada to about latitude 37° (in Fresno County).”

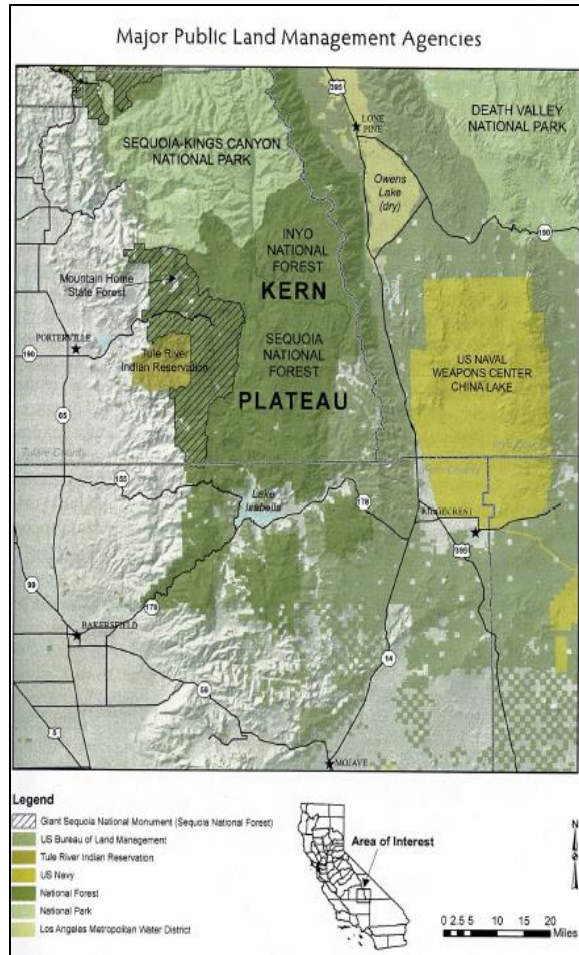


Figure 6: Major public land management agencies (Fontaine 2009, p. 3)

Although Barrowclough et al. (2004, p. 1917-1918) did not examine the genetic characteristics of *D.f. sierrae* or *D.f. howardi*, the authors found that the Columbia River valley “may have acted as a historical [though not complete] barrier to gene flow,” to sooty grouse in that region. Kings Canyon may serve as a similar barrier for sooty grouse and has notably been recognized as a barrier for other species, including the yellow-legged frog (Byrne et al. 2024, p. 600) and northern alligator lizard (Leaché et al. 2024, p. 3, 12). As explained in Leaché (2024, p. 12), “this part of the Sierra Nevada experienced multiple, dramatic glaciation events that would have displaced and segregated populations,” and “these primary breaks are further structured by major river barriers in the northern and central Sierra Nevada,” including the break at Kings Canyon. While these barriers would generally have different significance for avian species, Barrowclough (2004, p. 1918) noted that “it is perhaps not surprising that a large, relatively sedentary bird with modest population density would have substantial genetic structure across a large geographical area involving a fragmented distribution.”

Southern Sierra Nevada sooty grouse are also distinguished from more northern Sierra Nevada sooty grouse by morphological differences. These differences have served as a primary basis for the distinct subspecies designations of Mount Pinos and Sierra sooty grouse. Grinnell and Miller (1944, p. 114).

b. Significance

A population is considered significant under the Service's DPS Policy based on, but not limited to, the following factors: 1) persistence of the discrete population is in an unusual or unique ecological setting; 2) loss of the discrete population would result in a significant gap in range; 3) the population represents the only surviving natural occurrence of an otherwise widespread population that was introduced; or 4) the population differs markedly in its genetic characteristics.

The southern Sierra Nevada sooty grouse population persists in an unusual or unique ecological setting, particularly the Kern Plateau. Located at the southern end of the Sierra Nevada and including portions of the Kern Ranger District of the Sequoia National Forest and Mount Whitney Ranger District of the Inyo National Forest, the Kern Plateau is a 950-square mile area that, unlike most of the Sierra Nevada, was not glaciated. Consequently, the terrain is much gentler than most of the Eastern Sierra and sharply contrasts with northern and central Sierra Nevada topography, consisting of gently rolling hills and mountains, interspersed with lush green meadows. As described by longtime conservationist Joe Fontaine: "The southern tip of the Sierra Nevada is often overshadowed by the more spectacular, rugged, glaciated terrain in the High Sierra to the north. Because it is different, even unique, it has a combination of attributes found nowhere else on Earth." (Fontaine 2009, p. 1).

FWS has previously recognized that the loss of a grouse population in a unique biogeographic zone would be "significant" under the DPS policy. 90-Day Finding and Commencement of Status Review for a Petition to List the Western Sage Grouse in Washington, 65 Fed. Reg. 51578, 51581 (Aug. 24, 2000). Biogeographic zones can result in different habitat use patterns in grouse species, including differing diet and nutritional preferences, responses to fire or predation, and seasonal movement patterns. *Id.*

Moreover, the loss of the Southern Sierra Nevada population of sooty grouse would result in a significant gap in the subspecies' range. By losing the entire southern part of the Sierra portion of the subspecies' range, species redundancy and ecological and genetic representation would be reduced, impacting the grouse's ability to withstand demographic and environmental stochasticity. In addition, loss of the Southern Sierra Nevada population would likely preclude the natural recolonization of the isolated mountain ranges south of the Sierra Nevada. Like the Service's finding

with respect to the Western Sage Grouse in Washington, the “additional information that would be accumulated during a status review would allow for a comprehensive examination of this population’s significance to the remainder of the taxon.” *Id.* at 51582.

III. Conservation Status

The Mount Pinos sooty grouse is designated as a California Bird Species of Special Concern, a California Species of Greatest Conservation Need, and a Species of Special Concern on the Inyo and Sequoia National Forests.

IV. The Mount Pinos Sooty Grouse (or alternatively, the Southern Sierra DPS) Warrants Listing Under the ESA

Mount Pinos sooty grouse (or alternatively, the southern Sierra DPS) faces numerous recognized and unabated threats.

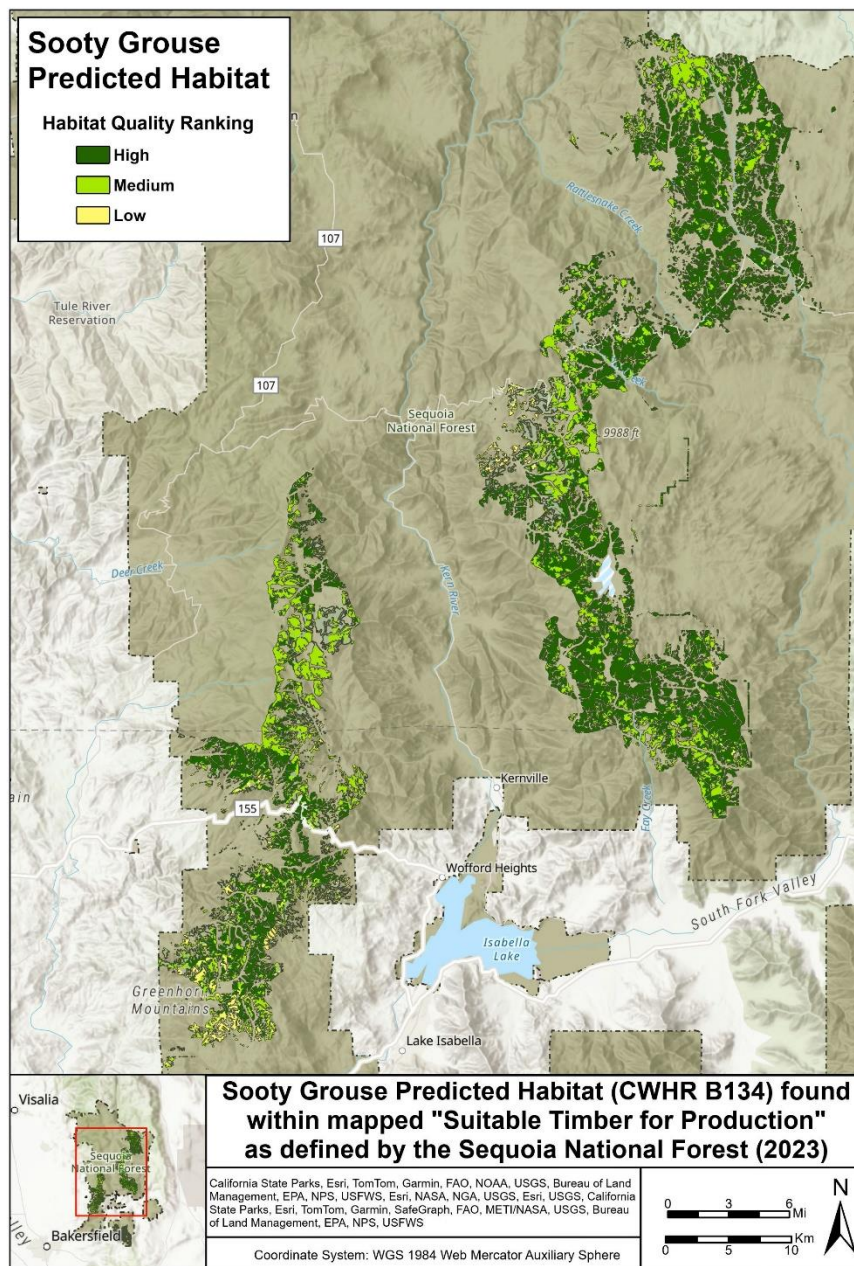
In his description for the California Bird Species of Special Concern designation, Bland (2008, p. 105) states that “[t]he principal threat to the Mount Pinos sooty grouse is probably habitat degradation caused by incompatible timber harvest, fire suppression, and livestock grazing practices.” The National Park Service also recognizes these primary threats (Steel et al. 2012, p. 647).

In identifying the Mount Pinos sooty grouse as a “species of special concern” on the Inyo and Sequoia National Forests, the U.S. Forest Service states that “[t]hreats include hunting, incompatible timber harvest, fire suppression and altered fire regime, livestock grazing, land development, recreational use of habitat, and climate change.” (USFS 2019a, p. 38; USFS 2019b, p. 39).

- a. The present or threatened destruction, modification, or curtailment of its habitat or range.

Mount Pinos sooty grouse range at the southern extent of the species’ range has receded northward by approximately 100 miles (Bland 2002, p. 1-2; USFS 2019b, p. 40). This northward decline is continuing, with sightings in Kern County becoming increasingly rare (Bland 2013, p. 294) (“South of Kern Gap, where its habitat is limited to isolated mountaintops in the extreme southern Sierra Nevada and northern Transverse Ranges—sky islands—it is considered rare or possibly extinct.”).

Loss of forested habitat. Mount Pinos sooty grouse forested habitat, including spring hooting sites and winter roosting habitat, is threatened by: logging; wildfire exacerbated by fire suppression and climate change; and post-fire salvage logging, logging in response to insect outbreaks, and other “hazard tree removal.”



Logging disrupts the “predator-cover complex” of grouse, heightening their risk of predation as they navigate through an altered mosaic of habitats. (Bland 2013, p. 303). Timber harvest is also negatively associated with habitat occupancy by breeding male sooty grouse in the southern Sierra, and the large trees they select for territorial songposts, ~1 m in diameter at breast height, have been heavily cut. As summarized by Bland (2017, p. 42-43):

Figure 7: Timber suitability in the Sequoia National Forest

“Studies I have conducted over the past 24 years (beginning in Sequoia National Park) show the Sierra Nevada subspecies ... is closely associated with old forest. Breeding males choose trees that average 1 m in diameter as songposts, and are positively associated with the abundance of large trees and logs, and negatively associated with past timber harvest ... Much Sooty Grouse habitat has been degraded on Forest Service and private land by removing the

largest trees; the most likely cause of Sooty Grouse extirpation south of the Kern Gap.”

Timber harvest is generally prohibited within Sequoia and Kings Canyon National Park, and there are very limited areas of the Inyo National Forest (near Cottonwood Creek) within Mount Pinos sooty grouse range identified as suitable for timber production under the Forest’s 2019 land management plan. (USFS 2019c, Figure 21 at p. 158, p. 160). However, the Forest Service’s recently revised land management plan for the Sequoia National Forest continues to permit extensive timber harvest within tens of thousands of acres in the heart of the Mount Pinos sooty grouse’s remaining range on the Kern Plateau. This plan (excluding Giant Sequoia National Monument, which has its own management plan) identifies 79,594 acres as suitable for timber production (USFS 2023, p. 174; Figure 25, p.175). The Giant Sequoia National Monument Plan also designates approximately 23% of the 328,315 of National Forest land within the Monument as suitable for mechanical tree removal. (USFS 2012a, at p. 80). Mount Pinos sooty grouse is not addressed in the Monument plan.

Decades of **fire suppression** in forests of the western United States has led to greater canopy cover from small and medium trees, higher biomass density, and more surface fuels (Parks & Abatzoglou 2020, p. 4), thus resulting in an elevated **wildfire risk** to Mount Pinos sooty grouse forested habitat. Historically, the mean fire return interval within the Sierra Nevada was 11–16 years with a mean fire size between 200–400 ha (494–988 ac) and with 5 to 15 percent of that area burning at high severity (Safford & Stevens 2017, p. 7). Fire suppression over the last 100 years, combined with extended droughts, has led to increased fuel loads and changes in fire behavior, with larger, more severe fires, and longer wildfire seasons in recent years, as documented in both Sierra Nevada and Southern California Transverse Mountain ranges (Safford & Stevens 2017, pp. v–vi; Nigro & Molinari 2019, p. 20). The mean size of fires in the Sierra Nevada over the past 30 years has increased to approximately 1,400 ha (3,459 ac) with 30 to 35 percent of the burn area at high severity (Safford & Stevens 2017, p. 8).

The impacts of larger and more intense wildfires resulting from fire suppression continues to drive the contraction of the southern extent of Mount Pinos sooty grouse range. For example, in 2002, Bland conducted Mount Pinos sooty grouse surveys at the southern extent of the species’ range over a 14-day period. These surveys covered an estimated 83 miles of habitat within areas of Bear Mountain, the Tehachapi Mountains, the Piute Mountains, the Greenhorn Mountains, Breckenridge Mountain, and the Mount Pinos area in April and early May. These mountains “form an archipelago of montane habitats that stretches across Kern County from the main axis of the Sierra Nevada Mountains to Ventura County in the west.”

During these surveys, Mount Pinos sooty grouse “were encountered at only one location: Sunday Peak in the Greenhorn Mountains.” At the time, Sunday Peak was “probably the largest remaining patch of old-growth mixed-conifer forest left in Kern County.” Surveys there observed eight territorial males occupying mature mixed-conifer forest between 7,200 and 7,700 feet in elevation. All “the birds were perched 60 to 80 ft high in massive (>4 ft diameter) fir and pine trees,” surrounded by a “general abundance of large dead-and-down wood on the ground.” (Bland 2002, p. 1-2).

Based on these 2002 surveys, Sunday Peak (as well as Sherman Peak in southeastern Kern County) has been described as the southernmost known breeding location for Mount Pinos sooty grouse. (Bland 2008, p. 104; USFS 2019b, p. 40). In August 2016, however, the old-growth forest of Sunday Peak, harboring the relatively dense, southernmost population of Mount Pinos sooty grouse, was burned in the Cedar Fire. There have been no reported sightings of the species on eBird in this vicinity subsequent to this fire.

The impacts of large tree mortality from wildfire are being further exacerbated by **salvage, sanitation, and hazard tree logging** of impacted areas. In addition to wildfire, Mount Pinos sooty grouse forested habitat has experienced large tree mortality events due to drought conditions and beetle outbreaks (Preisler et al. 2017, p. 166). The recently revised Inyo and Sequoia land management plans both broadly allow for logging in areas not designated as suitable for timber production for a variety of reasons:

“In addition to scheduled forest management, management may also occur in response to disturbance events (such as wildfire, windthrow, insects, parasites, or pathogen-related decline). Other harvest methods will likely apply to these specific conditions and project objectives. For example, after wildfire, and especially on suitable land, salvage harvests may be implemented to recover the economic value of dead and dying trees and to reduce the future fuel environment. Other events, such as windthrow and insect- and pathogen-related infestations, may lead to salvage or sanitation harvests, to recover economic value and improve residual stand health.

Safety considerations, although not regarded as a component of a harvest system, will likely lead to the harvest of dead and dying trees, as well as living trees deemed a risk, that may fall along roads and other places where people or property are threatened. This action, commonly referred to as hazard tree removal, or tree risk reduction, may be used extensively along roads and trails within wildfire areas.”

(USFS 2023, p. 181; USFS 2019c, p. 164)

In sum, the Sequoia National Forest, and to a lesser extent, the Inyo National Forest, continue to plan, authorize, and implement timber harvesting, including commercial harvest, and snag removal post-fire or beetle-kill events, including associated road construction, that will negatively impact Mount Pinos sooty grouse habitat.

Loss of forested habitat on private lands has also impacted Mount Pinos sooty grouse habitat. Bland and White (2009), for example, noted that on Tejon Ranch, the Tejon Ranch Company “had initiated commercial timber harvest” in the 1980s and observed numerous examples of logging, including clearcuts. The authors also observed “fir stands [that] had been paint-marked and readied for harvest.” (Bland and White 2009, p. 3). Bland (2002, p. 2) further noted that “[l]arge swaths of private land in the Tehachapi Mountains have been harvested and converted into pine plantations.”

Destruction and degradation of meadow habitat: In late spring and summer through fall, female sooty grouse and their young are reliant on meadows and other mesic habitat. This habitat is threatened by livestock grazing, recreation, and other impacts.

Livestock grazing currently occurs in Mount Pinos sooty grouse range throughout the Sequoia National Forest and in portions of the Inyo National Forest. Although current stocking levels on Sierra Nevada National Forests have decreased since the 1980s, livestock continues to have predominantly negative effects for all impacted resource values. (Vernon et al. 2022; Beschta et al. 2013, p. 479). These negative effects “suggest[] that achieving functional ecological condition in Sierra meadows that are currently used for livestock grazing may be challenging.” (Vernon et al. 2022, p.2).

Livestock grazing has specifically been recognized as degrading Mount Pinos sooty grouse food availability and cover at brood-rearing meadows (Bland 2008, p. 105). Zwickel (1972) found a higher proportion of successful grouse hens on ungrazed areas as opposed to adjacent ungrazed areas. Bland (2002, p. 2) noted that most potential brood-rearing meadows surveyed on the Sequoia National Forest “were visibly degraded,” noting that “[o]f course, there were the usual signs of livestock grazing.”

In a survey of the private lands on the Tejon Ranch which concluded that Mount Pinos sooty grouse are no longer present, Bland and White (2009, p. 4) observed extensive damage caused by livestock grazing as well as feral pigs. Noting that “ground-level shrub cover is essential in grouse nesting and brood-rearing habitats,” and that “without it, nests and young are overly exposed to predation,” the

authors concluded that “the impacts of these practices would almost certainly need to be redressed before grouse could successfully reoccupy the range.”

Recreational uses are also a threat to Mount Pinos sooty grouse meadow habitat. Bland (2002, p. 2) noted that “many of the larger meadows” surveyed on the Sequoia National Forest “had also been developed into campgrounds,” and that “[t]he hustle and bustle of a campground in midsummer may not be compatible with the demands of brood rearing.”

Bland (2002, p. 2) also observed the “impact of motorcycle and ATV use was quite apparent on Forest Service lands” in the Sequoia National Forest during their surveys of montane habitats in Tulare and Kern Counties. The Kern Plateau, for example, has frequent motorized recreation use. Noting that “[t]hese vehicles are frequently operated off-road and enable access to high elevation areas weeks in advance of the usual camping season,” Bland concluded that “[t]he quiet solitude that used to accompany [Mount Pinos sooty] grouse courtship rituals is gone.”

b. Overutilization for commercial, recreational, scientific, or educational purposes

The California Department of Fish and Wildlife (“CDFW”) defines sooty grouse as “resident small game.” Cal. Code Regs. Tit. 14, § 257 (2023). Current CDFW regulations allow hunting of sooty grouse within Fresno, Inyo, and Tulare Counties, with a daily take of 2 birds, and a maximum possession of 6 birds (CDFW 2023/2024 Regulations). The general season runs from September 9-October 9; the archery season from August 19-September 8; and the falconry season from August 19-February 28.

On the Inyo National Forest, specific hunt zones have been established and interest in hunting sooty grouse has been on the rise. (USFS 2019a, p. 41). On the Sequoia National Forest, sooty grouse is hunted within Fresno and Tulare Counties (USFS 2019b, p. 44). Differentiating between the more common Sierra subspecies and Mt. Pinos subspecies is difficult in the field and a potential risk factor. (USFS 2019b, p. 44).

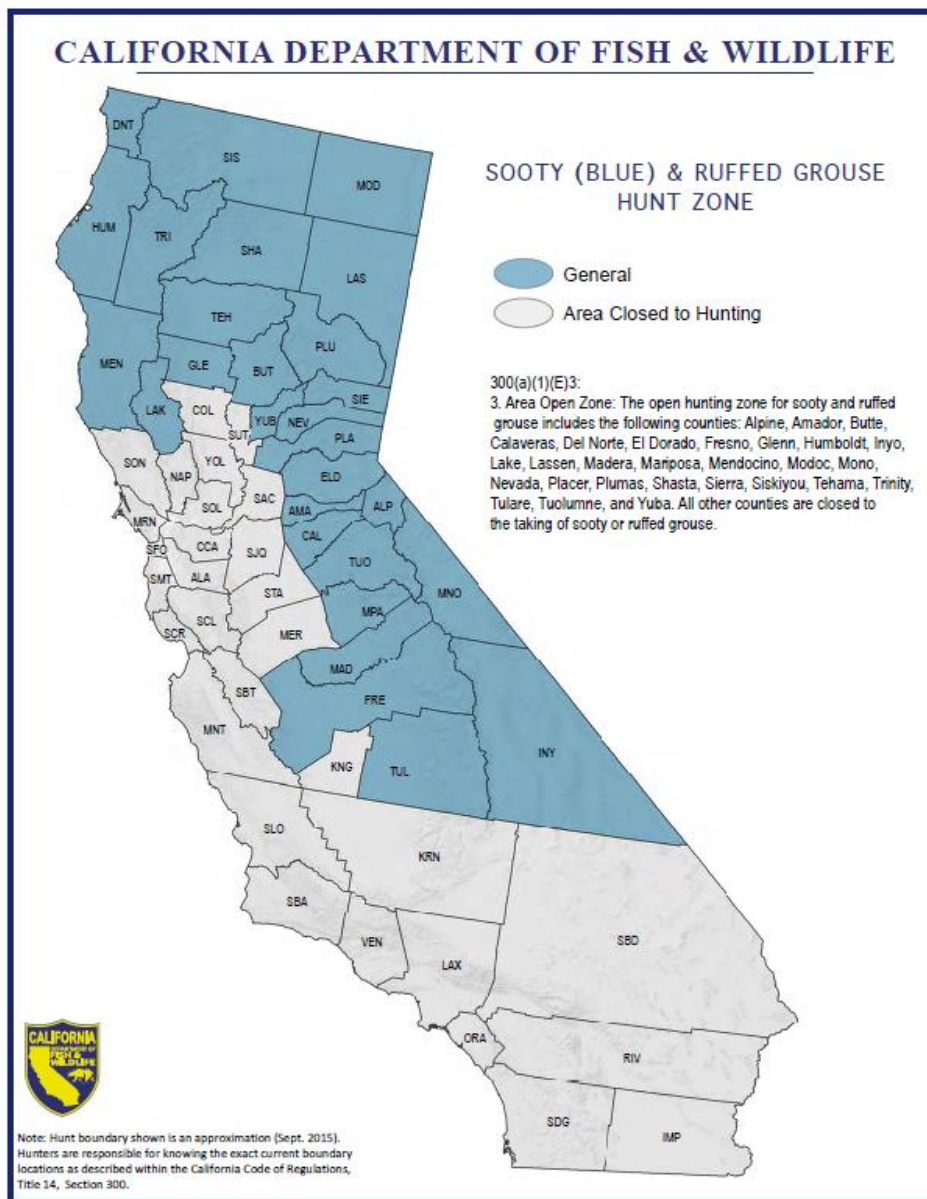


Figure 8: Sooty grouse hunt zone (CDFW)

The Forest Service states that because “the species continues to be allowed for hunting use,” this “suggest[s] populations of sooty grouse are at least stable.” (USFS 2019a, p. 44). To the contrary, CDFW hunting take numbers instead suggest a long-term, sustained, and significant decrease in the species’ population during the past 30 years, and that hunting has likely been (and continues to be) a major contributor to this decline. The data also show that CDFW continues to allow hunting of sooty grouse in counties where such hunting has not recently been successful, suggesting that the species is increasingly rare in those areas. Even though no sooty grouse have been reported as successfully taken since 2010 in Inyo or Tulare Counties, CDFW continues to allow hunting in those counties (CDFW data summarized, Figure 9).

Sooty Grouse Annual Reported Hunt Take (CDFW)					
Year	State- wide	Fresno County	Inyo County	Kern County	Tulare County
1994	11,065	41 (41)	1,409 (1,368)	2,528 (2,031)	0 (0)
2000	7,756	159 (350)	0 (64)	0 (0)	127 (604)
2005	7,483	0 (0)	353 (290)	0 (0)	0 (0)
2010	4,366	27 (27)	0 (0)	0 (0)	0 (80)
2016- 2017	2,137	0 (0)	0 (203)	0 (0)	0 (509)
2018- 2019	1,768	408 (816)	0 (136)	0 (0)	0 (0)
2020- 2021	940	104 (313)	0 (0)	0 (0)	0 (0)

Figure 9: Sooty grouse reported annual hunting take (CDFW) for selected years since 1993 (CDFW 1994, 2001, 2006, 2011, 2017, 2019, 2021).

CDFW now only reports on biannual basis. 2020-2021 is the most recent report available. Data previously reported as blue grouse ascribed to sooty grouse. Hunting Days in parenthesis.

c. Disease or predation

There have been few reports of viral and bacterial diseases in sooty and dusky grouse (Zwickel & Bendell 2004, p. 239). Disease is not a known current threat to the Mount Pinos sooty grouse.

Any carnivorous mammal or raptorial bird within the range of sooty grouse can be considered a potential predator to them during some stage of their life cycle. Data is limited, but raptors appear to be the principal predators in autumn and winter, while eggs of grouse are most often taken by mammals (Zwickel & Bendell 2004, p. 234). Intensive timber harvesting and other large-scale alterations of habitat structure, such as wildlife, can disrupt the “predator-cover complex” of grouse, increasing the risk of predation (Bendell 2013, p. 303). Such logging could have been a factor in the extirpation of sooty grouse south of the Sierra Nevada (Bland 2013, p. 303) (“Perhaps a century or more of logging in the sky islands eliminated elements of habitat structure that were essential for grouse or fragmented the habitat to the extent that the grouse were exposed to unsustainable rates of predation.”).

d. Other natural or manmade factors affecting Mt. Pinos sooty grouse's continued existence

Climate change is negatively impacting the forested and meadow habitat of Mount Pinos sooty grouse. Mean annual temperatures in the Sierra Nevada region have generally increased by around 0.5–1.4 °C (1.0–2.5 °F) over the past 75–100 years (North 2012, p. 25). Under projected continued warming trends, the transition from snow to rain during a storm is expected to rise by 457–914 m (1,500–3,000 ft) (Dettinger et al. 2018, p. 21). Sierra Nevada snowpacks will be unlikely to form below about 1,829 m (6,000 ft) elevation, and snowpacks will be reduced by more than 60 percent across most of the Sierra Nevada by the end of the century (Dettinger et al. 2018, p. 21). Losses of snowpack may be even greater due to feedback loops with warming trends causing snow cover losses, and snow cover losses resulting in warmer land surfaces, thus enhancing warming trends in turn (Dettinger et al. 2018, pp. 5, 32). The higher snow-dominated elevations from 2,000–2,800 m (6,560–9,190 ft) will be the most sensitive to temperature increases (PRBO 2011, p. 23).

With increasing temperatures and less snowfall, the high-elevation old-growth conifer forests relied upon by Mount Pinos sooty grouse are highly vulnerable to climate change (Dettinger et al. 2018, p. 6). Subalpine conifer forests, for example, are at risk of substantial future loss (average 85 percent) by the end of the century. (USFS 2019a, p. 41). The Forest Service has specifically identified alpine environments of the Kern Plateau as “among the most threatened” areas from climate change impacts (USFS 2019b, p. 41). Species that require older, denser, and more structurally complex forest conditions, like Mount Pinos sooty grouse, will be negatively impacted by changes in fire regimes and vegetation driven by climate change (Dettinger et al. 2018, p. 34).

Mount Pinos sooty grouse meadow habitat is also threatened by climate change. On the Sequoia National Forest, there are an estimated 556 meadows encompassing about 10,000 acres, or approximately 10% of the total forest area. (USFS 2019b, p. 42). On the Inyo National Forest, wet meadows similarly occupy an estimated 10% of the Kern Plateau portion of the Forest. A significant portion of these meadows have already been moderately to heavily impacted by shrub encroachment. (USFS 2017, p. 27).

Climate change, “especially the predicted changes in the magnitude and timing of the Sierra snowpack, will have profound effects on meadow hydrology.” (Dettinger et al. 2019, p. 34). The Forest Service predicts that climate change, including a change from a snow-dominated to rain-dominated system in the southern Sierra Nevada, may cause a decline in meadow habitat and a “shift to dry meadows, especially small irregularly shaped meadows at low elevation.” (USFS 2019b, p. 43).

e. The inadequacy of existing regulatory mechanisms

Remaining Mount Pinos sooty grouse primarily occur on federal lands including Sequoia and Kings Canyon National Parks, and Inyo and Sequoia National Forests (including Giant Sequoia National Monument), as well as potentially some tribal (Tule River Reservation) and state (Mountain Home State Forest) lands.

National Forests: The National Environmental Policy Act (“NEPA”) requires federal agencies, including the Forest Service, to consider the effects of their actions on the environment. 42 U.S.C. § 4321 *et seq.* However, courts have interpreted NEPA as only providing procedural requirements, and thus this interpretation does not substantively protect individuals or populations of Mount Pinos sooty grouse or prohibit the Forest Service from authorizing actions that negatively impact the species. *See Kern County v. United States BLM*, 284 F.3d 1062, 1066 (9th Cir. 2002).

In addition, Congress has exempted or relaxed NEPA requirements in relation to logging and grazing authorizations on National Forest lands. *See, e.g.*, 16 U.S.C. 6501 *et seq.* (“Healthy Forests Restoration Act of 2003”); Consolidated Appropriations Act of 2018: Wildfire Suppression Funding and Forest Management Activities Act, H.R. 1625, 115th Cong. § 203212 (2018). Administratively, the Forest Service has broadly interpreted the scope of existing categorical exclusions, while also promulgating new categorical exclusions. 36 C.F.R. 220.6. The Forest Service has utilized these truncated procedures for projects within Mount Pinos sooty grouse habitat on the Sequoia National Forest, including salvage logging after the Cedar fire responsible for burning the subspecies’ previous southernmost population at Sunday Peak. *See Earth Island Inst. v. Elliott*, 318 F. Supp. 3d 1155 (E.D. Cal. 2018) (upholding use of categorical exclusion by Sequoia National Forest authorizing post-fire logging of trees within Greenhorn Mountains).

Portions of the Hume Lake and Western Divide Ranger Districts of the Sequoia National Forest are designated as Giant Sequoia National Monument. The National Monument Plan, however, does not mention Mount Pinos sooty grouse or contain any management direction or restrictions in relation to the species. Additionally, the Forest Service has stated that the designation does not place any restrictions on its grazing authorizations, or otherwise impact grazing management. (USFS 2012b, p. 2). The Forest Service acknowledges that under the current management practices, “[l]ivestock grazing areas may have localized concentration impacts in areas such as bedding areas, trails, water troughs, riparian and wet areas, from hoof action, soil compaction, and removal, and trampling of vegetation.” These local impacts include “[e]ffects on range resources [that] could affect aquatic, meadow, and riparian ecosystems, and the species that depend on them for habitat,” including the “diverse array of rare species” on the Monument. (USFS 2012b, pp. 16, 18-19). The Forest Service’s grazing specialist report for the Monument likewise makes no mention of Mount Pinos sooty grouse.

Under the National Forest Management Act, the Forest Service is required to “maintain viable populations of existing native and desired nonnative vertebrate species in the planning area.” 36 C.F.R. § 219.19. Under Forest Service regulations, this requirement does not prohibit the Forest Service from carrying out actions that harm species or their habitat, stating only that “where appropriate, measures to mitigate adverse effects shall be prescribed.” 36 C.F.R. § 219.19(a)(1).

In 2007, the sooty grouse (then considered blue grouse) was designated by the Forest Service as a Management Indicator Species (“MIS”) for late-seral, open-canopy forest in all ten National Forests in the Sierra Nevada Mountains. The MIS regulation required the Forest Service to annually monitor and report on the status of sooty grouse populations. The Forest Service does not appear to have met this requirement.

In 2012, the Forest Service issued a new planning rule eliminating MIS. The 2012 rule instead requires the agency to maintain viable populations of Species of Conservation Concern within the plan area. While Mount Pinos sooty grouse has been designated as a Species of Conservation Concern on the Inyo and Sequoia National Forests, the current land management plans for the National Forests do not include specific measures for the species.

The extirpation of Mount Pinos sooty grouse from the Los Padres National Forest illustrates the lack of adequate protective regulatory mechanisms on Forest Service lands. The 1988 Los Padres National Forest Land and Resource Management Plan identified the Mount Pinos sooty grouse as a “Forest Species of Special Emphasis.” In making the designation, the Forest Service stated that it “is a unique species especially for the geographic area,” and “one which is likely to receive added impact with projected increases in recreational uses and timber management,” while pledging that “specific guidelines for management” would be developed for the species. There is no evidence the Forest Service ever took any of these actions. The Los Padres National Forest now does not even mention the Mount Pinos sooty grouse in its wildlife analysis for timber projects on the Mount Pinos Ranger District (USFS 2023).

National Parks: NPS issued the Final General Management Plan for Sequoia and Kings Canyon National Parks in 2007. The Plan did not consider impacts to Mount Pinos sooty grouse or contain any specific measures to protect it. The Parks receive millions of annual visitors. There is a strong potential for impacts to Mount Pinos sooty grouse from National Park recreational use and there are no protective measures in place.

State Wildlife Management: California Department of Fish and Wildlife continues to allow hunting of Mount Pinos sooty grouse in Inyo, Fresno and Tulare Counties, despite the species' extensive loss of historic range and increasing rarity.

Private Lands: No meaningful protections are provided to Mount Pinos sooty grouse habitat on private lands, as evidenced by the prior discussion with respect to Tejon Ranch.

V. Critical Habitat

The ESA mandates that, with limited exceptions, the Service shall concurrently designate critical habitat when listing a species as threatened or endangered. 16 U.S.C. § 1533(a)(3)(A)(i). The ESA defines the term “critical habitat” to mean occupied habitat upon which are “found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection,” as well as unoccupied habitat upon a determination by the Service that such areas “are essential for the conservation of the species.” *Id.* § 1532(5)(A).

The Center requests that the Service designate critical habitat concurrently with the listing of the Mount Pinos sooty grouse, including all occupied habitat in the southern Sierra Nevada Mountains, as well as historically occupied habitat south of the Sierra Nevada in the Piute, Tehachapi, Frazier Mountain, and Mount Pinos area ranges. The designation of such habitat is both prudent and determinable.

CONCLUSION

For reasons detailed in this Listing Petition, the Center for Biological Diversity requests that the Service list the Mount Pinos sooty grouse, or alternatively, the southern Sierra distinct population of Sierra sooty grouse, as a threatened or endangered species under the ESA, with a concurrent designation of critical habitat.



Figure 10: Mount Pinos sooty grouse female (photo courtesy of James D. Bland)

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