



October 28, 2026

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Via e-mail and certified mail

**RE: 60-Day Notice of Intent to Sue Regarding Violations of the Endangered Species Act
When Denying Protections to the Northern California–Southern Oregon DPS of Fisher**

Dear Secretary Burgum and Director Nesvik:

This letter serves as a sixty-day notice of intent to sue the U.S. Fish and Wildlife Service (“Service”) over violations of section 4 of the Endangered Species Act (“Act” or “ESA”), 16 U.S.C. § 1531 et seq. This notice is submitted on behalf of the Center for Biological Diversity, Defenders of Wildlife, Klamath-Siskiyou Wildlands Center, Environmental Protection Information Center, and Cascadia Wildlands (“Conservation Groups”). See 16 U.S.C. § 1540(g).

As described in detail below, the Service has unlawfully failed to list the Northern California–Southern Oregon Distinct Population Segment (“NCSO DPS”) of fisher as an endangered or threatened species, see *id.* §§ 1533(a)(1), 1533(a)(3)(A), 1533(b)(6)(C), depriving this critically imperiled population of important protections. See 90 Fed. Reg. 41355 (Aug. 25, 2025).

I. Factual Background: The NCSO DPS of Fisher

A relative of otters, mink, and wolverines, the fisher (*Pekania pennanti*) is a highly imperiled, mid-sized forest carnivore that is associated with closed-canopy, late-successional forests throughout its West Coast range in California, Oregon, and Washington. A combination of logging, historic trapping, and other factors led to a severe contraction of the fisher’s range by the mid-20th century, while new threats including rodenticide poisoning and climate change-fueled, high-severity fire have emerged in recent decades.

Fishers were extirpated from all of Washington, most of Oregon, and half their range in California. The fisher’s remaining native populations are limited to northern California/southern Oregon (the Klamath-Siskiyou ecoregion) and the southern Sierra Nevada, while additional populations have been reintroduced by translocation in Washington State, the southern Oregon Cascades, and the northern Sierra Nevada. The Service recognizes three extant subpopulations outside of the southern Sierra Nevada, which it calls the “NCSO DPS”:

- 1) the “native NCSO” population, found in the Klamath Mountains in Josephine, Jackson, and Curry Counties in Oregon, extending south into California through the Klamath Mountains and Coast Ranges of Del Norte, Siskiyou, Humboldt, Trinity, western Tehama, northeastern Mendocino, western Glenn, northern Lake, and western Colusa Counties and the Cascades Range of southern Siskiyou and Shasta Counties;
- 2) the Southern Oregon Cascades (“SOC”) population, found in portions of Douglas, Jackson, and Klamath Counties and which originated from a reintroduced population;
- 3) and the Northern Sierra Nevada (“NSN”) population, found near Butte, Plumas, and Tehama Counties and which also originated from a reintroduced population.¹

Fishers have continued to decline, and remaining populations are sensitive to rapidly changing environmental conditions and face numerous unabated threats, including habitat loss and fragmentation from logging, development, and increasingly severe wildfires; climate change; rodenticide poisoning; and the negative effects associated with existing in small, isolated populations. The Service estimates that there are only between about 2,800 and 4,000 fishers remaining across the DPS. See FISH & WILDLIFE SERV., SPECIES STATUS ASSESSMENT REPORT FOR THE FISHER (*PEKANIA PENNANTI*) NORTHERN CALIFORNIA-SOUTHERN OREGON DISTINCT POPULATION SEGMENT 76 (June 24, 2025) [“SSA”].

¹ The Fish and Wildlife Service designated two distinct population segments, the Northern California–Southern Oregon (“NCSO”) DPS and the Southern Sierra Nevada (“SSN”) DPS in 2020. See *generally* 85 Fed. Reg. 29532 (May 15, 2020).

II. Legal Background: The Endangered Species Act

The Supreme Court has described the ESA as “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *TVA v. Hill*, 437 U.S. 153, 180 (1978). Its “broad purpose” is to conserve imperiled species and the ecosystems on which they depend. *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 698 (1995); see also 16 U.S.C. § 1531(b).

The ESA provides for listing of “species,” which includes species, subspecies, and distinct population segments (“DPS”), see 16 U.S.C. § 1532(16), as “endangered” or “threatened,” see *id.* § 1533(a)(1). A species must be listed as “endangered” if it is “in danger of extinction throughout all or a significant portion of its range.” *Id.* § 1532(6). A species is “threatened” if it is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” *Id.* § 1532(20). Listing is required if the species is endangered or threatened because of any one of, or a combination of, the following factors:

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.

Id. § 1533(a)(1); see also 50 C.F.R. § 424.11(c). In making listing decisions, the Service must rely “solely on . . . the best scientific and commercial data available.” *Id.* § 1533(b)(1)(A).

The lawfulness of the Service’s listing decisions is governed by the Administrative Procedure Act’s (“APA”) standard of review. See 5 U.S.C. §§ 701–06. The APA directs that courts “shall” set aside agency actions, findings, or conclusions that are determined to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Id.* § 706(2)(A). In reviewing whether an agency decision is arbitrary and capricious, courts must “ensure that the agency considered the relevant factors and articulated a rational connection between the facts found and choices made.” *Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1023 (9th Cir. 2011). An “agency rule would be arbitrary and capricious if the agency relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

III. Procedural Background

A. Listing History for the NCSO DPS of Fisher

In 2000, conservation organizations petitioned the Service to list the fisher throughout its West Coast range. Following litigation to compel the Service’s overdue response to that petition, the

Service determined in 2004 that the West Coast DPS of fisher warranted listing but that such protection was precluded by higher priorities. See *generally* 69 Fed. Reg. 18770 (Apr. 8, 2004). The Service reaffirmed that listing the West Coast fisher remained warranted in annual candidate notices of review through 2013, but that listing continued to be precluded. See 90 Fed. Reg. at 41356.

In 2014, after another lawsuit to compel action, the Service proposed listing the fisher in its West Coast range and defined the boundaries of the DPS to encompass all known historical and current fisher populations in Washington, Oregon, and California. See *generally* 79 Fed. Reg. 60419 (Oct. 7, 2014).

In 2016, the Service withdrew the proposed listing rule, see *generally* 81 Fed. Reg. 22710 (Apr. 18, 2016), an action that the Center for Biological Diversity, Environmental Protection Information Center, and Klamath-Siskiyou Wildlands Center successfully challenged. See *generally* *Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 342 F. Supp. 3d 968 (N.D. Cal. 2018). In vacating and remanding the withdrawal decision, the court found that the Service's conclusion that the fisher population was stable was not supported by the best available science, and that the Service arbitrarily relied on an assumption of population stability to wrongly dismiss the threat of toxicant exposure from anticoagulant rodenticides. See *id.* at 979.

On May 15, 2020, the Service issued a new final listing rule in which it redefined the Northern California–Southern Oregon (“NCSO”) and southern Sierra Nevada populations as separate DPSs and excluded Washington's fisher populations from its DPS designations. The Service then listed the southern Sierra Nevada DPS as endangered, while denying protections to the NCSO population. See 85 Fed. Reg. at 29532, 29536.

Following further litigation by the Center for Biological Diversity, Environmental Protection Information Center, and Klamath-Siskiyou Wildlands Center, the Service withdrew its not-warranted finding for the NCSO DPS and agreed to issue a new listing decision by August 25, 2025.

B. The August 2025 12-Month Not-Warranted Finding

On August 25, 2025, the Service released a finding that listing the NCSO DPS as either an endangered or threatened species was not warranted (“Not-Warranted Finding”). See 90 Fed. Reg. at 41355, 41357–58. The Service's decision was largely based on the agency-authored “Species Status Assessment” (“SSA”), see *id.* at 41356, with the decision rationale documented in a “Species Assessment and Listing Priority Assignment Form” (“SAF”).

The Service's Not Warranted Finding acknowledges the significant threats facing the fisher, such as increasingly severe and frequent wildfires, ongoing habitat changes from climate conditions, the effects of vegetation management, toxicants, droughts, forest insects, tree disease, development, and predation. See *id.* at 41357. Despite these threats, the Service concludes that the fisher does not warrant listing as an endangered species or threatened species. See *id.* at 41357–58.

IV. Legal Violations

The Service's Not-Warranted Finding violates the ESA and is arbitrary and capricious, an abuse of discretion, and contrary to law. See 16 U.S.C. § 1533(a); 5 U.S.C. § 706(2)(A). Specifically, the Service's Not-Warranted Finding fails to adequately consider the individual and cumulative impacts of numerous threats, including habitat loss from wildfire, climate change, logging, and other vegetation management; anticoagulant rodenticides; insufficient connectivity between areas of suitable habitat; and impacts associated with small, isolated, and declining populations. At the same time, the Service greatly overstates the fisher's capacity to survive and adapt in the face of these threats, erroneously concludes that populations are stable, and fails to consider the extensive loss of the fisher's historic range. The Not-Warranted Finding also never comprehensively examines the fisher's status throughout all of the DPS's range as the ESA requires, and instead only examines two separate portions of the DPS individually. Finally, the Service's finding with respect to the SOC analysis unit fails to offer a reasoned explanation for why the area is not a "significant" portion of the DPS range.

A. The Not-Warranted Finding Does Not Adequately Assess Habitat Loss in the NCSO DPS.

Once found throughout the boreal forests of Washington, Oregon, and California, the fisher's current range is a small fraction of what it once was. See SSA at 20-21 & Fig. 8. Today, the fisher faces a severe—and growing—threat of habitat loss from climate change-driven wildfire and logging, among other factors. This is an urgent issue for the species, which has been described as “among the most habitat-specialized mammals in North America.”²

The Not-Warranted Finding asserts that “the amount and configuration of suitable habitat [that meets the fisher's resource needs] is expected to remain relatively stable[,]” and that the fisher will retain enough suitable habitat in the foreseeable future. 90 Fed. Reg. at 41357; see also FISH & WILDLIFE SERV., SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM 43–44 (July 15, 2025) (availability of suitable habitat in the NCSO/NSN analysis unit is expected to mitigate threats to the fisher; suitable habitat within SOC analysis unit shows a low rate of loss per decade) [“SAF”]. But the Service's overly optimistic assessment of habitat availability ignores available data and contradicts the Service's own findings. Indeed, the Service itself found that suitable habitat is likely to decrease by nearly 30 percent in the analysis area. See SSA at viii, 153. Accordingly, the Not-Warranted Finding is arbitrary, capricious, and contrary to the best available science in violation of the ESA.

1. Wildfire

As the Service acknowledges, from 1984 to 2023, at least 2,462,551 acres of high- and intermediate-quality habitat burned at high severity across the DPS, with the greatest loss of habitat to high-severity wildfire occurring in the last decade, see SSA at 104, “far exceeding” prior ones, *id.* at 113. The Service's SSA cites a 2,540 percent increase in area burned annually in the SOC analysis

² KATIE MORIARTY ET AL., U.S. DEP'T OF AGRIC., DEN, REST SITE, AND MOVEMENT CHARACTERISTICS OF PACIFIC FISHER (PEKANIA PENNANTI) IN THE SOUTHERN OREGON CASCADE RANGE 13 (2019).

area, a 619 percent increase in the native NCSO analysis unit, and a 414 percent increase in the NSN analysis area. See *id.* at 101. Within the Klamath-Siskiyou Ecoregion, where the largest population of fishers is found within the DPS, nearly a quarter of habitat burned between 2015 and 2020—just a five-year span.³ Further, the SSA acknowledges that “[t]he recent increase in fire activity and trend toward a greater proportion of high-severity fire, particularly in the last decade, threatens not only habitat availability but also connectivity between occupied areas.” *Id.* at 113.

The threat of wildfire is only expected to worsen in the foreseeable future, with fire probability expected to increase by more than 25 percent across the DPS by midcentury under the most optimistic climate change scenario. See SSA at 144. “The increase in frequency, size, and in some cases severity of wildfire, is expected to lead to more frequent displacement of fishers, and more severe impacts to habitat suitability and connectivity, which in turn would reduce fishers’ ability to withstand stochastic and catastrophic events, and to adapt to future environmental change.” *Id.* at 147. “The changing climate and increase in the likelihood of catastrophic wildfire events is expected to result in loss of habitat and connectivity across the DPS, which in turn would reduce fisher occupancy, connectivity, genetic diversity, and overall population size within the analytical units.” *Id.* at 150. Overall, the SSA predicts that “[s]uitable habitat is expected to decrease by nearly 30 percent in the analysis area.” *Id.* at 153.

Given the threat of climate change-driven wildfire—resulting primarily in habitat loss and decreased connectivity between remaining populations but also resulting in direct mortality—the SSA ultimately concludes that “fishers in the NCSO DPS may have moderate risk of extinction and moderately low viability over the next 70 years.” *Id.* at 153. And that is with acknowledging that the SSA’s “estimate of fire’s impacts on habitat is likely conservative” in that it does not include areas that burned at moderate-severity—which fishers avoid, see *id.* at 36—nor does it include fires of less than 1,000 acres. See *id.* at 113.

Yet the Service concludes in its Not-Warranted Finding that wildfires do not pose an existential threat to the fisher, either now or in the foreseeable future, because the fisher will allegedly retain multiple “core areas”⁴ that are unlikely to be impacted by high severity wildfire; connectivity between core areas will remain; the amount of suitable habitat is expected to remain stable and adequate for the fisher’s resource needs; fishers allegedly have demonstrated use of low- or moderate-severity burned areas; and fuel reduction activities will decrease the overall severity of wildfires within the NCSO and NSN analysis units. See 90 Fed. Reg. 41357–58; SAF at 42–50. In doing so, the Not-Warranted Finding rejects the best available science and the SSA’s own conclusion that wildfire poses an extinction risk to the DPS.⁵

³ See David S. Green et al., *Mixed-severity wildfire and salvage logging affect the populations of a forest-dependent carnivore and a competitor*, 13 ECOSPHERE e03877, 2 (2022).

⁴ The Service defines “core areas” as “sufficiently large, contiguous areas [that] are currently occupied, such that they may support minimal viable populations.” SSA at 82.

⁵ The SAF did not make a finding on whether the fisher was in danger of extinction within the foreseeable future within the SOC region, instead finding that the SOC region was not “significant” and therefore did not represent a significant portion of the fisher’s range. See SAF at 50.

First, even if review is limited to how wildfire will impact core areas specifically—instead of looking at fisher habitat generally⁶—the best available science shows that core areas, like fisher habitat more broadly, have been and will continue to be significantly impacted by wildfire, as will the connectivity between them. For instance, “between 9 and 69 percent of core areas 2, 8, 10, 13, and 14 have burned at high severity from 2010.” SSA at 109. These core areas make up a third of all core areas and roughly a third of all core area acreage. See *id.* at 112. The entirety of core area 10 was burned in the 2018 Carr Fire, 69% of it at high severity. See *id.* at 113. And fisher density has greatly decreased following these fires regardless of fire intensity.⁷ This led Green et al. (2022) to conclude that wildfire “may have lasting negative effects on [fisher] persistence.”⁸

The outlook in the foreseeable future is likewise bleak, with expected “increases in the number of fires, the incidence of large and very large fires, total area burned, and area burned at high severity.” *Id.* at 143. The Service itself states that “if the current rate of habitat loss from wildfire continues or increases into the future, it is extremely likely that connectivity will be diminished especially in the fire prone areas.” *Id.* at 148–49.⁹ Regarding the Klamath Mountain region specifically, which “contains the greatest amount of habitat and detection areas,” and “holds all or part of eight core areas, and is (literally) central to connectivity between most core areas, and all core clusters,” the SSA finds that “future fire activity in this region will be a significant determinant of demographic stability of the subpopulation . . . , the DPS’s ability to withstand future catastrophe . . . , and its ability to adapt or colonize new habitat in response to environmental change . . .” *Id.* at 113.

The Service provides zero support for its about-face conclusion in the Not-Warranted Finding that “even as connectivity diminishes in fire prone areas” there will be “enough connectivity and gene flow between the large core areas to allow maintenance of demographic viability and genetic diversity.” Moreover, the Service’s assertion that “the amount and configuration of suitable habitat is expected to remain relatively stable,” 90 Fed. Reg. at 41357, is directly counter to its own prediction that “[s]uitable habitat is expected to decrease by nearly 30 percent in the analysis area.” SSA at 153 (emphasis added). Accordingly, the Not-Warranted Finding is arbitrary, capricious, and contrary to the best available science.

⁶ The core areas do not represent all suitable fisher habitat in the DPS. See SSA at 82 (“These core areas do not represent all fisher habitat on the landscape in the NCSO DPS . . .”). Thus, even if many of the core areas persist as the Service (unreasonably) predicts, the SSA still estimates that roughly 29 percent of the NCSO, 20 percent of the SOC, and 55 percent of the NSN analysis units’ suitable habitat is at risk of high-severity fire. See *id.* at 141.

⁷ See Green et al. 2022, *supra*, at 13–14; see also Christopher James Collier, Fire Severity Mediates Marten and Fisher Occurrence: Impacts of the Dixie Fire on a Carnivore Community 53, 75 (May 2024) (M.A. thesis, California State Polytechnic University) (finding that “fishers avoid burned areas” and “strong evidence of decreasing occupancy as burn severity increased”).

⁸ Green et al. 2022, *supra*, at 15.

⁹ See also CONSERVATION BIOLOGY INST., MODELING THE POTENTIAL FOR LARGE HIGH-SEVERITY FIRES IN THE KLAMATH BASIN REGION OF CALIFORNIA AND OREGON AND THEIR POTENTIAL IMPACTS ON MARTEN AND FISHER 25 (2019) (finding that 24% of fisher connectivity habitat in the Klamath was at high fire risk).

The Service also overestimates the fisher's use of habitat impacted by low- and medium-severity wildfire. See 90 Fed. Reg. at 41357 (the species' response to threats is not "manifesting at a level" that warrants listing since fishers "demonstrate a moderate ability to adapt to changing conditions such as . . . ability to persist in fire-prone landscapes . . ."). In contrast to the Not-Warranted Finding's assertion, the best available science shows that low-, medium, and high-severity fire ha[ve] a "100% probability of negatively affecting fisher density."¹⁰ The Service's failure to recognize the impact low- and medium-severity wildfire have on fishers ignores that "[d]ensity of fisher activity centers decreased in areas burned regardless of severity[.]"¹¹ and that "rapid changes to forest structure could threaten [the fisher's] long-term persistence."¹² Research has also highlighted post-fire population declines, even up to six years after the burn.¹³

Additionally, other research shows that repeated burning in a relatively short time period can perpetuate non-forest vegetation, thereby sustaining a lower forest cover across the landscape that is unsuitable for fishers; under some conditions, "forest loss to high-severity fire could be nearly irreversible if fire activity increases to the point where these areas are prone to reburn severely before a new conifer canopy develops."¹⁴ Thus, the Service fails to grapple with the increasing probability that either (a) burned areas re-burn before the two to four years it takes fishers to return to these areas, or (b) burned areas are subject to stand conversion and will no longer contain the habitat features fishers need to survive.

Further, the Not-Warranted Finding irrationally assumes that "fuel reduction activities" and forest regeneration "have already helped, and will continue to help, buffer some of [wildfire's] worst impacts." See 90 Fed. Reg. at 41358. In doing so, the Service ignores its own finding that, to date, "treatment rates have not been sufficient to curtail increases in wildfire," SAF at 19, and fails to recognize the minimal impact these activities are likely to have in the future.¹⁵ As the Service recognizes, these treatments can only be beneficial "*when and where it is adequately implemented[.]*" *id.* at 48 (emphasis added), and the treatments the Service projects would only address a small fraction of the fisher's habitat within the DPS. As such, they cannot be relied upon to disregard the existential risk of wildfire.

¹⁰ ERIKA L. ANDERSON ET AL., INST. FOR NAT. RES., OR. STATE UNIV., TRENDS IN FISHER (*PEKANIA PENNANTI*) ABUNDANCE AND DENSITY IN A LANDSCAPE OF MIXED-SEVERITY WILDFIRE 3 [in PDF] (2024) (citing Green et al. 2022).

¹¹ Green et al. 2022, *supra*, at 13.

¹² See *id.* at 15.

¹³ See, e.g., Collier, *supra*, at ii; Craig Thompson et al., *Fisher use of postfire landscapes: implications for habitat connectivity and restoration*, 81 W. N. AM. NATURALIST 225, 235–36 (2021); Green et al. 2022, *supra*, at 13–14; Anderson et al., *supra*, at 8 [in PDF].

¹⁴ Alan J. Tepley et al., *Vulnerability to forest loss through altered postfire recovery dynamics in a warming climate in the Klamath Mountains* 23 GLOBAL CHANGE BIOLOGY 4,117 4,130 (2017).

¹⁵ The SAF also disingenuously suggests that that "the native NCSO/NSN analysis unit gained mature forest through regenerate at rates ranging from approximately 0.4 to 1.1 percent annual from 1993–2017." SAF at 48. But the SSA makes clear, during that same time period, there was a *net loss* of fisher habitat across the range (except for the Coast Range in California), largely due to wildfire. SSA at 81.

Finally, the best available science suggests that, in some cases (such as with salvage logging and intensive thinning), “[t]he negative consequences of fuels management may outweigh the negative effects of increasingly frequent and severe wild-fire regimes.”¹⁶ For instance, it is well-established that salvage logging, which occurs throughout the fisher’s range post-fire, has negative effects on fisher populations.¹⁷ As such, the Service’s blanket assertion that fuel reduction activities will curb the risk posed by increasingly severe wildfires, along with its failure to meaningfully consider the negative effects of these activities on the fisher, is arbitrary and capricious.

Given that wildfire trends will be a “significant determinant of demographic stability of the subpopulation . . . , the DPS’s ability to withstand future catastrophe . . . , and its ability to adapt or colonize new habitat in response to environmental change[.]” SSA at 113, and the fact that none of the Not-Warranted Finding’s reasons for rejecting this existential risk stand up to scrutiny, the Not-Warranted Finding is arbitrary, capricious, and contrary to the best available science.

2. Logging and Other Vegetation Management

Fishers require mature forest areas with taller trees, greater canopy cover, and understory structures such as hollowed-out logs, snags, mistletoe brooms, cavities, and deformed or deteriorating trees for denning and resting.¹⁸ Logging and vegetation management activities that remove these features destroy the fisher’s ability to continue using the area for denning and resting.

In the Not-Warranted Finding, the Service relies on the availability of suitable habitat, along with fuel reduction projections and forest regeneration, to find that the fisher does not warrant listing. But the Service fails to analyze the effects logging currently has on the fisher and fails to adequately

¹⁶ Green et al. 2022, *supra*, at 17; see also William J. Zielinski et al., *An assessment of fisher (Pekania pennanti) tolerance to forest management intensity on the landscape*, 310 FOREST ECOLOGY & MGMT. 821, 825 (2013).

¹⁷ See, e.g., Robin E. Russell et al., *Snag longevity in relation to wildfire and postfire salvage logging*, 232 FOREST ECOLOGY & MGMT. 179, 179–87 (2006) (main effects of partial-salvage logging were reduction in overall snag density and average snag size, which in turn reduced average persistence time); James D. Garner, *Selection of Disturbed Habitat by Fishers (Martes Pennanti) in the Sierra National Forest* 1, 32 (May 2013) (M.S. thesis, Humboldt State University) (discussing fishers’ general preference for untreated habitat); Green et al. 2022, *supra*, at 16 (effects of salvage logging within the Beaver Fire perimeter had additive negative effects on fisher density); Chad T. Hanson, *Use of Higher Severity Fire Areas by Female Pacific Fishers on the Kern Plateau, Sierra Nevada, California, USA*, 39 WILDLIFE SOC’Y BULLETIN 497, 501 (2015) (results of study indicate that large mechanical thinning projects and postfire logging are likely to “unnecessarily degrade and homogenize existing suitable fisher denning and resting habitat . . . exacerbating threats to fisher populations”); see also Zielinski et al. 2013, *supra*, 824–25 (extractive treatments, such as clear cutting, shelterwood harvest, and sanitation harvest, would have been less representative of study results on fisher tolerance).

¹⁸ See, e.g., JORDAN ELLISON & KATIE MORIARTY, *POTENTIAL CONSERVATION VALUE OF RETAINING SLASH PILES FOR PACIFIC FISHER—PRELIMINARY RESULTS 3* (2023, final results forthcoming); William J. Zielinski & Andrew N. Gray, *Using routinely collected regional forest inventory data to conclude that resting habitat for the fisher (Pekania pennanti) in California is stable over ~20 years*, 409 FOREST ECOLOGY & MGMT. 899, 900 (2018); Rebecca E. Green et al., *Microsites and structures used by fishers (Pekania pennanti) in the southern Sierra Nevada: A comparison of forest elements used for daily resting relative to reproduction*, 440 FOREST ECOLOGY & MGMT. 131, 132–33, 139–43 (2019). Moriarty et al. 2019, *supra*, at 13.

consider planned increases in logging activities across parts of the fisher's range within the foreseeable future.

Regarding current logging impacts, the Service merely catalogs land ownership across the DPS's range and lists negative effects of timber harvest—such as removal of denning and resting habitat, reduced prey availability, decreased reproduction, and lower abundance and recruitment of suitable habitat generally—without making any assessment as to how much fisher habitat is actually being removed or is otherwise impacted by vegetation management.¹⁹ In the Not-Warranted Finding, the Service arbitrarily states that the fisher exhibits “tolerance of landscape changes from silviculture,” SAF at 45, but provides no support for this conclusion, which is contrary to the evidence before the agency. The Service's failure to analyze the impact timber harvest is having on the DPS is a glaring omission given that logging was a primary driver of the fisher's range contraction, and renders its Not-Warranted Finding arbitrary and capricious.

Concerning planned increases in logging, in March 2025, Executive Order 14225, “Immediate Expansion of American Timber Production,” ordered the Secretary of the Interior and the Secretary of Agriculture to, within 180 days of the order, adopt categorical exclusions under the National Environmental Policy Act to allow for faster approvals for timber production, forest management, and wildfire risk reduction treatments. See 90 Fed. Reg. 11365, 11366 (Mar. 6, 2025). The order also directed the Secretary of the Interior to, within 280 days, “establish a new categorical exclusion for timber thinning and re-establish a categorical exclusion for timber salvage activities.” *Id.*

Shortly thereafter, the Secretary of Agriculture, who oversees the U.S. Forest Service, issued a secretarial memorandum declaring an “emergency situation” across national forests and establishing an Emergency Situation Determination (ESD) area of almost 113 million acres in which the Forest Service can fast-track logging projects. See U.S. Dep't of Agric., Office of the Sec., Secretary's Memorandum 1078-006, Increasing Timber Production and Designating an Emergency Situation on National Forest System Lands 2 (Apr. 3, 2025), <https://www.usda.gov/sites/default/files/documents/sm-1078-006.pdf>. This area, covering almost 60 percent of all national forest lands, also covers parts of the NCSO DPS.²⁰

The SSA notes both of these orders but fails to grapple with their implications. Instead, turning a blind eye, the Service concludes that “[a]t this time, the best available data does not indicate the actual potential impacts” associated with these orders. SSA at 70.

¹⁹ While the Service lists conservation agreements that cover some of the fisher's habitat, the agency fails to make any assessment as to their efficacy.

²⁰ See, e.g., DEFENDERS OF WILDLIFE, FOREST HEALTH AND FUELS EMERGENCY SITUATION DETERMINATION (FHFESD) LANDS (May 2025), <https://tinyurl.com/2jssfe2v> (last visited October 23, 2026) (showing ESD designated areas almost completely covering the Klamath National Forest); see also Vera Smith, *Trump's Timber “Emergency” Paves Way for Logging Conservation Areas and Critical Habitat*, DEFENDERS OF WILDLIFE (May 29, 2025), <https://defenders.org/blog/2025/05/trumps-timber-emergency-paves-way-logging-conservation-areas-and-critical-habitat>.

In a similar vein, the Service points to the current Northwest Forest Plan as a regulatory mechanism that functions to protect the fisher and its habitat. See, e.g., SAF at 28 (“Beneficial management of fishers includes implementation of the Northwest Forest Plan . . .”). But, in November 2024, the Forest Service released a draft Environmental Impact Statement that contemplates massive increases in logging throughout much of the fisher’s range. See *generally* U.S. FOREST SERV., NORTHWEST FOREST PLAN AMENDMENT DRAFT ENVIRONMENTAL IMPACT STATEMENT (2024), <https://usfs-public.app.box.com/v/PinyonPublic/folder/293927886292>. The Service has not explained how, in light of this planned amendment, the Northwest Forest Plan will continue to benefit the fisher.

By failing analyze the current and future effects of logging, the Service cannot adequately support its conclusion that the NCSO DPS does not warrant listing based on adequate habitat in the future, and the Not-Warranted Finding is arbitrary and capricious.

3. Climate Change

The effects of climate change will significantly impact the NCSO DPS’s viability in the foreseeable future. For instance, in addition to increasing the threat of wildfire, warming temperatures reduce fisher survival through heat stress and water loss,²¹ and are expected to cause a shift from conifer-dominated forests to deciduous hardwood forests and woodlands. The Service’s Not-Warranted Finding fails to meaningfully address these effects. It instead discounts them by asserting that the fisher has a “moderate ability” to adapt to major shifts in forest composition and increasing temperatures because it is a habitat “generalist,” SAF at 45–46, and by postulating that “increasing temperatures and increasing hardwood composition in forests may result in increases to availability and quality of natal den sites[.]” SSA at 97, 125. These conclusions, however, conflict with both the best available science and the Service’s own analyses.

As noted in the SSA, the shift towards hardwood-dominated forests “could result in a reduced amount of mid- to late-successional trees with complex understories . . . that fishers require for survival and reproduction.” *Id.* at 139. And while the Not-Warranted Finding asserts that the fisher has a generalist life history, fishers are in fact “among the most habitat-specialized mammals in North America.”²² And as one peer reviewer points out, there is no guarantee that greater availability of den sites by itself would actually lead to greater reproductive success. See Peer review comments to U.S. Forest Serv. 2 (Jan. 18, 2025) [Att. 1]. Essentially, the Service has relied on speculation over evidence about the impacts of changing forest composition, rendering the Not-Warranted Finding arbitrary and capricious.

²¹ See, e.g., Corbin C. Kuntze et al., *Sex and age mediate the effects of rapid environmental change for a forest carnivore, the Fisher (Pekania pennanti)*, 105 J. OF MAMMALOGY 13, 18–19 (2024), <https://doi.org/10.1093/jmammal/gyad105> (finding, for example, that “[s]urvival of females decreased with both increasing minimum and maximum monthly temperature, while male survival decreased with increasing minimum monthly temperature and maximum monthly winter temperature.”).

²² Moriarty et al. 2019, *supra*, at 13.

B. The Service Has Not Adequately Considered the Threat of Anticoagulant Rodenticides.

The Service's Not-Warranted Finding also failed to meaningfully address the serious and pervasive threat anticoagulant rodenticides ("rodenticides") present to fishers in the NCSO DPS. Rodenticides are deadly to fishers, and research shows that fishers more likely to encounter illegal marijuana cultivation sites (and thus, rodenticides) suffer significantly higher mortality rates.²³ Even sublethal exposure to rodenticides can impair immune responses, antipredator behavior, and the ability to recovery from physical injury, and can cause partial paralysis.²⁴ The main source of exposure within the DPS is illegal cannabis cultivation, which is widespread throughout the DPS range. See SSA at 47, 116 (noting that 53.6 percent of suitable fisher habitat in the NCSO DPS overlaps with moderate to high likelihood of illegal marijuana cultivation).

Despite this, the Not-Warranted Finding asserts that rodenticides have an overall "insignificant" effect on the native NCSO/NSN populations. See 90 Fed. Reg. at 41357. The Service also speculates, without offering support, that "the fisher's widespread distribution and relative commonness within the analysis area diffuses the potential for a significant percentage of the population to be exposed to these toxicants" and that "the best available information suggests that the exposure prevalence of [rodenticides] is likely biased high and not reliably extrapolated to the living population for both current or future condition projections." *Id.*

Both the best available science and the Service's own SSA contradict these conclusions. The SSA finds that rodenticides associated with illegal cannabis cultivation "present a significant threat to fisher in the NCSO DPS," SSA at 120, and that fishers in the native NCSO and NSN analysis units in particular "may be experiencing reduced reproductive success as well as a variety of lethal and sub-lethal effects," given that five of 15 core areas within the Klamath Mountains (where most fishers are located) had "over 50 percent of the core area classified with an elevated risk . . . of illegal cannabis cultivation." *Id.* at 120 (internal citations omitted). And, as the SSA also notes, the scale of this threat is staggering. There are "multiple thousands of illegal cannabis cultivation sites" across California alone, including the NCSO DPS, that have not yet been remediated (and likely will not be), and only an estimated "50 percent of the sites needing remediation are ever discovered." *Id.*

Scientific studies indicate that rodenticides present an even greater threat to the fisher than the SSA acknowledges. One study of fishers on the Hoopa Valley Indian Reservation notes a declining male population and posits that "the primary reason for these declines has been [rodenticide] poisoning associated with illegal marijuana growing," and that "male fishers are at higher risk of encountering toxicants because they have much larger home ranges than females."²⁵ This study also points out fisher's "high overall exposure rates" to rodenticides and posits that the problem may be

²³ See Craig Thompson et al., *Impacts of rodenticide and insecticide toxicants from marijuana cultivation sites on fisher survival rates in the Sierra National Forest, California: Impacts of toxicants on fisher survival*, 7 CONSERVATION LETTERS 96 (2014).

²⁴ See *id.* at 93, 98.

²⁵ J. MARK HIGLEY ET AL., BOBCAT ECOLOGY AND RELATIONSHIP WITH AND INFLUENCE ON FISHER SURVIVAL ON THE HOOPA VALLEY INDIAN RESERVATION, CALIFORNIA—FINAL REPORT USFWS TWG CA U-29-NA-1 38 (2014).

growing in severity.²⁶ Multiple studies have also found a correlation between, for example, exposure to cannabis cultivation sites and negative reproductive effects (e.g., smaller litters), along with decreased female survival rates with an increase in the number of illegal cultivation sites in their home ranges; one study in the NCSO DPS found five of 17 (almost 30 percent) of male fatalities resulting from rodenticide toxicosis.²⁷

In addition, the best available science shows that the detection of rodenticide exposures on wildlife in general is, by its nature, strongly subject to underrepresenting true mortality—detecting these toxicants requires obtaining samples of stomach contents or liver tissue, which is often impossible in the wild, where animals are scavenged.²⁸ Similarly, because rodenticides also cause symptoms that can increase susceptibility to predation and threats like vehicle strikes, such deaths are generally not attributed to toxicant exposure even if rodenticides played a causal role.²⁹ Consequently, it is overwhelmingly likely that the true harm from rodenticides extends far beyond the known cases directly linking them to mortality. Such evidence directly contradicts the Not-Warranted Finding’s assertion in the that fishers’ exposure to rodenticides is “likely biased high.” 90 Fed. Reg. at 41357.

The Service has not explained how its conclusion of “insignificant” effects from rodenticides squares with the best available science or its own analysis in the SSA. And while both the SSA and SAF are consistent in noting some uncertainty as to the impact of rodenticides, see, e.g., SSA at 48; SAF at 23–24, neither the SSA nor the Not-Warranted Finding explain why this uncertainty allows the Service to “reliabl[y]” conclude “an overall insignificant effect” on the NCSO DPS of fisher, as the Not-Warranted Finding states. 90 Fed. Reg. at 41357. The Service must explain *why* the uncertainty of rodenticides’ impacts to the fisher supports its decision not to list the DPS.

C. The Service Overstates, Without Support, Connectivity Between Areas of Suitable Habitat in the DPS.

Connectivity, or a species’ ability to move within and between areas of suitable habitat, is a critical part of conservation and plays a large role in determining whether a species will be able to weather future threats. This is particularly true for the fisher, whose habitat has been and will continue to be severely fragmented by wildfire, the effects of climate change, and logging.

The Not-Warranted Finding acknowledges that connectivity will play a crucial role in allowing the fisher to adapt to the increasingly severe threats it faces throughout the DPS, but speculates that, although wildfire and habitat loss are likely to lead to core areas becoming “more isolated and fragmented[,]” they will still provide connectivity in the foreseeable future. SAF at 46–47. But the Service fails to explain how this conclusion squares with the best available science.

²⁶ See *id.* at 36–37.

²⁷ See Higley et al., *supra*, at 36–37; Thompson et al. 2014, *supra*, at 91, 96. See also GRETA M. WENGERT, EVALUATION OF THE IMPACTS TO FISHER REPRODUCTION AND LANDSCAPE USE FROM TRESPASS CANNABIS CULTIVATION IN CALIFORNIA’S FORESTS: FINAL PERFORMANCE REPORT FOR GRANT NO. F21AP00338/G2098105 (2023).

²⁸ See Thompson et al. 2014, *supra*, at 91, 93.

²⁹ See *id.* at 93, 98.

As the Service admits, the fisher is already effectively isolated into three “clusters,” separated by an average distance of 40.2 miles which is “beyond the fisher’s maximum dispersal distance[.]” SSA at 90; *see also id.* at 91 (finding that “[a]lthough fisher have been detected” between clusters, the clusters are “well beyond the various reported dispersal distances”). Compounding its fragmented state, the best available science shows that nearly a quarter of all connectivity corridors are at high fire risk in the foreseeable future. This is particularly true with respect to the Klamath Mountain pyrome, which the SSA identifies as one of the most fire-prone units and the one most heavily impacted by recent large, high-severity fires. *See id.* at 113, 127. Additionally, the primary study on which the Service relies for its analysis of connectivity, Spencer et al. 2019, found the fisher’s habitat “is at risk of further fragmentation by severe fires, forest management, and other factors, which could disrupt metapopulation dynamics and further threaten the species’ resilience in the region.”³⁰

In the face of the best available science indicating that connectivity will decrease in the foreseeable future and threaten the fisher’s resiliency, the Service’s assertions that it is both “unable to project future connectivity in the NCSO analysis area[.]” *id.* at 148, *and* that adequate connectivity will remain in the foreseeable future such that the projected loss of habitat will not endanger the fisher’s continued existence, are arbitrary, capricious, and contrary to the best available science.

D. The Service Disregards Evidence of Small and Declining Populations.

Currently, fisher populations across the NCSO DPS are small, fragmented, and declining. Although estimates vary, the Service estimates that between about 2,800 and 4,000 fishers remain across the DPS’s range, “with approximately 78 and 180 fishers predicted to occur in the SOC and NSN analysis units, respectively.” *Id.* at 76.

Such “[s]mall, isolated populations are subject to an increased risk of extinction from stochastic, genetic, or demographic events.” U.S. FISH & WILDLIFE SERV., FINAL SPECIES REPORT: FISHER (*PEKANIA PENNANTI*), WEST COAST POPULATION 133 (2016) [“2016 West Coast Species Report”]. Because of the distribution of fishers within the DPS, a “moderately low” population size, and “barriers to genetic exchange within and between the 3 subpopulation[s],” fishers in the NCSO DPS face these risks. SSA at 133. Fishers, moreover, are particularly vulnerable to threats related to small population size as low-density carnivores are generally “more susceptible to small increases in mortality factors due to their relatively low fecundity and low natural population densities,” and population sizes may also “be prone to instability . . . in response to fluctuations in prey availability.” 2016 West Coast Species Report at 136–37. Overall, scientific studies suggest that fishers are “highly prone to localized extirpation . . . and their populations are slow to recover from deleterious impacts.” *Id.* at 137.

³⁰ W. J. SPENCER ET AL., CONSERVATION BIOLOGY INST., HABITAT CONNECTIVITY FOR FISHERS AND MARTENS IN THE KLAMATH BASIN REGION OF CALIFORNIA AND OREGON 3 (2019).

In assessing the fisher's current condition, the Not-Warranted Finding states, without citing any support, that the abundance of fishers across the DPS is stable overall because fishers continue to be observed "throughout the . . . analysis area over time." 90 Fed. Reg. at 41357.

But the best available science shows that fisher populations within the DPS are declining. As one peer reviewer pointed out, "[a]ll available evidence suggests that whenever we look we find fisher populations declining." Peer review comments to U.S. Forest Serv. 2 (Jan. 18, 2025) [Att. 2]. Indeed, studies by Green et al. (2022) and Anderson et al. (2024) showed declines in fisher populations in the native NCSO analysis unit.³¹ And the Service noted in its SSA that fisher abundance and distribution in the native NCSO was "in low condition due to an estimated abundance of approximately 4,000 or less, *declining trend at study sites*, and vulnerability to catastrophic events such as high severity wildfire."³² SSA at 124 (emphasis added).

Although the Service asserts that it is unsure whether the declines shown in the available "small, localized studies" are representative of range-wide trends, see *id.* at 79, the Not-Warranted Finding fails to address the discrepancy between its conclusion of "stable overall" and the *available* science.

In addition, the Not-Warranted Finding disregards a noted decline in female fishers, which one peer reviewer pointed out "could have dire consequences for that area's persistence and recovery if that trend continues."³³ As the Service has acknowledged, "[f]emale survival has been shown to be the most important single demographic parameter determining fisher population stability." See, e.g., 2016 West Coast Species Report at 137.

As a result, the Not-Warranted Finding's conclusion that fisher populations are stable is arbitrary, capricious, and not supported by the best available science.

E. The Service Arbitrarily Overstates the Fisher's Adaptive Capacity.

Much of the Service's finding that the fisher does not warrant listing as an endangered or threatened species rests on the agency's assertion that the fisher will be able to adapt to changing conditions. But this assertion is both highly speculative and at odds with the evidence before the agency.

³¹ See Green et al. 2022, *supra*, at 13–14; Anderson et al., *supra*, at 8 [in PDF].

³² In addition to habitat loss, fishers also suffer direct mortality from wildfire. As one peer reviewer points out: "Fishers surely cannot outrun the current pace of fire spread in places like Dixie, Park, LA's fires, etc. Direct mortality of fishers and most other species in fires is likely extremely common." Katie Moriarty, Nat'l Council for Air & Stream Improvement, Response to call for technical review on the second version of the Species Status Assessment (SSA) for the Northern California-Southern Oregon Distinct Population Segment (DPS) of fisher 5 [in PDF] (Feb. 1, 2025). In the context of a small and declining population, the loss of individual animals has an outsize impact on the viability of the population as a whole.

³³ U.S. Fish & Wildlife Serv., NCSO Fisher SSA—Peer and Technical Review Comment Matrix-Round1, Docket No. FWS-R1-ES-2023-0123-0026 18 (Aug. 25, 2025), <https://www.regulations.gov/docket/FWS-R1-ES-2023-0123/document> (discussing Anderson et al. (2024)).

First, the fisher's adaptive capacity with respect to changing habitat conditions is limited: a U.S. Geological Survey assessment of the NCSO DPS of fisher's adaptive capacity rates fishers as "low" because they are "[h]ighly dependent on a particular habitat[.]" and "[c]hanges in the intensity, frequency, or severity of disturbance events due to climate change are likely to have significantly negative impacts on the species."³⁴ Similarly, with respect to fishers' ability to adapt to new climatic conditions, fishers are rated "moderately low" because the species is "moderately (50-90% of occurrence or range) restricted to a particular climatic . . . condition that may be lost or reduced in the assessment area as a result of climate change."³⁵ Further, Pauli et al. (2022) note that "under projected climate change, fishers . . . will experience distributional and numerical declines and increased isolation at their southern range boundaries, and a number of currently vulnerable populations . . . will be driven to extirpation."³⁶ The Service itself recognizes wildfire as the "primary stressor" to the NCSO DPS of fisher, and "one for which sufficient adaptation is unlikely." SSA at 150. It adds that, as long as wildfire trends unfold as predicted, "we expect fishers in the NCSO DPS struggle to adapt to a variety of environmental change[s] in the future." *Id.*

Relatedly, the fisher will likely struggle to adapt to the effects of climate change even apart from changes in its habitat. For example, regarding increasing temperatures, the Service states that "[t]here is uncertainty regarding how these changes will impact fisher populations." *Id.* at 125. But evidence shows that increasing temperatures harm the fisher. Kuntze et al. 2024, for example, found that temperature is "a key determinant of [f]isher survival," with both male and female fisher survival decreasing as temperatures increased.³⁷ One peer reviewer of the Service's SSA, moreover, noted that "[a]s temperatures increase and female survival declines, so will population-level reproduction and recruitment rates;" thus "it is misleading to report that there is uncertainty in the impacts of increasing temperatures." Peer review comments to U.S. Forest Serv. 2 (Jan. 18, 2025) [Att. 1].

Further, fishers' "tolerance of landscape changes from silviculture" depends heavily on whether vegetation management actions leave the structures they need for resting and denning (i.e., snags, cavities, coarse downed wood, etc.) in place. As discussed above, research has suggested that fuels management activities that eliminate these structures, such as salvage logging, can cause more harm to the fisher than wildfire itself.³⁸

Research also identifies fishers' dispersal ability as a limiting factor for adaptability. The same U.S. Geological Survey assessment of adaptive capacity, discussed above, rates fishers' capacity as "high" with respect to dispersal distance based on their consistent ability to move more than 1 km from natal or source areas.³⁹ The assessment, however, also lists "Dispersal Syndrome"

³⁴ LINDSEY L. THURMAN ET AL., ADAPTIVE CAPACITY OF THE NORTHERN CALIFORNIA/SOUTHERN OREGON DPS OF FISHER (PEKANIA PENNANTI): U.S. GEOLOGICAL SURVEY DATA RELEASE (2025), <https://doi.org/10.5066/P13CMDMS>.

³⁵ *Id.*

³⁶ Jonathan N. Pauli et al., *Competitive overlap between martens* *Martes americana* and *Martes caurina* and *fishers* *Pekania pennanti*: a rangewide perspective and synthesis, 52 Mammal Rev. 392, 404 (2022).

³⁷ Kuntze et al., *supra*, at 18–19 (2024).

³⁸ See, e.g., Green et al. 2022, *supra*, at 16–17; see also Zielinski et al. 2013, *supra*, at 825.

³⁹ See Thurman et al., *supra*.

as a factor—for this, fishers’ adaptive capacity is “low.” This is because “[o]nce establishing a home range, adult fishers can make *minor* annual adjustments, but rarely disperse to an entirely new home range.”⁴⁰ The SSA also highlights the fisher’s dispersal capacity as a limiting factor for adaptability, noting that “fishers within the NCSO DPS have not expanded their range outside of reintroduction efforts” and that “[b]ecause of these factors, we find fishers’ dispersal and colonization ability to be limiting current adaptive capacity in the NCSO DPS.” SSA at 122. In this respect, a hypothetical ability to adapt to habitat loss does not matter if fishers cannot, or will not, move to new areas of suitable habitat. In addition, the SSA predicts that fishers’ ability to adapt to environmental change may “likely” decrease over time. See *id.* at 150. The SSA notes that, because of anticipated decreased connectivity in within the DPS, “increasing isolation and reductions in abundance may lead to decreases in genetic diversity,” and that “[s]uch declines are likely to be significant or sustained under our analysis scenarios.” *Id.* at 149. As a result, “some loss of genetic diversity from potential reduced fisher abundance may negatively affect adaptive capacity in the future.” *Id.*

Given the fisher’s non-existent or limited ability to adapt to the threats facing it, the Not-Warranted Finding’s reliance on adaptive capacity to avoid listing it as an endangered or threatened species is arbitrary, capricious, and contrary to the best available science.

F. The Service Has Failed to Meaningfully Assess How the Threats Facing the NCSO DPS Collectively Impact the Fisher.

The ESA requires the Service to consider not only the distinct threats facing the fisher, but how they impact the DPS cumulatively. See 16 U.S.C. § 1533(a)(1); 50 C.F.R. § 424.11(c). As a Solicitor’s Opinion from the Department of the Interior notes, it is quite plausible for the Service to identify multiple threats to a species and find none of them significant enough to affect the conservation status of the species, but “[n]evertheless, when all of the factors are considered in combination . . . the [Service] could still conclude that the species is likely to become endangered in the foreseeable future.” Off. of the Solicitor, U.S. Dep’t of Interior, The Meaning of “Foreseeable Future” in Section 3(20) of the Endangered Species Act (M-37021) 9–10 (Jan. 16, 2009). A proper analysis must therefore consider how individual threats impact a species’ viability in combination. See *id.*

The Not-Warranted Finding, however, fails to meaningfully consider how the threats facing the fisher cumulatively impact the DPS. For instance, there is no discussion of how threats such as vegetation management, rodenticides, and the forthcoming decrease in regulatory protections for suitable habitat might interact with the stressors related to habitat change.

Instead, the Service repeatedly points to uncertainty as to how and to what extent the cumulative and synergistic effects of multiple stressors are impacting, and will impact, the fisher. See, e.g., SAF at 30; SSA at 134 (“It is extremely difficult to accurately predict and assess the level of increased risk from all the possible combinations of stressor impacts . . .”). But this is not enough. The Service must explain *why* such uncertainty favors a decision not to list the species. The Service’s failure to do so renders its Not-Warranted Finding arbitrary and capricious.

⁴⁰ See *id.* (emphasis added).

G. The Service Has Failed to Consider Whether the Fisher Warrants Listing Based on Threats Throughout Its Range.

A DPS can be listed based on threats throughout all or in a significant portion of its range. See 16 U.S.C. §§ 1532(6), (20). The question of whether a species is endangered or threatened “throughout all” of its range is separate and distinct from whether a species is endangered or threatened in a “significant portion of its range,” and the Service is required to answer both.

Here, however, the Service never answers whether the fisher warrants listing as an endangered or threatened species based on threats throughout all of its range. Instead, the SAF only analyzes whether the NCSO DPS is endangered or threatened within significant portions of its range—looking at the SOC and native NCSO/NSN analysis units—because the Service found that risks varied across the fisher’s range. See SAF at 42, 45.

In doing so, the Service has failed to comprehensively assess the fisher’s status throughout the DPS’s range as a whole. For instance, the Service never asks the question of whether the NCSO DPS warranted listing as a threatened species throughout all of its range and never analyzes the threats facing the SOC portion of its range at all, instead determining that the SOC unit is “not significant.” This omission violates ESA and is arbitrary and capricious.

H. The Service Arbitrarily Finds that the SOC Portion of the Fisher’s Range Was Not “Significant.”

The Service has also arbitrarily found that the SOC portion of the DPS’s range was not “significant.” As an initial matter, the Service’s determination is based on a flawed definition of what constitutes “significant,” asserting that the SOC analysis unit was not significant because it did not “contribute *meaningfully* to the viability of the DPS as a whole.” SAF at 50. This vague standard has been rejected as “provid[ing] no threshold for determining what makes any one of the factors of resiliency, representation, and redundancy ‘meaningful’ such that the population could be considered ‘significant.’” *Def. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 828 (N.D. Cal. 2022).

Regardless, the SOC analysis unit is, in fact, “significant” as it provides conservation value for the NCSO DPS by contributing to the NCSO DPS’s resiliency, redundancy and representation. For instance, unlike the native NCSO/NSN analysis unit, the SOC “has a low likelihood of illegal cannabis cultivation across 65 percent of the area analyzed.” SSA at vi. In contrast, the Service has estimated that 50 percent of the native NCSO analysis unit’s two largest subregions⁴¹ has a high or moderate likelihood of cannabis cultivation. See *id.* at 151. A lower exposure to illegal cultivation sites (and the rodenticides present there) correlates to higher fisher survival.⁴² Additionally, of the three analysis units, the SOC has consistently had the lowest percent of its area burned annually. See, e.g., *id.* at 101 Fig. 24 (showing percent area burned in ten-year windows since 1984). The Service has also

⁴¹ For the current condition and future condition analyses, the Service subdivided the NCSO analysis unit into 10 ecological subregions. See SSA at 80, Fig. 14.

⁴² See, e.g., Thompson et al. 2014, *supra*, at 96–98 (“We have established a statistically significant association between [rodenticide] exposure and female fisher survival.”).

found that the SOC faces a lower risk of high-severity wildfire in the future—20 percent of the SOC’s “intermediate” and “selected for” habitat could be lost to wildfire, compared to 29 percent for the NCSO and 55 percent for the NSN analysis areas. See *id.* at 141.

Given that the SOC analysis unit faces a lesser degree of threat from the two greatest threats facing the DPS—wildfire and rodenticides—it significantly contributes to the DPS’s viability. As a result, the Service’s determination that the SOC does not constitute a “significant” portion of the DPS’s range is arbitrary and capricious.

I. The Service’s Analyses Ignore Substantial Loss of Historic Range.

In its Not-Warranted Finding, the Service fails to consider the substantial loss of the fisher’s historic range. Indeed, the fisher has been extirpated from nearly all of Washington, most of Oregon, and from half of its California range. This violates the ESA in two ways. First, the Service has failed to consider if this lost historic range constitutes a significant portion of the species’ range necessitating listing; and second, the Service has failed to consider how this loss of range affects the species’ current status under 16 U.S.C. § 1533(a)(1)(A).

In 2014, the Service promulgated a final policy interpreting the phrase “significant portion of range” in the ESA that in part defined the term range in the phrase to only include current range. See 79 Fed. Reg. 37578, 37609 (July 1, 2014). This definition was upheld by the Ninth Circuit based on Chevron deference. See *Ctr. for Biological Diversity v. Zinke*, 900 F.3d 1053, 1064–67 (9th Cir. 2018). With such deference recently overturned by the Supreme Court in *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369 (2024), a district court in Montana recently overturned this interpretation in a case over the western population of gray wolves, finding that the “Service’s definition of ‘range’ to categorically include only a species’ current or occupied range is contrary to the statute; rather, the ESA requires the Service to consider historical range in its ‘significant portion’ analysis.” *Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 801 F. Supp. 3d 1151, 1181 (D. Mont. 2025). As such, the Service’s failure to consider the fisher’s lost historical West Coast range violates the ESA.

Even if the Service were allowed to limit its “significant portion” analysis to current range, it still can’t ignore the massive loss of range experienced by the fisher in its West Coast range. Indeed, the Service recognized in its 2014 significant portion of range policy that “[w]hile we conclude that it is not necessary to separately consider whether lost historical range is an SPR, evaluating the effects of lost historical range on the viability of the species is an important component of evaluating the current status of the species.” 79 Fed. Reg. at 37584. Despite this recognition, the Service utterly fails to consider the effect of loss of most of the fisher’s West Coast range on the viability of the NCSO population, or what that loss says about the fisher’s likelihood of survival in the face of numerous severe threats.

V. Conclusion

As set forth above, the Service’s Not-Warranted Finding for the NCSO DPS of fisher violates section 4 of the ESA based on its failure to utilize the best available science and by reaching

conclusions that are not supported by the evidence before the agency, and is therefore arbitrary, capricious, and contrary to law.

The Conservation Groups may pursue legal action if the Service does not take action within 60 days to remedy these violations, including the withdrawal and reconsideration of the Not-Warranted Finding.

If you would like to discuss these issues further, please contact us at your earliest convenience. Thank you for your attention to this matter.

Sincerely,

/s/ Deirdre Dlugoleski

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Attachment 1

PEER/TECHNICAL REVIEW OPPORTUNITY, ROUND 2 - January 18, 2025 - Additional share of revised DRAFT NCSO fisher SSA Report.

Please use this document to record any comments on our revised DRAFT SSA report, specifically for these two questions (and ignore any other automatic peer/technical review document that you used for your first review during fall 2024. For this revised DRAFT NCSO fisher SSA report, please consider the following two questions, which are focused on the revisions we made in response to the first review you assisted on:

Question #1: Are our methods logical and supported based on the scientific information available for:

(a) delineating analysis units (see Figure 2, p. 5),

The methods used to delineate the analysis units are logical and justified based on available genetic information, history of conservation actions, and spatial distribution of contemporary subpopulations.

(b) current condition methods (Chapter 5, beginning on p. 66), noting that each subsection includes both methods and results, and (3) future condition methods (Chapter 6, beginning on p. 124)?

I am not clear on the decision to utilize the Fitzgerald model output as a contemporary measure of habitat suitability. It is not surprising to me the discrepancies between the Fitzgerald habitat suitability categories and classification of the contemporary location data. The Fitzgerald model was developed using fisher occurrence data “from the early 1900s through 2013.” The contemporary occurrence data from Martin et al. 2024 were from 2011 to 2022. An alternative approach would be to utilize the occupancy surface from Martin et al. 2024 as the contemporary distribution and measure of habitat suitability.

Question #2: Are the conclusions we reach logical and supported by:

(a) the evidence we provide, and

Yes, generally, the evidence provided support the conclusions. As mentioned above, I would advocate to using the occupancy surface from Martin et al. 2024 instead of the habitat suitability surface of Fitzgerald et al.

(b) based on valid assumptions?

Yes, the assumptions are well articulated and supported by published literature. The assumptions also make appropriate mention of the various uncertainties and how those are addressed in the assessment.

Current condition assumptions are on p. 67 and current condition summary conclusions are pp. 114-124 . Future condition assumptions are on p. 124 and future condition summary conclusions on pp. 137-140 .

Additional Comments:

Line 824-826: I can't see how this is correct for the entire DPS. The Thompson et al. 2007 citation cannot be correct. Additional rest site citations to consider: metanalysis by Aubry et al. 2013 and supporting papers, Moriarty et al. 2019 Klamath Plateau Fisher Study Report

Line 1226: This statement is misleading. Kuntze et al. 2024 found that increasing temperatures correlated with lower survival. Female fishers need to survive in order to reproduce. As temperatures increase and female survival declines, so will population-level reproduction and recruitment rates. Although Matthews et al. 2019 did find that natal dens buffered minimum temperature better than late-maternal dens, it could also stand to reason that increasing temperatures could negatively influence the survival of kits in late-maternal dens because they do not buffer temperatures as well. Matthews et al. 2019 only considered a very minor element of den site selection, and did not evaluate the role of increasing temperatures on reproductive success. Thus, it is misleading to report there is uncertainty in the impacts of increasing temperatures.

Line 1238-1240: This statement incorrectly assumes that a greater availability of potential natal den sites is correlated with greater reproductive success. This assumption has not been empirically evaluated.

Line 1242-1243: This statement is additional evidence to support the need to edit the first sentence in this section.

Line 1245: The conclusions in this section misrepresent the cited literature and do not reference other relevant literature (e.g., Raley et al. 2012, Wengert 2013).

Line 1248-1249: This statement is misleading and not supported by the literature. The only study cited (incorrectly) here supporting this statement considers occupancy, not survival or reproduction and was not conducted in the NCSO. Forest composition is only one element of a unidimensional space fishers need to navigate. Interspecies interactions (e.g., predation) are another important consideration in evaluating future habitat conditions. Consider the findings of Wengert 2013 (p, 96), "bobcats were located more frequently in hardwood forest (in our study area, oak (*Quercus* spp.) woodland) than in random locations."

Line 1255 1256: why are these reports cited to support the assertion that fishers do not currently use deciduous forests in the NCSO, neither of these reports mention fisher, at all.

Line 1256-1258: It is important to emphasize that Evan and Mortelliti 2022 found a positive correlation between fisher colonization and proportion of deciduous forests. Deciduous forest did not influence initial occupancy or persistence. Thus, an alternative hypothesis is that areas

with greater proportions of deciduous forest might be colonized by dispersing fishers, but these forest conditions do not influence persistence.

Line 1258-1263: This statement is subjective. Authors should not conflate colonization with persistence. The statement about “conifer habitat” is also factually incorrect, as fishers within the NCSO tend to select mixed conifer-hardwood forests, see review in Raley et al. 2012.

Line 1272-1274: what evidence supports this claim?

Line 1298-1299: consider indicating that the impact is negative

Line 1467: why only high-severity fire?

Line 1602-1604: This conclusion is dependent on the population state variable of interest. Thompson et al. evaluated patterns of fisher occupancy while Green et al. evaluated fisher density. Fishers appear to occupy areas of low severity fire but even low severity fire had a negative influence on fisher density in the Klamath.

Attachment 2

PEER/TECHNICAL REVIEW OPPORTUNITY, ROUND 2 - January 18, 2025 - Additional share of revised DRAFT NCSO fisher SSA Report.

Please use this document to record any comments on our revised DRAFT SSA report, specifically for these two questions (and ignore any other automatic peer/technical review document that you used for your first review during fall 2024. For this revised DRAFT NCSO fisher SSA report, please consider the following two questions, which are focused on the revisions we made in response to the first review you assisted on:

Question #1: Are our methods logical and supported based on the scientific information available for:

(a) delineating analysis units (see Figure 2, p. 5),

This is certainly improved. It is a little odd however how the NCSO directly encompasses the NSN. Shouldn't there be a gap between them?

(b) current condition methods (Chapter 5, beginning on p. 66), noting that each subsection includes both methods and results, and (3) future condition methods (Chapter 6, beginning on p. 124)?

In general, I like the inclusion of uncertainty and being more forward with what we don't know and the assumptions taken as a result (p. 67). However, something that is clearly lacking is that there is no mention of how competition maybe limiting fisher populations. The uncertainty and subsequent assumptions that could be included is a "species interaction" section. This could cover how little we really know about these processes (ie competition and predation) in terms of their regulation of fisher populations.

In addition, I'm not so sure that the assumption of toxicant exposure is a good one. The effects of rodenticides and widespread potential for exposure suggests that this could be a huge issue. Specifically, if litter size drops to <1 after exposure to rodenticide then reproduction is essentially halved and likely results in a dramatic population decline in areas exposed to rodenticides.

Question #2: Are the conclusions we reach logical and supported by:

(a) the evidence we provide, and

(b) based on valid assumptions?

Current condition assumptions are on p. 67 and current condition summary conclusions are pp. 114-124 . Future condition assumptions are on p. 124 and future condition summary conclusions on pp. 137-140 .

There are few issues regarding your conclusions. Much has already been said about the use the of Royle-Nichols approach to estimate population size and so I will not go into additional details here but an estimated <4000 is certainly closer to the truth although likely high still due to the assumptions of that estimator.

I disagree with your conclusion that populations are declining or stable. All available evidence suggests that whenever we look we find fisher populations declining. None of contemporary studies you cite in Hoopa and Klamath show stable populations. The status of the NSN is unknown following substantial fires in that area. The big caveat here is that we don't have good representation from across the whole DPS. Nevertheless, it is a little disingenuous to suggest fisher populations are stable when all of the evidence you provide shows them consistently in decline.

Line-by-Line Comments

Line 252-259: Table ids incorrect

Line 297: You could distinguish that the NSN is translocated native individuals while the SOC was sourced from outside the DPS.

Line 408: **Figure 2.** Is the purple here correct? It seems a little odd that there is no gap between the NSN and the rest of the NCSO.

Line 498: Error reading

Line 497-502: All of these age data are concerning given that a female doesn't give birth until she is 2! Perhaps add some specific language about where these numbers come from. Granted we do expect a healthy population to have the most amount of young individuals, as the opposite would suggest a population in steep decline.

Line 557: Error reading

Line 578: Where does 17.9 come from? Is this a mean, median, or mode?

Line 596: I'll stop commenting on these but you will need to fix the error messages found throughout.

Line 605: These litter sizes coupled with the ages described are alarming.

Line 617: All the numbers in this section are not equivalent. Are all of the recruitment rates considered to be the number of juveniles per adult female monitored? Apparent recruitment estimates indicate the probability that a previously undetected individual will be recruited into the population in that year, and *not* a ratio of juvs to monitored females. If the numbers from Green are correct.... This is troubling.....

Line 621: These recruitment rates suggest that fishers are declining hard.....

Line 675: Allen et al. 2021 is not in the references....

Line 1047: Are you sure about this? I have never heard of a SOC individual *west of Grants Pass*.

Line 2764: I like the addition of this section. It makes clear what we know and don't know.

Line 2791: The assumption that there is a negligible or isolated effect is a bold one.

Line 2810: mapped observations of selected against

Line 2833 - 2842: Figure 11 and its interpretation need to be readjusted. The y axis should be the percentages of observations and then the sample size for each class can be listed in the figure description. As is, this figure and your interpretation of it don't make much sense. Does this control for sampling bias in any way? Are there patterns where these selected against locations are (e.g., the SOC perhaps?)

Line 2870: Is this paper actually in press or do you mean in prep?

Line 2876-2879: I know we've already gone over these issues in the prior round of review but this interpretation of Furnas and Martin is incorrect. You simply cannot deduce population size from these

methods. Their results suggest that over their respective sampling periods (6 years and 12 years) there was estimated to be 3,196 and 4,323 fishers over their sampling periods. ***This is not the same as an in situ population estimate.*** It means that there were estimated to be that many individuals over the course of the sampling period. Abundance models from unmarked individuals and using these N mixture approaches have well known inaccuracies (see Ruprecht, Joel S., Charlotte E. Eriksson, Tavis D. Forrester, Darren A. Clark, Michael J. Wisdom, Mary M. Rowland, Bruce K. Johnson, and Taal Levi. "Evaluating and integrating spatial capture–recapture models with data of variable individual identifiability." *Ecological Applications* 31, no. 7 (2021): e02405.).

Line 2885: Did you use a Bayesian approach or did Anderson?

Line 2926: Which areas were described as stable? Everything you list is declining.

Line 2939: Linden was in New York. Don't we have estimates from the DPS?

Line 2957: Density of what?

Line 2963: Now Martin is in litt?

Line 3199: Does this imply that conifers are cold forests? What are these classifications?

Line 3290: Double check but I think this acronym was use previously in the document but not explained.