IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

CENTER FOR BIOLOGICAL DIVERSITY, et al., Plaintiffs, and WESTERN WATERSHEDS PROJECT, et al., Consolidated-Plaintiffs, vs. UNITED STATES FISH AND WILDLIFE SERVICE, et al., Defendants, and SPORTSMEN'S ALLIANCE FOUNDATION, et al., Defendant-Intervenors.	Lead Case CV 24–86–M–DWM Member Case CV 24–87–M–DWM CV 24–97–M–DWM OPINION and ORDER

In the 1930s, *Canis lupus*,[1] the gray wolf, was nearly extinct in the United States. This extirpation came at the hands of men acting on an anti-predator narrative, not science; was executed through almost every means by which man

[1] Holotype described in 1758 by Swedish botanist and zoologist Carl Linnaeus.

can interact with a wild animal—hunting, trapping, and poisoning; and was often met with a reward—bounties.

In 1973, Congress enacted the Endangered Species Act ("ESA"), which has had a profound effect on the restoration of the ecosystem flora and fauna. The ESA was described by the Supreme Court as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 179 (1978). The principle and policy of the ESA reached fruition with the recovery and restoration of many species, including the gray wolf. That success was not without conflict. The success of species' recovery in many instances, including the gray wolf, led to delisting those species, returning their fate to the management of state wildlife agencies. It is that functional transfer of management that precipitated this lawsuit because the historical necessity of extending protection to the gray wolf, the human activities that necessitated listing *Canis lupus*, are singularly reflected in the legislative and regulatory policies implemented under state management.

Wildlife management agencies are likely to find themselves in a *Catch-22* as they cannot escape from mutually conflicting dependent conditions: if the federal agency succeeds in restoring the gray wolf, leading to delisting, then the state agencies will depredate the wolf, leading to relisting, engendering a fruitless cycle of delisting and relisting. Ultimately, management of *Canis lupus* must not be by a

political yo-yo process. As the law intends, a science-based approach negates this management dilemma.

Plaintiffs are environmental organizations challenging the United States Fish and Wildlife Service's (the "Service") 2024 determination that listing a distinct population segment of gray wolves in the Western United States as endangered or threatened under the ESA is not warranted. (Doc. 1.)[2] Plaintiffs argue that in its determination, the Service failed to: (1) consider a "significant portion" of the gray wolf's range by ignoring historical range and discounting both Colorado and the West Coast; (2) consider the "best available science" on gray wolf populations and the impacts of human-caused mortality; and (3) evaluate the threat to gray wolves from inadequate existing regulatory mechanisms. For the most part, Plaintiffs are correct.

I. BACKGROUND

A. ESA

Congress enacted the ESA "to provide a program for the conservation of . . . endangered species." 16 U.S.C. § 1531(b). Accordingly, the ESA requires "all Federal departments and agencies" to "seek to conserve endangered species" and "utilize their authorities in furtherance of the purposes of" the ESA. *Id.* § 1531(c)(1). To that end, Section 4 of the ESA directs the Secretary of the

[2] Docket citations are to the lead case, CV 24–86–M–DWM.

Interior (the "Secretary") to determine whether a species is "endangered" or "threatened." *Id.* § 1533. A "species" includes "species" or "any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." *Id.* § 1532(16). An "endangered species" is a species that "is in danger of extinction throughout all or a significant portion of its range." *Id.* § 1532(6). A "threatened species" is one that "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* § 1532(20). The Service determines whether a species is "endangered" or "threatened" by evaluating the following five "threat" 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). That determination must be "solely on the basis of the best scientific and commercial data available . . . taking into account those efforts, if any, being made by any State . . . to protect such species, whether by predator control, protections of habitat and food supply, or other conservation practices."

Id. § 1533(b)(1)(A). Absent ESA protections, individual states are responsible for wildlife management.

The ESA permits an "interested person" to petition the Secretary to add or remove a species from the lists of threatened and endangered species. *Id.* § 1533(b)(3). "To the maximum extent practicable, within 90 days after receiving [a] petition," the Service must determine whether the petition presents "substantial . . . information indicating that the petitioned action may be warranted" ("90-day finding"). *Id.* § 1533(b)(3)(A). "Within 12 months after receiving a petition that . . . present[s] substantial information indicating that the petitioned action may be warranted," the Service must review the status of the species and make a finding that (i) the petitioned action is not warranted; (ii) the petitioned action is warranted; or (iii) the petitioned action is warranted but precluded by pending proposals to determine whether any species is an endangered or threatened species ("12-month finding"). *Id.* § 1533(b)(3)(B). If the Secretary makes a 12-month finding that adding or removing a species from the list is warranted, he must publish a notice in the Federal Register that includes the complete text of the proposed rule to implement the action. *Id.* § 1533(b)(3)(B)(ii). The Secretary must act on a proposed rule within one year of its publication. *Id.* § 1533(b)(6)(A).

B. Gray Wolf

Gray wolves are the largest wild member of the *Canidae* or dog family. FWS000406. They are "highly territorial, social animals and group hunters, normally living in packs of seven or fewer, but sometimes attaining pack sizes of 20 or more wolves." FWS000406. Historically, hundreds of thousands of gray wolves ranged across the Western United States. FWS000430; FWS000019. However, as a result of human-caused mortality from poisoning, trapping, shooting, and publicly funded eradication programs, the gray wolf population was essentially exterminated by the 1930s. FWS000430. By the 1970s, the species had been eliminated from most of its historical range and survived only in small populations in Minnesota and Isle Royale, Michigan. FWS000430.

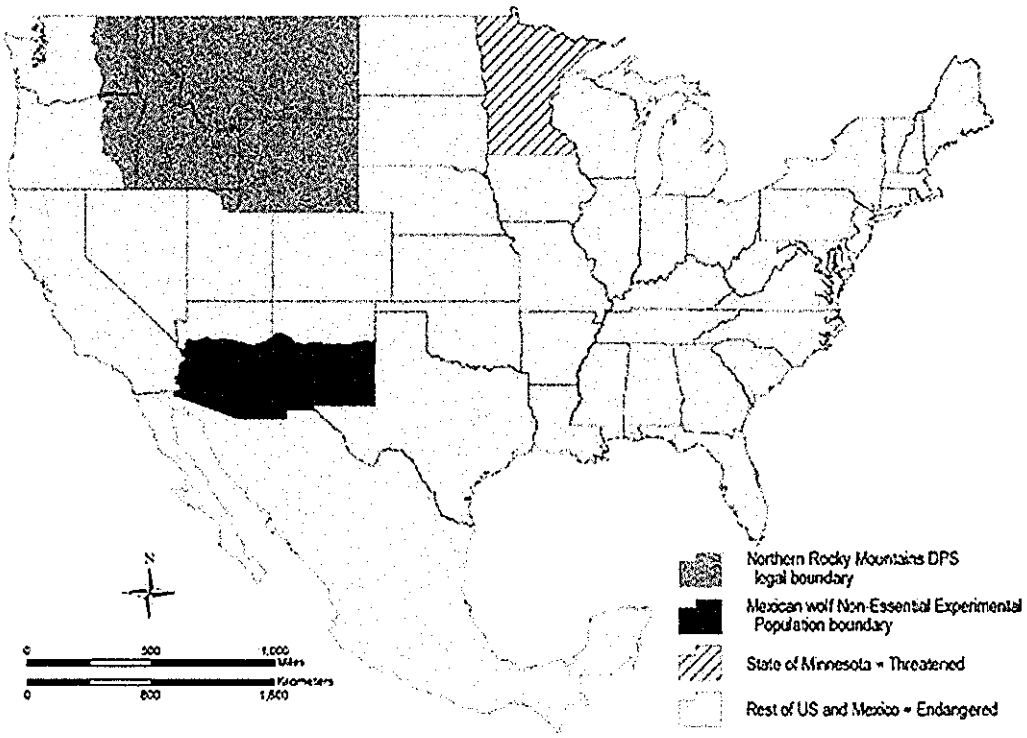
1. Listing History

In 1978, the Service listed the gray wolf in Minnesota as "threatened" and gray wolves elsewhere in the lower-48 United States and Mexico as "endangered" under the ESA. FWS000002. In 2009, this listing was revised through the designation and delisting of the population of gray wolves in the Northern Rocky Mountains (which includes Idaho, Montana, and Wyoming; the eastern one-third of Oregon and Washington; and a small portion of north-central Utah) as a Distinct Population Segment ("DPS"), (the "2009 Rule"). FWS000002. Although this Court invalidated that delisting, *see Defs. of Wildlife v. Salazar*, 729 F. Supp. 2d

1207, 1228 (D. Mont. 2010), it was reinstated by Congress, Pub. L. 112-10, 125 Stat. 38 (Apr. 15, 2011).[3]

In 2020, the Service published a final rule delisting the gray wolf everywhere in the coterminous United States and Mexico, except for the Mexican wolf subspecies ("2020 Rule"). FWS000003; 85 Fed. Reg. 69778 (Nov. 3, 2020). That rule took effect in January 2021. FWS000003; 85 Fed. Reg. 69778. Three lawsuits challenging the 2020 Rule were filed in the Northern District of California. *See Defs. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 818 (N. D. Cal. 2022). In February 2022, the district court vacated and remanded the 2020 Rule, reinstating the prior ESA protections for the gray wolf. *Id.* at 834. While that decision has been appealed, (*see* Doc. 65 at 15), gray wolves are once again listed as threatened in Minnesota and endangered in all other portions of the coterminous United States and Mexico, with the exception of the Northern Rocky Mountains DPS. *Defs.*, 584 F. Supp. 3d at 834; *see* 88 Fed. Reg. 75506 (Nov. 3, 2023). That listing status is reflected below:

[3] For a complete listing history see *Defenders of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 818–20 (N. D. Cal. 2022).



88 Fed. Reg. at 75508. Additionally, in 2023, wolves in Colorado became listed as a Section 10(j) non-essential experimental population under the ESA.[4] *See* 88 Fed. Reg. 77014 (Nov. 8, 2023); FWS000040.

2. Petitions and Findings

In 2021, Plaintiffs filed two petitions with the Service, requesting that the Service identify and list a Western United States DPS ("Western DPS") of gray wolves, or, in the alternative, relist the existing Northern Rocky Mountains DPS. FWS121419–35; FWS121471–77. In September 2021, the Service issued a 90-day finding on both petitions, concluding that they presented substantial

[4] Under Section 10 of the ESA, the Service can establish an "experimental" population outside the species' current range provided it contributes to the species' conservation. *See* 16 U.S.C. § 1539(j).

information that listing gray wolves in a Western DPS or relisting the Northern Rocky Mountains DPS "may be warranted." 86 Fed. Reg. 51857, 51859 (Sept. 17, 2021). The Service then conducted a species status assessment. FWS000398–759. That assessment applied "the conservation biology principles of resiliency, redundancy, and representation," (collectively known as the "3Rs"), to evaluate the viability of the gray wolf species. FWS000406, FWS000417–19. "Resiliency is the ability to sustain populations through the natural range of favorable and unfavorable conditions," "[r]edundancy spreads risk among multiple populations or areas to increase the ability of a species to withstand catastrophes," and "[r]epresentation is a species['] ability to adapt to changes in the environment." FWS000406. "Using these principles, [the Service] identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability." FWS000014. This framework consists of three sequential stages: first, an evaluation of the species' needs; second, an assessment of its historical and current condition; and third, an assessment of its "plausible range of future responses to positive and negative environmental and anthropogenic influences." FWS000014–15.

Although the Service failed to meet its deadline to produce a 12-month finding, it did so by February 2024 (the "Finding" or "2024 Finding"). 89 Fed.

Reg. 8391 (Feb. 7, 2024). In the Finding, the Service concluded that: (1) gray wolves in the Northern Rocky Mountains DPS no longer constitute a valid listable entity because they are no longer discrete from other wolves in the Western United States,[5] *see* FWS000007–09, and (2) while gray wolves in the Western DPS are a valid listable entity, they are not "endangered" or "threatened" under the ESA, *see* FWS000010–14. 89 Fed. Reg. at 8393–95. For the Western DPS, the Service acknowledged that "human-caused mortality" is one of the primary stressors with the potential to affect gray wolf populations, but concluded that the abundance of habitat and prey "in conjunction with the high reproductive potential of wolves and their innate behavior to disperse . . . has allowed wolf populations to withstand relatively high rates of human-caused mortality." 89 Fed. Reg. at 8394. The Service further explained:

> Our analysis of the current condition of gray wolves in the Western United States demonstrates that, despite current levels of regulated harvest, lethal control, and episodic disease outbreaks, wolf abundance in the Western United States has generally continued to increase and occupied range has continued to expand since reintroduction in the 1990s, with the exception of 3 years during which wolf abundance in the Western metapopulation decreased slightly (*i.e.*, a decrease of approximately 50 to 100 wolves in 1 year). As of the end of 2022, States estimated that there were 2,797 wolves distributed among at least 286 packs in 7 States. This large population size and broad distribution contributes to the resiliency and redundancy of wolves in the Western United States. Moreover, wolves in the Western United States

[5] Recognizing the Service's finding that the Northern Rocky Mountains no longer constitutes a DPS, this Order refers to the geographic area of the former Northern Rocky Mountains DPS as simply "the Northern Rocky Mountains."

> currently have high levels of genetic diversity and connectivity, further supporting the resiliency of wolves throughout the West. Finally, based on several metrics for assessing adaptive capacity, wolves in the Western United States currently retain the ability to adapt to changes in their environment (representation).

89 Fed. Reg. at 8394 (internal citations omitted). The Service reached the same conclusion for the discrete areas it identified as "significant portions" of the gray wolf's range within the Western DPS, ultimately concluding:

> After assessing the best available data, we concluded that the gray wolf in the Western United States is not in danger of extinction, or likely to become in danger of extinction in the foreseeable future, throughout all of its range or in any significant portion of its range. Therefore, we find that listing the gray wolf in the Western United States as an endangered species or a threatened species under the Act is not warranted. A detailed discussion of the basis for this finding can be found in the species assessment form and other supporting documents.

89 Fed. Reg. at 8395 (internal reference omitted).

3. Population Data and Modeling

To understand both the Service's 2024 Finding and Plaintiffs' challenges, it is necessary to understand how the Service determined: (1) the current gray wolf population, (2) the minimum thresholds for a viable wolf population, and (3) the estimated future wolf population. These concepts are briefly introduced here.

a. Current Population

In estimating the current gray wolf population, the Service relied on population estimates provided by state wildlife agencies. *See* FWS000538–44; FWS000552–53 (Table 5). Traditionally, these agencies counted wolves using

direct monitoring techniques, such as radio collars and field observation, to provide "minimum counts at the end of each calendar year." FWS000538. This method, known as the "minimum count" approach, is used in many states, including Oregon, Washington, and Wyoming. FWS000539; FWS000542. However, to reduce reliance on direct monitoring techniques, which have both practical and economic limitations when applied to larger wolf populations, the states with the largest wolf populations, i.e., Idaho and Montana, have been developing alternative population estimate methodologies. FWS000539, FWS000542–44; *see* FWS009748 (Montana describing the minimum count approach as "expensive, unrealistic, and unnecessary"). Since 2019, Idaho has counted wolves using a "space-to-event" model that relies on trail cameras to extrapolate population counts. *See* FWS000540–41. Since 2020, Montana has adopted an "integrated patch occupancy model," which "incorporates an occupancy, territory, and group size model to estimate annual wolf occupancy and abundance . . . based primarily on knowledge of wolf biology and behavior rather than field monitoring." FWS000542. While the minimum counts model likely underestimates population size, the methodologies used by Idaho and Montana likely overestimate wolf populations. *See* FWS000542–43. According to the Service, none of these methods has an accepted, quantifiable error rate. FWS000542–43.

Based on the population data obtained by the states, the Service found that "[a]t the end of 2022, there were approximately 2,682 wolves inside the [Northern Rocky Mountains] and 115 wolves outside the [Northern Rocky Mountains] for an estimated total of 2,797 wolves in the western United States." FW000545–46. That number includes roughly 1,000 wolves in both Montana and Idaho, less than 400 wolves in Wyoming, roughly 200 wolves in both Oregon and Washington, roughly 20 wolves in both California and Utah, and 2 wolves in Colorado. FWS000045 n.4; FWS000504; FWS000553–54 (Table 5). While the wolf population in California, Washington, and Oregon is slightly increasing, the population is generally holding stable or slightly decreasing in Idaho, Montana, and Wyoming. FWS000046.

b. Viable Population Thresholds

The record indicates there are multiple ways to quantitatively assess the viability of a species, two of which are reflected in the Service's review of the gray wolf: "quasi-extinction threshold" and "effective population size."[6]

[6] The Service did not determine a "minimum viable population" for the gray wolf. A "minimum viable population" "represents the population size at which society would consider the risk of extinction unacceptably high for any smaller population size or the smallest population size at which genetic diversity can be retained at an acceptable level to avoid inbreeding and maintain evolutionary potential." FWS000585 (internal citations omitted). While some peer reviewers submitted minimum viable population estimates for the gray wolf ranging from 2,261 to 6,000 wolves, *see* FWS000442, the Service "did not attempt to determine a[minimum viable population] for the gray wolf in the Western United States . . .

A "quasi-extinction threshold" "is defined as a situation when extinction is inevitable despite the fact that individuals may still persist in the population." FWS000584 (internal citation omitted). Because small populations can be disproportionately affected by either demographic or environmental factors, it is often more helpful to "select a value above zero against which to compare the projected populations sizes to evaluate the risk." FWS000584. The Service recognized that "[t]here is no widely accepted, established quasi-extinction threshold for gray wolves," FWS000596 (Table 12), but ultimately chose a "quasi-extinction" threshold of five wolves "based on a previous [population viability analysis] . . . that used five wolves as the definition of 'biological extinction.'" FWS000584 (citing a 2015 study); *see* FWS000596 (Table 12).

An "effective population size" considers the "potential risk of inbreeding depression" and therefore "reflect[s] the number of animals successfully reproducing in a population." FWS000585. The values used by the Service "are based on the 50/500 rule, which posits than an 'effective' population size of 50 is needed for avoiding deleterious genetic effects" in the short term, FWS000585, and a population size of 500 is needed "to retain sufficient evolutionary genetic potential in the long term." FWS000435 (citing Franklin (1980)). "Because the

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because [a minimum viable population] require[s] normative (value-based) decisions around acceptable levels of risk," FWS000585.

effective population size is often smaller than census population size, estimates of the ratio between the two measures can be important for assessing a given species' genetic health." FWS000435. The Service estimated that the average ratio of effective to census population for the gray wolf is 17%, with a 95% confidence interval between 12% and 26%. FWS000585. This means that to have an effective short-term population of 50, a census population of 192 to 417 wolves is necessary. FWS000585. Likewise, to have an effective long-term population of 500, a census population of 1,923 to 4,167 wolves is necessary. FWS000436. The Service characterized these estimates as "conservative," however, because "this general rule of thumb assumes populations are isolated[, and w]olves in the Western metapopulation are well connected to each other and to wolf populations in Western Canada." FWS000585. Nevertheless, the Service relied on these threshold values (192 to 417 wolves) in assessing the viability of the gray wolf in the Western DPS in its future modeling. *See, e.g.*, FWS000600–06.

Confusing matters a bit, the Service refers to other population thresholds throughout its analysis. For example, the Service favorably cites the recovery criteria that was used prior to the wolves' delisting in the Northern Rocky Mountains under the 2009 Rule, which set a "recovery goal" of "30 or more breeding pairs comprising a least 300 wolves equitably distributed amongst Idaho, Montana, and Wyoming (therefore, 100 wolves per state) for 3 consecutive years

with genetic exchange . . . between the populations in each of these states." FWS000441–42. The Service also consistently refers to a "management threshold" or a "buffer" of 450 wolves for the Northern Rocky Mountain states, which is comprised of 150 wolves in both Montana and Idaho, 100 wolves in Wyoming, and 50 wolves in Yellowstone National Park/tribal land. *See* FWS000029; FWS000438; FWS000557. These benchmarks reflect the Service's general conclusion that "several hundred [wolves] likely provide for a viable wolf population with a low risk of extinction." FWS000409; *see also* FWS000446.

c. Estimating Future Wolf Populations

The Service performed future modeling to determine the "probability that the [gray wolf] population will fall below [the] critical thresholds" identified above, i.e., thresholds "that represent a key reduction in viability (quasi-extinction) or a potential risk of inbreeding depression (effective population size of 50)." FWS000584; FWS000050; FWS000054. The Service did so by applying a "density-dependent growth model" over a period of 100 years in two different geographic areas: (1) Idaho, Montana, Oregon, Washington, and Wyoming (including Yellowstone National Park) and (2) within the boundaries of the Northern Rocky Mountains (excluding Utah). FWS000563–67; FWS000050.

"Density-dependent growth describes populations in which growth rates are related to population size[,]" and in the case of "negative" growth, which is at issue here, where "population growth rates decrease as a function of population size." FWS000565. Put differently, "negative density-dependent growth describes populations in which growth rates are maximal at small population sizes and decline as populations reach a maximum size, resulting in population plateaus where population size 'levels-off' after an initial growth period." FWS000565. Density-dependent growth is represented by the following equation:

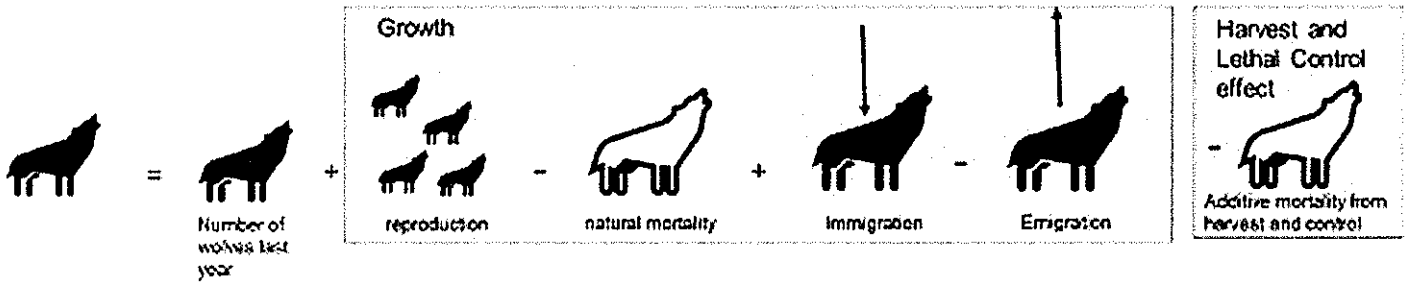

Figure 11. Schematic of density-dependent wolf population model. Arrows indicate direction of movement into (immigration) or out of (emigration) the population.

FWS000566. The portion of the equation highlighted in orange reflects the gray wolf's "intrinsic growth rate." FWS000565–67.

To use this equation, the Service adjusted the "input parameters" to match the relevant information for each state and to correct for known deficiencies. *See* FWS000567–73. For example, given the criticisms of Idaho's space-to-event population estimates, the Service reduced the starting population size for Idaho to reflect a more conservative count. *See* FWS000569; *compare* FWS000553–54

(Table 5), *with* FWS000573 (Table 8). The Service then considered six combinations of future scenarios involving two primary stressors on populations: disease and harvest. FWS000051. The two disease scenarios were: observed disease rates (Disease Scenario 1) and observed disease rates plus a black swan event[7] (Disease Scenario 2). In light of the uncertainty of future harvest amounts, three harvest scenarios were considered: average observed harvest over the last four years (Harvest Scenario 1), maximum past observed harvest, plus 20 percentage points (Harvest Scenario 2), and harvest necessary to reduce the populations in Idaho and Montana to 150 wolves in each state within five years (Harvest Scenario 3). *See* FWS000581 (Table 10); FWS000052.

Using combinations of these scenarios, the Service ran millions of simulations, FWS000598, and found that, at worst, Idaho, Montana, Oregon, Washington, and Wyoming (including Yellowstone National Park) would experience a 64-percent decline in population over 100 years, from a median estimated starting population of 2,621 wolves to a projected population of 935 wolves. FWS000600–01; FWS000054. Similarly, the most negative scenario for the Northern Rocky Mountains showed a 68-percent decline in population over 100 years, from a median estimated starting population of 2,534 wolves to a

[7] A "black swan event" permits forecasters to consider the "effects of a high severity, but low probability, disease outbreak[] on top of . . . past observed rates of disease." FWS000411; FWS000051.

projected population of 829 wolves. FWS000604–05; FWS000054. Accordingly, the Service concluded that:

> even with large increases in harvest in Idaho and Montana (Harvest Scenarios 2 and 3), the wolf population in Idaho, Montana, Oregon, Washington, and Wyoming (inclusive of [Yellowstone National Park]), and the wolf population in the [Northern Rocky Mountains], maintain their ability to withstand stochastic and catastrophic events—albeit at substantially reduced population sizes in Harvest Scenarios 2 and 3—given the assumptions in our model. There were no simulations in which the population size . . . dropped below our quasi-extinction threshold (5 wolves), even considering this increase in harvest. Additionally, there is negligible risk (maximum of 0.02 percent) of these wolf populations falling below our thresholds for an effective population size of 50 (192 to 417 wolves) during our 100-year timeframe under all of the scenario combinations we analyzed, indicating a negligible risk of future inbreeding depression, despite projected decreases in population size. . . . According to our model projections, as long as future wolf population productivity and connectivity remain consistent with past observed data and as long as Idaho and Montana close [their] harvest seasons if their wolf populations fall below 150 wolves, the increases in human-caused mortality that we considered are unlikely to have a meaningful impact on overall wolf resiliency and redundancy in [the modeled areas].

FWS000608. The Service acknowledged, however, that "harvest and lethal depredation control at the rates applied in Harvest Scenarios 2 and 3 would still result in large population declines." FWS000609. For example, under Harvest Scenario 3, "the populations of Idaho and Montana could individually decline by approximately 80 to 90 percent," which "could result in fewer than 100 wolves in each state." FWS000609. However, the Service noted that the high harvest rate in Harvest Scenarios 2 and 3, "while possible, is unlikely." FWS000592.

The Service identified "key uncertainties and assumptions" underlying its modeling, specifically acknowledging that it did not incorporate "changes in the amount of illegal take," "changes in prey availability or suitable habitat," "effects of climate change," "small population effects," and "effects of reduced abundance on genetic health." FWS000586; *see also* FWS000593–97 (Table 12 – Summary of Uncertainties or Assumptions). The Service also assumed that "Idaho, Montana, and Wyoming will all stop legal public harvest when 150 gray wolves or fewer are documented in their respective state," FWS000594, "future, lethal depredation control will occur at the same rate as it currently does," FWS000594, "current rates of illegal take and gray wolf removal for health and human safety stay the same into the future," FWS000595, "connectivity in populations reduced by harvest will be similar to the level of connectivity in populations of the same (smaller) size during the early years of recolonization," FWS000596, and "states will continue to accurately estimate populations and evaluate trends over time so appropriate regulatory adjustments may be implemented," FWS000597.

Finally, after using this "quantitative model to forecast the estimated abundance of wolves under future scenarios . . . , [the Service] combine[d] the outputs of this model (estimated population sizes) with a qualitative evaluation of the gray wolf's adaptive capacity to assess" the viability of the gray wolf in the Western DPS. FWS000418.

C. Current Case

In June 2024,[8] Plaintiffs filed three separate cases challenging the Service's 2024 Finding. Those cases were subsequently consolidated, (Doc. 26), and several entities were given leave to intervene as defendants, including a coalition of hunting organizations (the "Hunting Intervenors"),[9] the state of Utah, and the state of Montana and Montana Department of Fish, Wildlife and Parks ("Montana") (collectively, "Defendant Intervenors"). (Docs. 16, 37, 42.) The state of Idaho was also given leave to file an amicus brief. (*See* Docs. 32, 63.) The parties have all filed motions for summary judgment. (*See* Docs. 52, 54, 56, 64, 70, 74, 75.) A motion hearing was held on June 18, 2025.

Of the conclusions in the 2024 Finding, Plaintiffs do not challenge the Service's determination that the wolves in the Northern Rocky Mountains are no longer a DPS because they are not "markedly separate[]", physically or otherwise, from wolves in the Western United States. *See* 89 Fed. Reg. 8391, 8393–94. Nor do Plaintiffs challenge the Service's determination that the Western DPS is a viable listable entity. *See* 89 Fed. Reg. at 8394. Rather, Plaintiffs challenge the

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[8] Plaintiffs initially brought their challenges in a series of cases filed in April 2024. *See* CV 24-43-M-DWM, CV 24-44-M-DWM. However, the parties stipulated to the refiling of the cases to ensure that there were no jurisdictional defects tied to the 60-day notice, *see* 16 U.S.C. § 1540(g)(2)(C).

[9] Sportsmen's Alliance Foundation, Safari Club International, and the Rocky Mountain Elk Foundation.

Service's "not warranted" finding for the Western DPS, arguing that the Service failed to: (1) consider a "significant portion" of the gray wolf's range by ignoring historical range and discounting both Colorado and the West Coast; (2) consider the best available science on gray wolf population numbers and the impacts of human-caused mortality; and (3) evaluate the threat to gray wolves from inadequate existing regulatory mechanisms. Federal Defendants and Defendant Intervenors (collectively, "Defendants") disagree, insisting that even if the wolf population in the Western DPS declines due to human-caused mortality and state wildlife management policies, it is not threatened or endangered. Defendants also raise threshold arguments, including standing and a putative congressional limitation on judicial review.

II. LEGAL STANDARD

Under the Administrative Procedure Act ("APA"), "courts, not agencies, will decide all relevant questions of law arising on review of agency action—even those involving ambiguous laws—and set aside any such action inconsistent with the law as they interpret it." *Loper Brights Enters. v. Raimondo*, 603 U.S. 369, 392 (2024) (internal quotation marks and emphasis omitted). For agency policymaking and factfinding, the APA authorizes a court to "hold unlawful and set aside agency action, findings and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); *see*

Native Ecosystems Council v. Marten, 883 F.3d 783, 788 (9th Cir. 2018). Agency action is arbitrary and capricious if the administrative record demonstrates that "the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, [or] 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 of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). In a case under Section 4 of the ESA, "[t]he [agency's] explanation must be evidenced from the listing decision itself." *Ctr. for Biological Diversity v. Zinke*, 900 F.3d 1053, 1069 (9th Cir. 2018). Where an agency's administrative record is complete and constitutes the whole and undisputed facts underlying agency decisionmaking, summary judgment is appropriate. *See City & Cnty. of San Francisco v. United States*, 130 F.3d 873, 877 (9th Cir. 1997).

III. STANDING

"To establish standing, a plaintiff must show (1) an injury in fact, (2) a causal connection between his injury and the conduct complained of, and (3) that his injury will likely be redressed by a favorable decision." *Iten v. L.A.*, 81 F.4th 979, 984 (9th Cir. 2023) (internal quotation marks and alteration omitted). At the summary judgment stage, a plaintiff cannot rest on "mere allegations" of standing

but rather "must set forth by affidavit or other evidence specific facts, which for purposes of the summary judgment motion will be taken as true." *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 561 (1992) (internal quotation marks omitted). Defendants raise two standing arguments in response to Plaintiffs' consolidated actions. First, Federal Defendants argue that the Consolidated Plaintiffs in CV 24–97–M–DWM (the "Animal Wellness Action Plaintiffs") fail to demonstrate either organizational or associational standing. Second, Hunting Intervenors argue that Plaintiffs generally lack standing to challenge the status of currently listed wolves, i.e., all wolves located outside of the Northern Rocky Mountains. Ultimately, while one organizational plaintiff, the Center for a Humane Economy, lacks standing, Defendants' other standing arguments are unpersuasive.

A. Animal Wellness Action Plaintiffs

Federal Defendants challenge both the organizational and associational standing of the Animal Wellness Action Plaintiffs. Despite their failure to recognize a major change to the standard governing organizational standing, Federal Defendants' organizational standing challenge has merit. Nonetheless, all but one of the Animal Wellness Action Plaintiffs have associational standing.

1. Organizational Standing

Federal Defendants first argue that Animal Wellness Action Plaintiffs lack organizational standing because they have not shown that they were forced to

"divert any resources from core organizational functions" because of the Service's 2024 Finding. (Doc. 65 at 18 (quoting *Ctr. for Biological Diversity v. Bernhardt*, 2020 WL 4188091, at *5 (N.D. Cal. May 18, 2020)).) Indeed, "organizations may have standing 'to sue on their own behalf for injuries they have sustained.'" *FDA v. All. for Hippocratic Med.*, 602 U.S. 367, 393 (2024) (quoting *Havens Realty Corp. v. Coleman*, 455 U.S. 363, 379 n.19 (1982)). To do so, an organization "must satisfy the usual standards for injury in fact, causation, and redressability." *Id.* at 393–94. However, the Supreme Court recently clarified that it not enough to be an "issue-advocacy organization" that has expended resources advocating against the defendant's actions; rather, the injury to the organization must "directly affect[] and interfere[] with [the organizational plaintiff's] core business activities." *Id.* at 395. Animal Wellness Action Plaintiffs have made no such showing here. To the contrary, in responding to Federal Defendants, Animal Wellness Action Plaintiffs highlight only the injuries and actions of their individual members, not those of the organizations. (*See* Doc. 84 at 5–6.)[10] Thus, Animal Wellness Action Plaintiffs lack organizational standing based on the arguments made and the specific record presented in this case.

[10] In a footnote, Animal Wellness Action Plaintiffs state: "Plaintiffs can provide supplemental briefing on standing if requested. Plaintiff organizations also have standing to sue in their own right." (Doc. 84 at 5 n.1.) This conclusory assertion is insufficient to demonstrate organizational standing.

2. Associational Standing

Federal Defendants also challenge the Animal Wellness Action Plaintiffs' associational standing. "An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Friends of the Earth, Inc. v. Laidlaw Envt'l Servs., Inc.*, 528 U.S. 167, 181 (2000). Only the first requirement, whether members could establish Article III standing in their own right, is implicated here.

Federal Defendants insist that the individual members of these organizations have failed to show injury in fact because they lack concrete future plans to observe wolves and because any injury outside the Northern Rocky Mountains would not be traceable to the 2024 Finding, as those wolves are already listed as endangered under the ESA. Animal Wellness Action Plaintiffs allege their members have suffered a procedural injury, that is their "substantial recreational, aesthetic, and conservational interest" in the survival and recovery of the gray wolf is harmed by the Finding. (*See, e.g.*, Doc. 57-2 at ¶ 8.) To satisfy the injury-in-fact-requirement, a plaintiff complaining of procedural injury "must show that the procedures in question are designed to protect some threatened concrete interest of his that is the ultimate basis of his standing." *Salmon Spawning & Recovery All. v.*

Gutierrez, 545 F.3d 1220, 1225 (9th Cir. 2008) (internal quotation marks omitted). With one exception, the individual members of the organizations comprising Animal Wellness Action Plaintiffs have done so here.

In environmental cases, the injury-in-fact prong "is satisfied if an individual adequately shows that she has an aesthetic or recreational interest in a particular place, or animal, or plant species and that . . . interest is impaired by a defendant's conduct." *Ecological Rights Found. v. P. Lumber Co.*, 230 F.3d 1141, 1147 (9th Cir. 2000) (internal quotation marks omitted); *see Ctr. for Bio. Diversity v. Mattis*, 868 F.3d 803, 816–17 (9th Cir. 2017) ("A 'concrete interest' implicated by a procedural requirement may reflect 'aesthetic, conservational, and recreational' values."). Members of most of the organizations comprising Animal Wellness Action Plaintiffs have submitted declarations establishing their concrete aesthetic, recreational, conservational, scientific, vocational, and/or educational interests in the gray wolf, as well as plans to view such wolves in the wild in the future. (*See* Doc. 57-9 (Animal Wellness Action); Doc. 57-6 (Project Coyote); Doc. 57-7 (Kettle Range Conserv. Grp.); Docs. 57-1, 57-7 (Footloose Mont.); Docs. 57-4, 57-5, 57-6 (Gallatin Wildlife Ass'n).) However, there is no affidavit from a member of the Center for a Humane Economy outlining any individual interest in, or injury resulting from, the loss of gray wolves. (*See* Doc. 57-8 (affidavit of general counsel for the Center for a Humane Economy outlining only organizational

interests).) Federal Defendants are correct that the Center for a Humane Economy fails to show injury on behalf of a member so as to confer associational standing.

Federal Defendants further argue that Animal Wellness Action Plaintiffs located outside the Northern Rocky Mountains cannot show that their alleged injury is fairly traceable to the 2024 Finding because wolves outside the Northern Rocky Mountains are currently protected under the ESA. However, "[a] showing of procedural injury lessens a plaintiff's burden on . . . causation and redressability." *Salmon Spawning*, 545 F.3d at 1226 (citing *Lujan*, 504 U.S. at 572). Consistently, to demonstrate causation, Animal Wellness Action Plaintiffs "must show only that they have a procedural right that, if exercised, *could* protect their concrete interests." *Id.* (internal quotation marks omitted). As for redressability, Animal Wellness Action Plaintiffs "need to show only that the relief requested—that the agency follow the correct procedures—may influence the agency's ultimate decision of whether to take or refrain from taking a certain action. This is not a high bar to meet." *Id.* at 1226–27 (internal citation omitted).

As argued by Plaintiffs and recognized by the Service, viable gray wolf populations outside the Northern Rocky Mountains are directly influenced by the wolves inside the Northern Rocky Mountains. *See, e.g.*, FWS000436 (discussing the importance of connectivity and dispersal for genetic diversity). Gray wolf dispersal capabilities also allow wolf populations to expand and recolonize vacant

habitats, FWS000426, and according to the Service, "[a]s core wolf populations in Idaho, Montana, and Wyoming increased in abundance and range, wolves began to recolonize portions of California, Oregon, Washington, and, more recently, Colorado," FWS000545. The Service has further acknowledged that increased levels of human-caused mortality may decrease wolf dispersal rates. FWS000453. Because this interconnectivity of wolf populations is integral to the Service's listing decision and will, by the Service's own analysis, impact wolf populations outside the Northern Rocky Mountains, Animal Wellness Action Plaintiffs located outside the Northern Rocky Mountains have shown that a listing decision affecting the Northern Rocky Mountains could protect their interests, which would be impacted by changes to the 2024 Finding.

B. Northern Rocky Mountains

Hunting Intervenors have made additional standing arguments, extending Federal Defendants' concern about existing ESA protections to all Plaintiffs (not just Animal Wellness Action Plaintiffs), and arguing that Colorado wolves also have separate protections, as they have been designated as a nonessential experimental population under ESA § 10(j). Plaintiffs' response to this novel argument is lackluster. In a single sentence, Plaintiffs state that they have shown both injury and redressability because wolves remain unprotected inside the Northern Rocky Mountains and that the areas outside the Northern Rocky

Mountains may lose their current protections if the 2022 district court decision challenging the 2020 Rule, *Defs. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812 (N. D. Cal. 2022), is reversed on appeal. Neither argument is particularly compelling. First, Hunter Intervenors do not dispute that individual plaintiffs within the Northern Rocky Mountains have standing. Second, the possible loss of ESA protection based on a future court decision is speculative, especially given the fact that the environmental plaintiffs prevailed at the district court. *See Lujan*, 504 U.S. at 560 (explaining that the injury must be "actual or imminent, not conjectural or hypothetical").

However, as discussed above, other wolves in the Western DPS rely on the Northern Rocky Mountains populations. Hunter Intervenors insist that this argument is a nonstarter because "[t]he record conclusively shows that wolves have for years been dispersing outward from the Northern Rocky Mountains, despite the delisting that has now been in effect for almost 15 years." (Doc. 76 at 29 n.14 (citing FWS000553).) Hunter Intervenors' position lacks nuance. The record indeed shows that wolf populations were improving naturally in the Northern Rocky Mountains over the last decade despite a lack of ESA protections. *See* FWS000553. However, one of the primary triggers of the current petitions and listing review is the fact that "[i]n 2021, the state legislatures of Idaho and Montana each passed legislation intended to decrease the size of wolf populations

in their states to reduce conflicts with livestock and impacts on ungulate populations." FWS000025; FWS000409. Generally, these legislative changes "allowed for the extension of season lengths, an increase in or the removal of individual bag limits, legalization of new harvest methods, and other changes to harvest practices" such as reimbursement programs. FWS000025. The Service recognized that while "uncertainty remains" as to how these regulations will impact harvest rates, it considered a scenario in which the wolf population in each state would go from the existing 1,000 wolves, *see* FWS000553, to 150 wolves, *see* FWS000411–12. And the record shows that the wolf population in the Northern Rocky Mountains is indeed declining. *See* FWS000553.

As discussed above, endemic throughout the Service's decision documents is the assertion that wolves in the Western DPS will avoid extirpation precisely because they have a high rate of connectively and high dispersal rates. *See, e.g.*, FWS000410; FWS000427–28. And, as recognized by Hunter Intervenors, wolves from the Northern Rocky Mountains are largely responsible for repopulating the rest of the Western DPS. *See* FWS000423. Accordingly, Hunter Intervenors cannot reasonably argue that dispersal from the Northern Rocky Mountains is not central to the injury alleged in this case. Accordingly, Hunter Intervenor's standing arguments also fail.

IV. MERITS

Defendants insist that gray wolf populations have thrived under state management since 2009 and that history of success provides a strong foundation for the Service's conclusion that the gray wolf in the Western DPS does not warrant ESA protection in the present. But the state management regimes in Montana and Idaho changed dramatically in 2021, resurrecting many of the management practices and policies responsible for the prior extirpation of the gray wolf from the West. *See* FWS000407. That is the landscape for the Service's listing decision. While Defendants may be correct that the ESA does not protect the general wellbeing of a species, the ESA is not a routine solution for ruinous wildlife management. Here, the Service has found that because the gray wolf population in the Western United States has "recovered" in the eyes of the ESA, it may now once again be reduced to the minimum number of animals required to avoid complete extirpation. The states are happy to oblige. While the Service's conclusion may ultimately square with the text, though not the spirit, of the ESA, Plaintiffs have identified several issues that require further consideration. They are outlined below.

Plaintiffs argue that the Service failed to: (1) consider a "significant portion" of the gray wolf's range by ignoring historical range and discounting both Colorado and the West Coast; (2) consider the "best available science" on gray

wolf population estimates, requirements for genetic diversity, and future modeling; and (3) evaluate the threat to gray wolves from inadequate existing regulatory mechanisms and overutilization. Plaintiffs are largely correct and these challenges are discussed in turn. First, however, Hunter Intervenors unsuccessfully challenge Plaintiffs' ability to proceed with this lawsuit in light of prior litigation and legislation regarding the gray wolf.

A. Congressional Criteria

As mentioned above, this Court set aside the Service's 2009 Rule delisting the gray wolf within the Northern Rocky Mountains. *See Defs. of Wildlife v. Salazar*, 729 F. Supp. 2d 1207 (D. Mont. 2010). However, in 2011, proponents of the 2009 Rule succeeded in delisting the Northern Rocky Mountains gray wolf "through legislation." *All. for the Wild Rockies v. Salazar*, 672 F.3d 1170, 1172 (9th Cir. 2012) (citing Pub. L. 112-10, 125 Stat. 38 (2011)). Through an act of Congress, the Secretary of the Interior was ordered "to reissue the 2009 Rule without regard to the ESA and without judicial review." *Id.* On May 5, 2011, the Service did so. *See* 76 Fed. Reg. 25590 (May 5, 2011).

Under the 2009 Rule, the Service identified "[t]hree scenarios [that] could lead [the agency] to initiate a status review and analysis of threats to determine if relisting is warranted." 74 Fed. Reg. at 15132–33. Those scenarios include:

> (1) If the wolf population for any one State falls below the minimum [Northern Rocky Mountain] wolf population recovery level of 10

> breeding pairs of wolves and 100 wolves in either Montana, Idaho, [or] Wyoming at the end of the year;
>
> (2) if the portion of the wolf population in Montana, Idaho, or Wyoming falls below 15 breeding pairs or 150 wolves at the end of the year in any one of those States for 3 consecutive years; or
>
> (3) if a change in State law or management objectives would significantly increase the threat to the wolf population.

Id.; *see All. for the Wild Rockies*, 672 F.3d at 1175 ("[T]he 2009 Rule does provide standards by which the agency is to evaluate the continuing viability of wolves in Montana and Idaho." (citing the above three criteria)). According to Hunter Intervenors, this Court's review is similarly constrained to assessing whether any of these three criteria have been met. Not so, as the argument is a siren song leading to a frail conclusion.

Although conclusory, Plaintiffs' response to this argument is compelling. First, Plaintiffs state that Congress' directive to reinstate the 2009 Rule "does not limit the Service's obligations to evaluate a new listing petition." (Doc. 85 at 14–15.) Second, they state that "the 2009 rule allows for relisting if changes to state law significantly increase threats. That criterion is met." (*Id.* at 15.) Indeed, the Congressional mandate in 2011 was limited to the issuance of the 2009 Rule itself:

> SEC. 1713. Before the end of the 60–day period beginning on the date of enactment of this Act, the Secretary of the Interior shall reissue the final rule published on April 2, 2009 (74 Fed. Reg. 15123 et seq.) without regard to any other provision of statute or regulation that applies to issuance of such rule. Such reissuance (including this section) shall not be subject to judicial review and shall not abrogate or

> otherwise have any effect on the order and judgment issued by the United States District Court for the District of Wyoming in Case Numbers 09–CV–118J and 09–CV–138J on November 18, 2010.

125 Stat. 38, 150 (Apr. 15, 2011). Plaintiffs do not challenge the 2009 Rule and the final agency action on review here is the 2024 Finding, not the 2009 Rule. But even if this statutory directive extended to the current agency conduct, the Service itself has recognized that a status review is warranted, *inter alia*, in light of the "credible and substantial information that human-caused mortality may be a potential threat to the species in Idaho and Montana." *See* 86 Fed. Reg. at 51859; *see also* FWS000070 (determining that populations in Idaho and Montana "necessitat[ed] further review because these are the states in which the primary threat of increased human-caused mortality is concentrated, given that the legislatures in both states recently passed legislation to increase public harvest opportunities with the stated goal of reducing wolf population size"). Hunter Intervenors' disagreement with that assessment cannot unring that bell.

Accordingly, Plaintiffs' challenge to the 2024 Finding is not circumscribed by the Congressional mandate associated with the 2009 Rule.

B. Range

Under the ESA, a "species," including a "distinct population segment," must be listed as "endangered" or "threatened" if it meets the definition for either status "through all or a significant portion of its range." 16 U.S.C. § 1532(6), (16), (20).

In the 2024 Finding, the Service concluded that the threats to the gray wolf are not sufficient to indicate that the species in the Western DPS is in danger of extinction or likely to become so in the foreseeable future throughout all of its range. FWS000062–69. Plaintiffs' challenges to that conclusion are considered below in the context of the Service's scientific analysis. The Service further determined that the gray wolf in the Western DPS was not in danger of extinction or likely to become so in the foreseeable future within the following four "significant portion[s]" of its range: (1) Idaho; (2) Montana; (3) California, Western Oregon, and Western Washington; and (4) the Northern Rocky Mountains. 89 Fed. Reg. at 8395; FWS000069–75. In accordance with Service policy, the agency considered only "currently occupied range," not "unoccupied historical range or unoccupied suitable habitat." FWS000069 (citing 79 Fed. Reg. 37578 (July 1, 2014)).

Plaintiffs' challenge to the Service's "significant portions" analysis is three-fold. First, Plaintiffs argue that the Service violated the ESA by not considering historical or unoccupied range. Second, Plaintiffs argue that it was error to omit Colorado from the discrete range analysis. Finally, Plaintiffs argue that the Service's conclusion that the West Coast area is potentially significant but not imperiled is contrary to the record evidence. All three arguments have merit.

1. Occupied vs. Historical Range

While the ESA does not define "significant portion of [a species'] range," the Service promulgated a policy interpreting the phrase in 2014. 79 Fed. Reg. 37578, 37609 (July 1, 2014) ("2014 Policy"). Under the 2014 Policy, a species' range is

> considered to be the general geographical area within which that species can be found at the time [the Service] makes any particular status determination. This range includes those areas used throughout all or part of the species' life cycle, even if they are not used regularly (*e.g.*, seasonal habitats). Lost historical range is relevant to the analysis of the status of the species, but it cannot constitute a significant portion of a species' range.

Id. Plaintiffs argue that the Service's interpretation of range, i.e., limiting it to currently occupied range, "conflicts with the text, legislative history, and purpose of the ESA, as well as binding precedent from the Ninth Circuit." (Doc. 55 at 14.) Plaintiffs are correct.

a. Deference and Precedent

In challenging the Service's interpretation, Plaintiffs cite *Defenders of Wildlife v. Norton*, which considered the Secretary's denial of ESA protections for the flat-tail horned lizard. 258 F.3d 1136 (9th Cir. 2001). In *Norton*, the Ninth Circuit held that the phrase "in danger of extinction throughout . . . a significant portion of its range" is "inherently ambiguous." *Id.* at 1141 (citing 16 U.S.C. § 1532(6)). Rejecting both parties' proposed interpretations of the phrase and

turning to legislative history, the Ninth Circuit determined "that a species can be extinct 'throughout . . . a significant portion of its range' if there are major geographical areas in which it is no longer viable but once was." *Id.* at 1145. More specifically, the Ninth Circuit stated that "where, as here, it is on the record apparent that the area in which the lizard is expected to survive is much smaller than its historical range, the Secretary must at least explain her conclusion that the area in which the species can no longer live is not a 'significant portion of its range.'" *Id.* Plaintiffs insist that this more expansive definition of "significant portion" is the correct one and should have been used here.

In response, Defendants note that the 2014 Policy postdates *Norton,* and the new policy was subsequently upheld by the Ninth Circuit. Indeed, in 2018, the Ninth Circuit considered a challenge to the Service's decision not to extend ESA protection to the arctic grayling. *Ctr. for Biological Diversity v. Zinke*, 900 F.3d 1053 (9th Cir. 2018). In that case, the plaintiffs' primary argument was that the Service erred in relying on its 2014 Policy definition of "range" in its "significant portion" analysis for the arctic grayling. *Id.* at 1063. The Ninth Circuit ultimately upheld the 2014 Policy, agreeing with *Norton* that the statutory language is ambiguous but concluding that the Service's interpretation was entitled to *Chevron* deference. *Id.* at 1063, 1067; *see Chevron U.S.A., Inc. v. Natural Resource Def. Council, Inc.*, 467 U.S. 837, 843 (1984) ("[I]f the statute is silent or ambiguous

with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute."); *accord Humane Soc'y of U.S. v. Zinke*, 865 F.3d 585 (D.C. Cir. 2017).

While Plaintiffs acknowledge that the Ninth Circuit upheld the 2014 Policy in *Zinke*, they insist that conclusion is not binding because *Chevron* has since been overruled in *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369 (2024). Indeed, following *Loper Bright*, reviewing courts "under the APA may not defer to an agency interpretation of the law simply because a statute is ambiguous." *Id.* at 413. Rather, "[c]ourts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority," *id.* at 412, by "us[ing] every tool at their disposal to determine the best reading of the statute and resolve the ambiguity," *id.* at 400. Accordingly, there is no question that the 2014 Policy is no longer due any sort of deference merely because the statute is ambiguous. *See id.* at 400–01 ("Perhaps most fundamentally, *Chevron*'s presumption is misguided because agencies have no special competence in resolving statutory ambiguities."). Complicating matters, however, is the precedential power of *Zinke*.

According to Defendants, the Service's interpretation of "range" is binding, not because it is entitled to deference, but because the caselaw upholding it is binding. In *Loper Bright*, the Supreme Court was careful to state that its decision "d[id] not call into question prior cases that relied on the *Chevron* framework. The

holdings of those cases that specific agency actions are lawful—including the Clean Air Act holding of *Chevron* itself—are still subject to statutory *stare decisis* despite [the] change in interpretive methodology." *Id.* at 412. "Mere reliance on *Chevron* cannot constitute a 'special justification' for overruling such a holding, because to say a precedent relied on *Chevron* is, at best, 'just an argument that the precedent was wrongly decided.'" *Id.* (quoting *Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 266 (2014)). "That is not enough to justify overruling a statutory precedent." *Id.*; *see Lopez v. Garland*, 116 F.4th 1032, 1045 (9th Cir. 2024) (affirming agency interpretation previously upheld under *Chevron* review). Nevertheless, there are two reasons *Zinke* does not compel deference here.

First, the "specific agency actions" that were not to be disturbed following *Loper Bright*, i.e., those subject to "statutory stare decisis," 603 U.S. at 412, are construed narrowly. To wit, the "specific agency action" at issue in *Zinke* was an as-applied challenge to the Service's arctic grayling listing decision. Any broader reading of *Zinke* would absurdly perpetuate *Chevron* deference in defiance of *Loper Bright*'s central holding that it is the courts, not the agencies, that must engage in statutory interpretation. While the Supreme Court held that *Loper Bright* did not retroactively undermine prior agency actions that had been fully litigated and executed, that same rationale does not insulate current or future agency action from review under the current law. To the contrary, *Loper Bright* makes very clear

that *Chevron* deference is incompatible with the APA, which requires courts to "decide all relevant questions of law" and "interpret . . . statutory provisions." 603 U.S. at 411 (quoting 5 U.S.C. § 706); *see also id.* at 391 ("The APA thus codifies for agency cases the unremarkable, yet elemental proposition reflected by judicial practice dating back to *Marbury*: that courts decide legal questions by applying their own judgment."). *Zinke* does not prevent this Court from doing so here, in the context of the Service's listing decision for the gray wolf. *See Murillo-Chavez v. Bondi*, 128 F.4th 1076, 1087 (9th Cir. 2025) ("[G]iven *Loper Bright*'s clear instruction that we . . . need no longer defer to the agency's interpretation, we take the Supreme Court to mean that although the holdings of our prior cases in which *Chevron* deference was applied remain precedential until overruled, we are not compelled to use them as analytical building blocks in every case to determine whether [that agency's interpretation is permissible]."); *United States v. Trumbull*, 114 F.4th 1114, 1125–26 (9th Cir. 2024) (Bea, J., concurring) ("For future cases . . . the Court stated: 'Courts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority, as the APA requires.'" (quoting *Loper Bright*, 603 U.S. at 412)).

The absurdity of functionally maintaining *Chevron* deference through precedent is only compounded when one considers the Supreme Court's discussion of *stare decisis* in this context. In refusing to maintain *Chevron* on precedential

grounds, the Supreme Court determined that "*Chevron* defies the [central] command of the APA," *Loper Bright*, 603 U.S. at 398; "*Chevron* turns the statutory scheme for judicial review of agency action upside down," *id.* at 399; "*Chevron* cannot be reconciled with the APA," *id.*; "*Chevron*'s justifying presumption is . . . a fiction[,]" *id.* at 404; "*Chevron* has proved to be fundamentally misguided[,]" *id.* at 407; "*Chevron* is unworkable[,]" *id.*; "*Chevron* has . . . become an impediment, rather than an aid, to accomplishing the basic judicial task of saying what the law is," *id.* at 410 (cleaned up); "all that remains of *Chevron* is a decaying husk with bold pretensions," *id.*; "[r]ather than safeguarding reliance interests, *Chevron* affirmatively destroys them," *id.*; "*Chevron* fosters unwarranted instability in the law, leaving those attempting to plan around agency action in an eternal fog of uncertainty[,]" *id.* at 411; and "*Chevron* accordingly has undermined the very rule of law values that *stare decisis* exists to secure[,]" *id.* (internal quotation marks omitted). This blistering critique of *Chevron*, and its affront to *stare decisis*, leaves little room for continued deference here.

Second, even if *Zinke* provides the 2014 Policy with precedential armor, the Ninth Circuit has intimated that precedent may be reconsidered if the agency's interpretation has otherwise changed. *See Lopez*, 116 F.4th at 1045 (explaining that the court could not reconsider a Bureau of Immigration Appeals' interpretation because the agency "has not promulgated a new interpretation of the statute to

prompt us to reconsider our precedent"). Here, Plaintiffs argue that the 2014 Policy has been undermined by other court decisions, *see Desert Survivors v. U.S. Dep't of Interior*, 321 F. Supp. 3d 1011, 1070–74 (N.D. Cal. 2018); *Ctr. for Biological Diversity v. Jewell*, 248 F. Supp. 3d 946, 959 (D. Ariz. 2017), and by the Service itself, *e.g.*, FWS000069–70; FWS000075. It has. In *Desert Survivors* and *Jewell*, the courts found that the 2014 Policy's definition of "significant" was impermissible because it made the threshold for "significant" concomitant with the extinction threat to the species as a whole, rendering the "significant portion" analysis functionally equivalent to the "all of its range" analysis.[11] *Desert Survivors*, 321 F. Supp. 3d at 1070–74; *Jewell*, 248 F. Supp. 3d at 955–59. As a result, in its species-specific analysis for the gray wolf, the Service did not use the 2014 Policy definition of "significant" but instead explained that significance was assessed based on the extinction threat in the discrete portion of the range at issue. FWS000069–70; FWS000075. Nor was this the first time the Service abrogated the 2014 Policy. *See Defs.*, 584 F. Supp. 3d at 827, 827 n.1 (noting that the Service also used an amended definition of "significant" in its 2020 listing decision and disclaimed future use of that amended definition). This internal repudiation of

[11] Under the 2014 Policy, a portion of a species' range is considered "significant" only if its "contribution to the viability of the species overall is so important that, without the members in this portion, the species" overall would be endangered or threatened. 79 Fed. Reg. at 37,579.

at least part of the 2014 Policy in the context of this particular agency action opens the door to reconsideration under the *Loper Bright* standard. *Cf.* 90 Fed. Reg. 16102, 16103 (Apr. 17, 2025) (Service withdrawing agency definition of "harm" post-*Loper* on the ground that while the agency interpretation had been upheld under *Chevron*, it was not "the best reading of the statutory text"). And, applying that standard here, the Service's interpretation of "range" to mean only "current" or "occupied" range is not the "single, best meaning" of that term in the ESA. *See Loper Bright*, 603 U.S. at 400.

b. Statutory Interpretation

It is well-established that the term "range" in the ESA "is ambiguous as to whether it means current or historical range." *Zinke*, 900 F.3d at 1064–66 (citing 16 U.S.C. § 1532(6), (20); *Norton*, 258 F.3d at 1141; *Tucson Herpetological Soc'y v. Salazar*, 566 F.3d 870, 877 n.10 (9th Cir. 2009). As a result, the Court "may use canons of construction, legislative history, and the statute's overall purpose to illuminate Congress's intent." *Woods v. Carey*, 722 F.3d 1177, 1181 (9th Cir. 2013) (internal quotation marks omitted). Doing so confirms that, as argued by Plaintiffs, the "best" meaning of the term was ascertained in *Norton*. As explained there, the legislative history shows that the "significant portion of range" language was added to the statute "to allow the Secretary more flexibility in her approach to wildlife management" by giving her "discretion to list [an] animal as merely

threatened or to remove it from the endangered species listing entirely while still providing protection in areas where it was threatened with extinction." *Norton*, 258 F.3d at 1144 (internal quotation marks omitted). And, consistent with this intent, the historical management of the ESA shows that species regularly had different listing statuses across different portions of both a species' historical and occupied range. *See id.* at 1145 (collecting listing decisions). As a result, the Ninth Circuit concluded that "a species can be extinct throughout a significant portion of its range if there are major geographical areas in which it is no longer viable but once was." *Id.*

That conclusion is then bolstered by the statutory interpretation discussion in *Zinke*. *See* 900 F.3d at 1063–67. The Ninth Circuit explained that the word "range" appeared three times within the statutory framework of the ESA outside of 16 U.S.C. § 1532(6) and (20). *Id.* at 1065. Of those three uses, the court determined that one provision "does not shed any light on Congress's intent," *id.* (citing 16 U.S.C. § 1533(a)(1)(A)), one supports "interpreting 'range' as meaning historical range," *id.* at 1066 (citing 16 U.S.C. § 1533(c)(1)), and one "provision cuts both ways," *id.* (citing 16 U.S.C. § 1539(j)(2)(A)). The court further stated that the statutory framework of the ESA does not compel the conclusion that "range" means "current range of the species." *Id.* at 1066–67. To the contrary, it noted that "traditional tools of statutory construction provide some support for

interpreting 'range' to mean 'historic range.'" *Id.* at 1066. On balance, *Zinke* lends support to reading "range" to include historical range. That interpretation is also consistent with the dictionary definition of "range," which is "the region throughout which a kind of organism or ecological community *naturally* lives or occurs." *Websters Int'l Dict.*, 1880 (3d. ed. 1986) (emphasis added).

The final thumb on the scale here for interpreting range to include historical range is "the statute's overall purpose." *Woods*, 722 F.3d at 1181. "The [ESA] is a comprehensive scheme with the 'broad purpose' of protecting endangered and threatened species." *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgm't*, 698 F.3d 1101, 1106 (9th Cir. 2012) (quoting *Babbitt v. Sweet Home Ch. of Comtys. for a Great Or.*, 515 U.S. 687, 698 (1995)). According to Congress, "various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untampered by adequate concern and conservation." 16 U.S.C. § 1531(a)(1). As a result, the ESA is meant, in part, "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." *Id.* § 1531(b). The extreme constriction of occupied range for a species such as the gray wolf shows the incongruity between the Service's limited definition of range and the statutory purpose of the ESA. By the 1930s, the gray wolf had been functionally eradicated from the Western United States despite its vast historical

range. *See* FWS000430; FWS000061. Under the Service's interpretation, the Northern Rocky Mountains would not be considered a significant portion of the gray wolf's range at that time. Yet, within forty years, the gray wolf population had been successfully restored in the Northern Rocky Mountains, *see* FWS000431, and that population is now considered the keystone for genetic diversity and connectivity for the gray wolf population across the Western DPS, *see* FWS000423–24, FWS000556.

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.

2. Colorado

Even assuming that the Service's interpretation of "range" was permissible, its analysis was arbitrary and capricious for independent reasons.

As indicated above, the Service analyzed the following four "significant portion[s]" of the gray wolf's range: (1) Idaho; (2) Montana; (3) California, Western Oregon, and Western Washington; and (4) the Northern Rocky Mountains. 89 Fed. Reg. at 8395; FWS000069–75. In determining which areas to consider, the Service

> considered the area's: (1) potential status (i.e., areas where there are elevated threats such that the status may be different than the status of the species throughout its range) and (2) potential significance (i.e., areas that may contribute to the viability of the species because they

> serve a particular role in the life history of the species (such as the breeding grounds or food source for the species), include high-quality or unique-value habitat related to the rest of the habitat in the range, represent a large percentage of the range, or other factors).

FWS000070. Consistently, the Service examined wolves in Idaho and Montana because both states have the largest populations of gray wolves and recently passed legislation to increase wolf harvest. FWS000070. The Service also examined the West Coast states because they have far fewer wolves, so their status could be different, and "the wolves in these states occupy unique ecoregional provinces not otherwise represented in the [Northern Rocky Mountains]." FWS000070. Finally, the Service considered the Northern Rocky Mountains because the petitions asked for a DPS to be relisted in this area. FWS000071. However, the Service did not consider Colorado in its "significant portion" analysis, explaining:

> We did not further analyze smaller portions of the species' range outside of the [Northern Rocky Mountains] (e.g., occupied range within individual states outside of the [Northern Rocky Mountains]) because we determined that they could not be considered significant in light of the small proportion of occupied current range that exists in those individual states.

FWS000070. Plaintiffs argue that the Service's explanation is inadequate and inconsistent with its reliance on Colorado for assuring the future health of the Western DPS. According to Plaintiffs, the Service unreasonably discounted the significance of the Colorado wolf population while at the same time relied on Colorado's contributions to the Western DPS's viability. Such inconsistent

reasoning, "absent explanation, [is] the hallmark of arbitrary action." *Nat. Res. Def. Council v. U.S. Envt'l Protection Agency*, 38 F.4th 34, 51 (9th Cir. 2022) (internal quotation marks omitted). Indeed, the Service must "articulate a satisfactory explanation for its actions," *Motor Vehicle*, 463 U.S. at 43, which was not provided here.

To be sure, Colorado wolves are quantitatively insignificant to the current metapopulation occupying the western United States. As of 2022, Colorado was home to a grand total of two wolves, FWS000008, and only one of the 286 packs in the Western DPS, FWS000047. Yet, as argued by Plaintiffs, the Service consistently touted the importance of Colorado to the future viability of the gray wolf population in the Western DPS:

> Under all of our future scenarios, the number of wolves in California and Colorado will likely increase due to dispersal from neighboring states, the growth of resident packs already in the states, and, in the case of Colorado, a state statute that requires the reintroduction of wolves to the state. This likely future increase in wolf abundance in California and Colorado in the future would further expand the number and distribution of wolves relative to current condition, and would contribute to increased resiliency and redundancy of wolves in the Western metapopulation.

FWS000056–57; *see also* FWS000067 ("Expanding populations in California and Colorado further reduce future extinction risk for the gray wolf in the Western United States."), FWS000068 ("[W]e find that continued population growth and expansion in California and Colorado is likely in the future, which further

contributes to the species' broad distribution and ability to withstand catastrophic events."); *see also* FWS000620. Notably, Colorado is the only state that the Service identified as having occupied range that was not considered in some form in the agency's further analysis of potential significant impacts. *Compare* FWS000005 *with* FWS000070. Because "the agency's own reasoning underscores the significance of [Colorado] to the DPS," *Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 274 F. App'x 542, 545 (9th Cir 2008), more explanation is needed before the Service can discount that significance. *See also Defs.*, 584 F. Supp. 3d at 828 (finding it was unreasonable for the Service to "suggest[] that wolves that contribute to resiliency, redundancy, and representation of gray wolves . . . may not be considered meaningful and thus, do not satisfy the 'significant portion' standard").

That conclusion is bolstered by Plaintiffs' additional argument regarding the experimental population of wolves established in Colorado in late 2023. *See* FWS000041; 88 Fed. Reg. 77014 (Nov. 8, 2023). The Colorado wolf population increased in December 2023, with the translocation of wolves from Oregon. *See* FWS000041; FWS000612. However, the dataset for the 2024 Finding did not include the 2023 recolonization efforts in Colorado. According to the Service, "[g]iven the lag in reporting of wolf population sizes in each state, the current-condition analysis in the [Species Status Assessment] (Chapter 4) only

characterizes the viability of the species through the end of 2022 (the most recent year for which year-end population size counts or estimates were available for every state in [the] analysis area)." FWS000062 (citing FWS000545). While it is reasonable for the Service to bookend its dataset, the Service was aware of the imminent increase to the Colorado population, making it unreasonable for the Service to discount that population solely on quantitative grounds. Indeed, the "lack of demographic data," FWS000609, is countered by the fact that the Service knew the proposed release in Colorado would include "10 to 15 wolves at a 50:50 sex ratio each year during winter for 3 to 5 years," 88 Fed. Reg. at 77021; *see also* FWS005434 (map of anticipated release). Thus, the Service's failure to consider Colorado's imminent population increase in its quantitative conclusion ignored "an important aspect of the problem." *Motor Vehicle*, 463 U.S. at 43.

This analysis may then impact other concerns raised by Plaintiffs. First, Plaintiffs argue that the Service failed to consider the presence of high-quality habitat, specifically two ecoregional provinces in Colorado, which are not present in other states (represented in teal and yellow below):

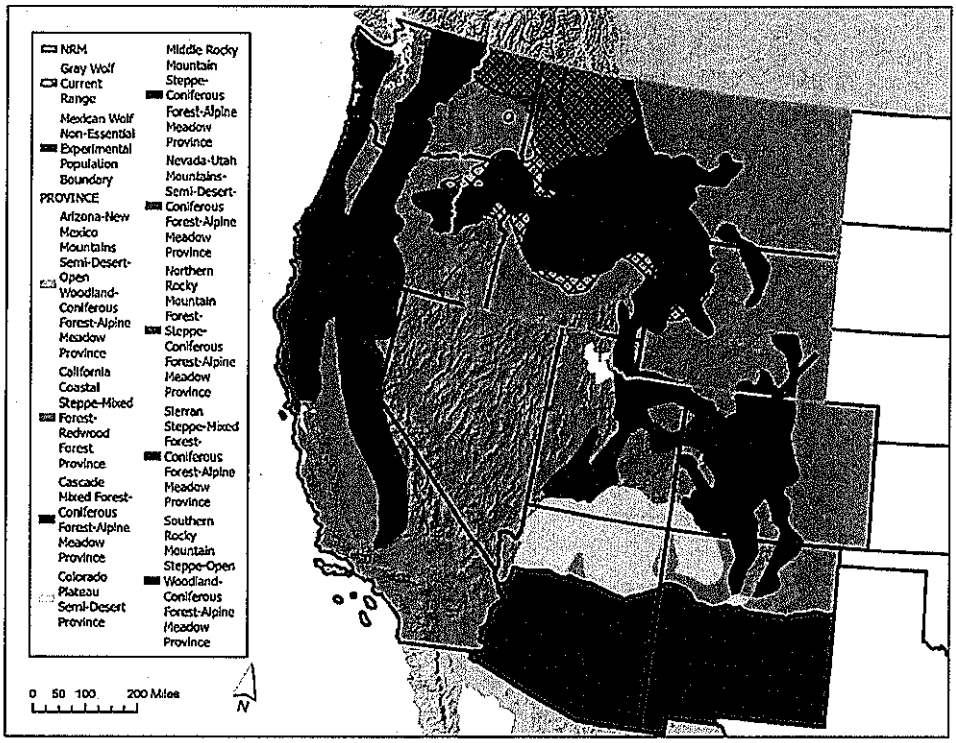

Figure 6. Ecoregional provinces, as defined by Bailey (2016), and the current range of wolves in the Western United States. The NRM is delineated in green. The gray wolf's current range in the Western United States is in the hatched area (this current range is as of December 31, 2022, except California, which is current as of May 2023). The Mexican Wolf Nonessential Experimental Population Area is colored in dark gray.

FWS000049 (Fig. 6); FWS000561 (Fig. 10) (annotated). As noted by Defendants, this argument is currently undercut by the fact that known wolves in Colorado occupy the same ecoregional province as the wolves in Wyoming (depicted in blue with added red arrow). However, if Colorado's experimental population is considered, that population is expected to extend into the "Coniferous Forest-Alpine Meadow Province" ecological region not otherwise widely represented in the Western DPS (depicted in teal above). *See* 88 Fed. Reg. at 77021 (describing release locations); *see also id.* at 77024 (describing millions of acres of "seasonal wolf habitat that contain[s] high ecological suitability and low conflict risk").

Second, Plaintiffs argue that the Service prematurely ended its analysis by failing to consider "status" in conjunction with significance. Plaintiffs insist that "[t]he status of the wolf in Colorado differs from elsewhere across the Western [DPS] because the species has just begun recolonizing the area, and fewer than ten wolves concurrently lived in the state between 2019 and 2022." (Doc. 55 at 29 (citing FWS000553).) Plaintiffs then specifically point to the fact that the Service determined the West Coast states merited future review because they have fewer wolves than other regions in the Western DPS as well. *See* FWS000070 (explaining that the Western States require "further evaluation" because that area "contains substantially fewer wolves than in the remainder of the gray wolf's range in the Western [DPS] and, therefore, the status of wolves in this portion may be different than the status of wolves in the entire Western [DPS]"). As argued by Plaintiffs, this decision appears "internally inconsistent" if "status" truly turns on relative population size. *See Nat'l Parks Conserv. Ass'n v. EPA*, 788 F.3d 1134, 1141 (9th Cir. 2015) ("[A]n internally inconsistent analysis is arbitrary and capricious."). The distinction between Colorado and West Coast states loses even more credibility considering the fact that Colorado is the only place within the Western DPS that has an experimental population. For the West Coast states, the Service found the area "significant" because "the wolves in these states occupy unique ecoregional provinces not otherwise represented in the [Northern Rocky

Mountains] . . . which may contribute to adaptive capacity." FWS000070; *see also* FWS000561 (explaining that "a diversity of ecoregional provinces . . . further contributes to evolutionary potential"). It appears to be true for Colorado wolves once the experimental population was established. *See* FWS000049.

Third, the Service recognized the challenges posed to dispersal caused by Wyoming's predator zone, *see* FWS000612, wherein "wolves may be taken by any legal means year-round and without limit," FWS000494. Although dispersal happens across that zone, it took wolves 25 years to naturally recolonize Colorado. While the Service concluded that the number of Wyoming wolves is not likely to change in the future, FWS000612, it did not explain how that squares with an overall decline in the wolf population in the Northern Rocky Mountains or the potential impact on the Colorado population.

Ultimately, in its single sentence dismissal of Colorado, the Service failed to provide an adequate explanation of why it relied extensively on Colorado's future contributions to the Western DPS while also discounting its significance on purely quantitative grounds. This incongruity coupled with a lack of explanation is arbitrary under the APA. *See Motor Vehicle*, 463 U.S. at 43.

3. West Coast

Plaintiffs further argue that while the Service properly identified the West Coast area as potentially significant, it erred by failing to determine that the wolf

population in the West Coast area is endangered or threatened because of "insufficient connectivity," "small population size," and "historical range loss." (Doc. 55 at 31.) The Service found that "[t]he number of wolves within this portion has been consistently increasing and wolves originating from both within and outside of this area have been recolonizing suitable habitat . . . since 2008." FWS000072. "At the end of 2022, there were a minimum of 107 wolves (32 in these ecoregional provinces in Western Oregon, 57 in the ecoregional province in Western Washington, and 18 in California) distributed between 18 packs and 1 group in this portion." FWS000072 (footnote omitted). "Moreover, all three states have management plans and/or regulatory mechanisms in place with the goal of conserving wolf populations in this area into the future." FWS000072. According to the Service, "the number of wolves in the Western portions of Oregon and Washington will likely remain relatively stable or increase in the future," with expected "expansion of wolf populations into California." FWS000073. As it relates to connectivity, the Service concluded that the wolves in this area "are not an isolated population but are connected to the large and genetically diverse metapopulation in the Western United States and Canada." FWS000073.

Ultimately, Plaintiffs' argument lacks merit insofar as the record shows that wolf populations in the West Coast area are currently growing both in terms of population and genetic diversity. *See* FWS000548–50. The Service also found

that "no available data ha[s] shown discrepancies in genetic diversity between these advancing edges and the source population of the [Northern Rocky Mountains]" or "evidence of inbreeding." FWS000556. Where Plaintiffs' argument has traction, however, relates to the Service's consistent reliance on wolves in the Northern Rocky Mountains to insulate wolves across the entire DPS from extinction threats and its reciprocal reliance on wolves in these areas to prop up adaptive capacity in the Northern Rocky Mountains. *See* FWS000560 ("A metapopulation structure, with subpopulations connected by some level of gene flow, can facilitate increased adaptive capacity because selective pressures may vary among subpopulations."); *see also* FWS000562 (broad population spread protects from disease).

As recognized by the Service,

> wolves at or near the edge of population expansion (e.g., California, Colorado, Western Oregon, or Western Washington) might be affected differently by impacts to connectivity and dispersal in the future. For example, if population reductions in Idaho and Montana were to reduce dispersal to northern California and Western Oregon, those small recolonizing peripheral populations could experience more significant founder effects.

FWS000619. While the Service explained that it "lack[ed] sufficient data to accurately predict specific changes in dispersal patterns in response to potentially increased harvest in Idaho and Montana" and concluded that inbreeding and inbreeding depression in these peripheral areas were unlikely to affect "the larger,

more genetically diverse and well-connected portions of the gray wolf's range in the Western United States," it noted that "there may be specific cases of extirpations of colonizing packs." FWS000619. This conclusion is especially concerning given the fact that, based on current population estimates, there are only 115 wolves outside the Northern Rocky Mountains, FWS000545, and most of those wolves can be traced back to that population, FWS000010; FWS000017.

Accordingly, the Service's determination that the gray wolf in the West Coast area is not likely to be in danger of extinction in the foreseeable future is contrary to evidence in the record, and therefore arbitrary and capricious under the APA. *Motor Vehicle*, 463 U.S. at 43. That incongruity is more concerning in light of the negative implications for connectivity across the Western DPS as a whole, discussed in further detail below.

C. Population, Genetics, and Modeling

An agency's analysis under the ESA is governed by the "best available science" standard, which "require[s] agenc[ies] to consider the scientific information presently available and intended to give 'the benefit of the doubt to the species.'" *Brower v. Evans*, 257 F.3d 1058, 1070 (9th Cir. 2001) (quoting *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)). "An agency complies with the best available science standard so long as it does not ignore available studies, even if it disagrees with or discredits them." *San Luis & Delta-Mendota Water Auth. v.*

Locke, 776 F.3d 971, 995 (9th Cir. 2014); *see Kern Cnty. Farm Bureau v. Allen*, 450 F.3d 1072, 1081 (9th Cir. 2006) ("Without any evidence in the record that [the Service] ignored relevant information, we hold that [the Service] satisfied its duty to base its listing determinations on the best available data."). "[W]here the information is not readily available, [courts] cannot insist on perfection: The best scientific data available does not mean the best scientific data possible." *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 602 (9th Cir. 2014) (cleaned up); *see Alaska Oil & Gas Ass'n v. Pritzker*, 840 F.3d 671, 680 (9th Cir. 2016) (explaining that "underlying research" need not be "ironclad and absolute"). "The standard does not[] . . . require an agency to conduct new tests or make decisions on data that does not yet exist." *San Luis*, 776 F. 3d at 995. Courts "must defer to the agency's interpretation of complex scientific data" so long as the agency "has articulated a rational basis for its conclusion." *Nw. Ecosystem All. v. U.S. Fish & Wildlife Serv.*, 475 F.3d 1136, 1150 (9th Cir. 2007). Nevertheless, an agency "cannot use insufficient evidence as an excuse for failing to comply with the [ESA]." *Brower*, 257 F.3d at 1071.

Here, Plaintiffs argue that the Service failed to use the best available science in assessing both the gray wolf's current population and its future needs. More specifically, Plaintiffs argue the Service: (1) relied on biased and unreliable state population estimates; (2) failed to consider vonHoldt's (2023) findings on genetic

diversity; (3) failed to correctly calculate the necessary effective population; (4) failed to accurately assess the current condition the gray wolf population in the Western DPS; and (5) made unreasonable assumptions in its future forecast modeling. In response, Federal Defendants argue that "Plaintiffs point to no available data that the Service ignored." (Doc. 65 at 37.) While Defendants have the better argument as it relates to vonHoldt (2023) and the Service's assessment of the current condition of the gray wolf, Plaintiffs effectively highlight several problems with the Service's population estimates and future modeling.

1. State Population Estimates

As mentioned above, Montana and Idaho do not use the traditional "minimum count" method for estimating wolf populations; rather, Idaho uses a "space-to-event" model, FWS000540–41, and Montana uses a "integrated patch occupancy model," FWS000542. Plaintiffs argue that the estimates produced by these models are unreliable and therefore are not the "best available science." Although the Service acknowledged these criticisms, it found that the state estimates remain the best available science:

> [S]ome have expressed concern that abundance estimates from unmarked populations in Idaho and Montana may be biased. However, . . . despite these criticisms of the methods used to estimate wolf abundance in Idaho and Montana, currently there are no published estimates of potential bias, if any, for the population estimates reported in Idaho and Montana, just as there are no definitive estimates of bias for minimum counts of wolves in these states. Thus, the best available scientific information does not allow us to determine if correcting the

> estimates for Idaho or Montana above or below their current values is appropriate nor does it provide a clear correction factor. Additionally, there are no alternative estimates of wolf population size in these states produced from different methods. Therefore, the current estimates provided by the states represent the best available science, and thus we rely on these estimates . . . .

FWS000607–08. The Service also conducted a "sensitivity analysis" "to evaluate the effect of uncertainty in the starting population size" on its forecast models. FWS000608; FWS000648–59 (App. 5). The Service concluded that "[c]hanges in the initial population size in Montana and Idaho, within the range of the minimum and maximum values we estimated from observed data, did not result in substantial changes to the projected population size for any scenario." FWS000608. While the Service is indeed correct that the ESA permits reliance on less than perfect data, *see San Luis*, 747 F.3d at 602, and does not require the Service to generate its own data, *see San Luis*, 776 F.3d at 995, the Service must meaningfully account for uncertainty and address substantive criticism from a known and referenced, albeit unpublished, study. The failure to do so was arbitrary and capricious.

a. Idaho's Space-to-Event Population Model

In 2019, Idaho changed its method for estimating statewide wolf abundance to a "space-to-event" model, often referred to as "STE." FWS000478. This model uses trail cameras to measure the encounter rate between wolves and estimate population density. *See* FWS120677–93. According to Idaho, this method is "advantageous because it 1) does not require identification of individual animals;

2) requires only the detection of species, not an accurate count of individuals in the image; and 3) is an instantaneous estimate, therefore, differences in animal movement rates do not bias the estimate." FWS000120684; *see* FWS000540. Yet this approach is "unique," as once the cameras are in place, it "require[s] no additional estimates or assumptions about wolf biology, [but] rel[ies] solely on field sampling data to produce an estimate of abundance." FWS120689.

Plaintiffs concede that this model can be reliable, but emphasize that it depends on several critical assumptions, including, *inter alia*, random camera placement, the use of time-lapse—as opposed to motion-triggered—cameras, and independent detection of animals in both space and time. *See* FWS000541. When these assumptions are not met, the model loses credibility. FWS011141 (explaining that this model is "sensitive to camera placement." (Loonam (2020)); *see also* FWS000541 (Leo (2022) indicating this model may work for wolves but only "provided that . . . model assumptions are met"); FWS000543 ("[W]hen assumptions are violated, as with any modeling technique, results can be biased." (internal citations omitted)). As recognized by the Service, Idaho violates several of these assumptions:

- the cameras are placed non-randomly, FWS000541;
- the cameras take photos when triggered by motion and at fixed time intervals; FWS000541; and

- gray wolves move in packs, making independent observations difficult; FWS000406, FWS000425.

Accordingly, the Service acknowledged that Idaho's model "may result in biased estimates." FWS000543. Idaho has also admitted that the utility of its camera models "is limited, given that neither estimate can determine changes in wolf abundance at small spatial scales that might inform local management action," FWS009497, and that the best way to ensure data is accurate is to use "multiple data streams," FWS120691. Despite these recognized shortcomings, the Service adopted the model anyway, concluding: "currently there are no published estimates of potential bias . . . . Thus, the best available scientific information does not allow us to determine if correcting the estimates . . . above or below their current values is appropriate nor does it provide a clear correction factor." FWS000543.

Plaintiffs insist that Idaho unreliably overestimates wolf populations and that the Service's reliance on the model is arbitrary and capricious for two reasons. First, Plaintiffs point to Ausband (2022), which found that in one out of three years of study, the reported model population was 34% higher than genetic sampling estimates.[12] *See* FWS001206–13. While the Service referenced this finding, it

[12] In its amicus brief, Idaho argues that camera placement was more random than that utilized by Ausband (2022) because they were placed on travel paths, not rendezvous sites. However, Idaho's cited authority does not support that assertion. To the contrary, cameras were placed on paths *at* rendezvous sites. *See* FWS120681; FWS120683; FWS120689.

merely stated that "it is not known how well these estimates from [the space-to-event model] or genetic mark-recapture methods compare to the true numbers of wolves in the areas." FWS000541. As argued by Plaintiffs, stating that the "true number" of wolves is unknown does not grapple with the discrepancy shown by the data. However, Ausband (2022) itself actually explains that the data from that one year may have been the result of an "outlier camera" and that the estimate needed to be adjusted or "bootstrap[ed]" to reflect reality. *See* FWS001210–11. In fact, Ausband (2022) concludes that "[space-to-event] analysis can estimate the abundance of low-density, social species such as wolves," FWS001210, supporting the Service's reliance on Idaho's method here.

Second, however, Plaintiffs argue that by limiting criticism to "published" materials, the Service "evaded addressing a highly relevant report that provided the Service with exactly what the Service said it needed: an estimate of the potential bias in the [] model as a whole." (Doc. 57 at 20.) According to Plaintiffs, that "relevant report" is Creel (2022). *See* FWS005684–700. Creel (2022) challenged the credibility of Idaho's model, finding that it violated seven critical assumptions, is inherently limited in its application to sparse species, such as the gray wolf, and, most importantly, that there was a sample estimate of potential bias of 55 points (+23% versus -32%) for the years 2017 and 2018. *See* FWS005689–91. While conceding that Creel (2022) is unpublished, Plaintiffs point out that the Service

relied on other internal, unpublished papers in its analysis, including the response to vonHoldt (2023), *see* FWS000312–52; FWS000435, and population data from the Wildlife Genetics International, *see* FWS025991–26005; FWS000635, both discussed below. Rejecting this information simply because it is unpublished is therefore internally inconsistent with the Service's reliance on unpublished documentation in other contexts.

The Service's consideration of Idaho's population estimates presents a mixed scientific bag. The Service upheld its obligations under the ESA by fairly representing "the shortcomings of" Idaho's data, *Alaska Oil & Gas Ass'n*, 840 F.3d at 680, which is the only available population data for the state.[13] And the ESA places no duty on the Service "to conduct new tests or make decisions on data that does not yet exist." *San Luis*, 776 F.3d at 995. However, the Service cannot ignore "available studies, even if it disagrees with or discredits them." *Id.* Because it did so here by rejecting Creel (2022) solely on its publication status, the Service failed to comply with the ESA.

b. Montana's Integrated Patch Occupancy Model

According to Plaintiffs, "[t]he Service's consideration of Montana's model suffers from similar flaws." (Doc. 57 at 22.) In 2021, Montana adopted an

[13] Notably, Idaho appears to have switched to a genetic-based population estimate in 2023. (*See* Doc. 63 at 25.)

"integrated" Patch Occupancy Model, which is often referred to as "iPOM." FWS000490. This model combines three separate models to estimate wolf population: an occupancy model estimating wolf distribution, a territory model estimating a wolf pack's mean territory, and a pack size model estimating average pack size. FWS009749–52. Unlike other population models, this approach relies on hunter surveys as opposed to on any direct demographic or population data. *See* FWS000381; *but see* FWS012291 (indicating underlying occupancy model contains direct monitoring information). The authors of the model itself recognize that it is "unique among the various approaches taken to monitor wolves and estimate their abundance." FWS009825. Indeed, Creel (2022) indicated that he was "aware of no examples other than the Montana iPOM suggesting that population size can be estimated reliably in the absence of direct demographic data and/or population counts." FWS0005691.

Given this novel approach, it is unsurprising that Montana's model is subject to criticism. According to Creel (2022), while the "basic logic" of the model is "valid," because it "is a sequence of unrelated models, . . . estimation errors simply compound from one model to the next." FWS005692. As it relates to the estimation of areas occupied by wolves, "detection errors in general, and false positives in particular, can have large effects on estimates of range dynamics and other presence-absence processes." FWS005693. The model also fails to "predict

wolf territory size accurately," which means that it will "systematically overestimate the number of packs that occupy a fixed area, and thus overestimate population size." FWS005696. Finally, the model fails to reflect changes in pack size; for example, "the model predicted that pack sizes remained completely consistent over a period of seven years . . . , a period in which the observed pack mean sizes changed by ~25%." FWS005697. Creel (2022) argues that direct monitoring of wolf populations would be more effective. FWS005697.

Crabtree (2023) is likewise critical of this model. *See* FWS000353–97. According to Crabtree (2023), the model suffers from a 150% overestimation bias. FWS000362–63. Crabtree (2023) attributes this bias to the use of large grid cells and the model's elevation of occupied area over discrete changes in demography (mortality, reproduction, and dispersal). FWS000363–67 ("With [the model], there is a mash-up of statistically non-independent submodels, two of which were originally developed to estimate area, not demographic parameters."). Crabtree (2023) is skeptical that the integrated patch occupancy model can be made reliable, and instead recommends that alternative methods be used, such as hierarchal modeling, capture-recapture models, scat detection, and other "non-invasive techniques." FWS000366–67. As noted by Plaintiffs, peer reviewers were also critical. *See, e.g.*, FWS000281, FWS000278; FWS000287–88.

The Service, however, dismissed both Creel (2022) and Crabtree (2023) in favor of Sells (2023). *See* FWS000542–43; FWS016763–97. Sells (2023) is responsive to Crabtree (2023). *See* FWS000395–97. Specifically, Sells (2023) argues that Crabtree (2023) incorrectly assumed that each grid cell used in the analysis has the same occupancy value and made several other incorrect assertions that have not undergone peer review. *See* FWS000395–96. However, Sells (2023) does not respond to Creel (2022)'s criticisms. *See generally id.* And while the Service acknowledged Creel (2022)'s allegation of bias, it merely responded that "Montana has committed to increase monitoring intensity if harvest and population metrics indicate wolf abundance is significantly reduced," and that there are still "no published estimates of potential bias." FWS000543. In doing so, the Service once again avoided grappling with the substance of Creel (2022)'s criticism. "Just as it is not enough simply to invoke 'scientific uncertainty' to justify an agency action, it is not enough to invoke 'adaptive management' as an answer to scientific uncertainty." *See Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1029 (9th Cir. 2011). The Service failed to comply with the ESA by relying on Montana's wolf population estimates without addressing serious concerns regarding those estimates.

c. Conservative Adjustments and Sensitivity Analysis

Nevertheless, Federal Defendants insist that the Service accounted for possible population overestimations by using conservative population figures for Idaho and running a sensitivity analysis for minimum initial population counts in both states. These analyses do not cure for the issues raised by Creel (2022) and present additional concerns.

As to the former, the Service did not adopt Idaho's year-end population estimates for its future modeling, but rather used the extrapolated population estimate for March, "which represents the annual low point . . . as March is just prior to the birth pulse when populations substantially increase in size." FWS000568. As a result, the Service used a starting population size of 743 for Idaho wolves, *see* FWS000573 (Table 8), not the year-end space-to-event population estimate of 958 wolves, *see* FWS000553 (Table 5). But, while conservative, this starting number is still based on the space-to-event population model and, according to one peer reviewer, "add[s] additional levels of uncertainty into the population estimations." FWS000256. Thus, instead of lending credence to its forecasting, this attempt to adjust for bias—a bias the Service insisted was not subject to quantifiable correction—only seems to make the Service's starting population estimate more arbitrary, not less.

The Service's sensitivity analysis presents a closer question. In response to peer reviewer concerns, the Service performed a sensitivity analysis to determine if

any overestimation in the initial wolf population estimates in Idaho or Montana would impact its future modeling. *See* FWS000648–59 (App. 5). To do so, the Service ran thousands of simulations to determine if a change in starting population had a negative impact on projected population size under a particular scenario. FWS000649. For Idaho, the Service used a starting population range of 596 to 871 (minimum and maximum). FWS000649. For Montana, the Service used a starting population of 1,002 to 1,345. FWS000649. While there were differences in the results under Harvest Scenario 1—between 37 and 44 wolves—all other scenario combinations had "a less than 10-wolf difference between the projected population sizes for the minimum initial population size and the maximum population size." FWS000650. The possibility that the population would fall below the Service's effective population calculation of 192 wolves was zero under any scenario. FWS000650. Thus, for the population range identified, the Service determined that any potential bias in either state's population estimate did not impact the modeling results. FWS000650.

But this analysis presents a whole new set of questions and assumptions. Most importantly, it is not entirely clear where the "minimum" and "maximum" population values were derived from. The Service merely states that they were "estimated from fitting our density-dependent population model to observed data." *See* FWS000648. It seems that "observed data" could be one of two things: the

population data described above or the last minimum count available for each state. Both raise concern. Relying on the state's current population estimates is problematic because that means the sensitivity analysis is derived from the very same data it is meant to correct. And while using the last available minimum count data insulates the sensitivity analysis calculation from any of the aforementioned concerns, it compounds any uncertainties or assumptions applied in the Service's density-dependent forecast model. As the Service explicitly stated, its sensitivity analysis "does not provide an estimate of the potential increase or decrease in the median projected population size if the initial population size . . . in Idaho or Montana were lower than the [identified] minimums or higher than the maximums."[14] FWS000659.

d. Conclusion

Ultimately, the Service failed to use the best available science in violation of the ESA when it relied on Montana's and Idaho's population estimates without addressing the criticisms raised in Creel (2022). While the Service's sensitivity

[14] While the Service is careful to state that it would "not be appropriate" to compare either Idaho's or Montana's current population estimates with the states' prior minimum count estimates, the difference between the estimates in Montana is astounding. The integrated patch occupancy model consistently estimated the annual state wolf population to be twice what it was under the prior estimation method (patch model and minimum counts). *See* FWS000553, FWS000569. For example, in 2014, the prior method estimated there were 554 wolves in Montana while the integrated patch model estimated there were 1,143 wolves. FWS000553.

analysis indicates that errors in the state estimates would not impact the agency's ultimate conclusions as to future wolf abundance, that analysis raises its own concerns. Additionally, neither Idaho's space-to-event model nor Montana's integrated patch occupancy model is well-suited for application on a smaller scale, i.e., an adaptive management level. *See* FWS000542 (explaining iPOM "may not be appropriate for estimating abundance and developing management strategies at a smaller spatial scale"); FWS0009497 (explaining that the utility of the space-to-event model "is limited" as it cannot "determine changes in wolf abundance at smaller spatial scales that might inform local management actions"). This presents a potential issue because the Service's analysis relies heavily on state monitoring and the assumption, discussed below, that these states will stop public harvest if the wolf population drops below 150 wolves. *See* FWS000543.

2. Genetic Diversity

As briefly discussed above, "[a] key component in assessing population viability is the retention of genetic diversity." FWS000435. "Effective population" size is a quantifiable metric that describes how quickly genetic diversity may be lost considering the risk of future inbreeding. FWS000435. "Effective population size refers to the size of an idealized population that experiences the loss of genetic diversity due to genetic drift at the same rate as the population in question; it essentially reflects the number of breeders in a

population." FWS000435. A population with a large effective size loses genetic diversity more slowly than a population with small effective size and is thus able to better maintain genetic diversity over time. FWS000435.

The Service recognizes two standards for genetic retention, the "50/500 Rule" and the "100/1000 Rule". FWS000435. The 50/500 Rule "states an effective population size of at least 50 is needed for an isolated population to avoid inbreeding depression in the short term while an effective population size of 500 is needed for an isolated population to retain sufficient evolutionary genetic potential in the long term." FWS000435 (citing Franklin (1980)). Similarly, the 100/1000 Rule states that 100 individuals are need in the short term while 1000 individuals are needed in the long term. *See* FWS006719–20. But according to the Service, "when data [is] available, a species-specific analysis of population viability is preferrable to these generalized targets." FWS000435 (citing Frankham (2014)).

Additionally, "[b]ecause the effective population size is often smaller than census population size, estimates of the ratio between the two measures can be important for assessing a given species' genetic health." FWS000435. To that end, the Service used a ratio of 17%, with a 95% confidence interval between 12% and 26%, for the gray wolf. FWS000435. This ratio was based on unpublished data from Wildlife Genetics International ("WGI" 2021) out of the Northern Rocky Mountains. FWS000435; *see* FWS025991–26005 (WGI dataset). Applying this

ratio in conjunction with the 50/500 Rule described above, the Service concluded that for an effective short-term population of 50 wolves, a census population of 192 to 417 wolves is required, and for an effective long-term population of 500 wolves, a census population of 1,923 to 4,167 wolves is needed. FWS000435–36. The current estimated census population of 2,797 wolves in Western DPS generally meets both thresholds. *See* FWS000410. And, based on its modeling, the Service concluded that even if Montana and Idaho increased their public harvest to over 65% and a catastrophic level of disease occurred over the next 100 years, there is little to no risk (0.02%) of the wolf population falling below 192 wolves. FWS000054. The Service further emphasized that these minimum numbers, and the 50/500 Rule more generally, assume that populations are isolated, and that because wolves in the Western DPS are not, the threat to their genetic diversity is less than the calculated thresholds. *See* FWS000436 ("Wolves in the Western metapopulation are well connected to each other and also linked to wolf populations in Canada.").

Plaintiffs take umbrage with this analysis, particularly the reliance on what they characterize as the outdated 50/500 Rule, the Service's use of a 17% effective-to-census population ratio, and, even accepting that ratio, the Service's resulting calculations. Plaintiffs also argue that the Service failed to use the best available science in light of the information contained in vonHoldt (2023), which

bears on the above. *See* FWS024549–64. Ultimately, while the Service adequately considered vonHoldt (2023), it failed to explain its reliance on the 50/500 Rule despite the more recent use of the 100/1000 Rule and it failed to consider the "long-term" effective population needed to maintain genetic diversity in its assessment of the future condition of the gray wolf.

a. vonHoldt (2023)

According to vonHoldt (2023), genetic diversity in wolves in the Northern Rocky Mountains has declined over time, meaning that the minimum effective population size should be "on average 5.2–9.4% of census estimates for this species," FWS024549, as opposed to the 12–26% used by the Service, *see* FWS000435. And while gray wolves fall above this size in the short term, "they are below sizes predicted to be necessary to avoid long-term risk of extinction." FWS024549. Plaintiffs argue that because vonHoldt (2023) represents the best available science, the ratios proposed there should have been used here.

In response to vonHoldt (2023), the Service prepared an internal agency memorandum. *See* FWS000312–52. The Service concluded that vonHoldt's findings—declining genetic diversity in the Northern Rocky Mountains and the need for a substantially lower effective-to-census population size—

> are unreliable due to confounding technical issues with the data set. Conclusions related to [the ratio] are additionally unreliable due to the analytical approach used for the effective population size estimates. [The] recommendation remains unchanged since reviewing [vonHoldt

> preprint (2023)]: given these issues with the methods and the data, vonHoldt et al. (2023[]) does not represent the best available science and should not inform the viability conclusions in the [Species Status Assessment].

FWS000312. Specifically, the Service found that "[t]he data set used . . . suffers from two common and related confounding technical issues: high levels of missing data and low sequencing depth for individual samples." FWS000312. Consistently, "decreasing heterozygosity[15] values in the dataset could simply be a function of the increasing amount of missing data in the samples," FWS000314, and "reduced sequencing depth" of those samples, FWS000316. Thus, the Service concluded that "it is inappropriate to conclude that genetic diversity . . . has declined over time in the [Northern Rocky Mountains], as this pattern of decreasing heterozygosity in the dataset is significantly correlated with technical artifacts (i.e., missing data and sequencing depth)." FWS000318. The Service was also critical of the rate of decline of genetic diversity calculated by vonHoldt (2023), finding that it would take 34 generations, as opposed to 8 generations, to see the reduction identified by vonHoldt (2023). FWS000318.

As it relates to the effective population size ratio, the Service likewise concluded that these technical issues would downwardly bias effective population size estimates. FWS000319. The Service also determined that vonHoldt (2023)

[15] *I.e.*, genetic diversity. *See* FWS000318.

used a historical estimator of population size (GONE program) instead of one that assesses contemporary values. FWS000319–20. Thus, according to the Service, the ratio proffered by vonHoldt (2023) is methodologically flawed as it does not accurately reflect the effective-to-census population size for the most recent eight generations, which, when considered properly, results in a ratio closer to 17%, or that used by the agency here. FWS000320.

Plaintiffs argue that the Service's response to vonHoldt (2023) is insufficient because it is based on "an internal memo and unpublished data" that was not peer reviewed. (Doc. 85 at 5.) According to Plaintiffs, the Service missed the mark because the memo "compar[es] apples to oranges" insofar as vonHoldt (2023) "used a newer genotyping methodology" entirely different from the "msats" approach used by the Service. (Doc. 85 at 5–6.) Plaintiffs also argue that the Service used the wrong table from vonHoldt (2023) to assess sequencing depth, which accordingly failed to account for significant data filtering that vonHoldt (2023) subsequently performed. (Doc. 85 at 6.) According to Plaintiffs, the difference between the two approaches is like the Service reviewing a single bank statement to determine a person's monthly income compared to vonHoldt (2023) reviewing 12 months of bank statements to determine the same. Thus, while Plaintiffs concede there may be missing data, they maintain vonHoldt (2023)'s overall picture of genetic diversity is better.

Unsurprisingly, Federal Defendants disagree with Plaintiffs' assessment of the Service's analysis, maintaining that both papers used "genetic markers to estimate genetic variation in the genomes of individuals and populations" and that it was the Service that actually considered a larger and more reliable data set than vonHoldt (2023). (*See* Doc. 88 at 12–16); *see* FWS025991–26005 (WGI dataset). Defendants characterize the difference between the two approaches using the analogy of drilling for soil samples: vonHoldt (2023)'s approach is akin to digging two very deep holes while the Service's approach is like digging many shallow holes that return less data for each hole, but cover a broader area.

Ultimately, because the merits of this scientific debate are beyond the scope of judicial review, agency deference is warranted. Contrary to Plaintiffs' characterization, the Service's internal memorandum addressing vonHoldt (2023) was not simply "an unpublished, unreviewed, personal opinion, elicited by [the Service] in the eleventh hour to back fill [its] foregone conclusion" regarding its listing decision. *Defenders of Wildlife v. Jewell*, 176 F. Supp. 3d 975, 1002 (D. Mont. 2016). The Service had mere months to review vonHoldt (2023) after it was informally publicized in September 2023[16] because there was a "court-ordered deadline to complete the 12-month finding by February 2, 2024." (Doc. 88 at 13

[16] The published version of vonHoldt (2023) was not issued until December 15, 2023. *See* FWS000312.

n.2.) And, after it did so, the agency produced a forty-page analysis that specifically identified technical and methodological anomalies. *See* FWS000312–52; *compare with Jewell*, 176 F. Supp. 3d at 1002 (indicating that the response to the critical study did not include "any scientific evidence directly rebuffing the study's conclusions"). While Plaintiffs disagree with the Service's analysis, "[w]hen specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989). That is the case here. The Service did not fail to use the "best available science" by considering, but rejecting, vonHoldt (2023) based on a rational basis articulated in its internal memorandum. *See Nw. Ecosystem All. v. U.S. Fish & Wildlife Serv.*, 465 F.3d 1136 1150 (9th Cir. 2007) ("Whether the Service was correct to focus on alleles is beside the point; interpretation of complex genetic data falls within the domain of the Service's scientific discretion, to which [courts] must defer so long as the Service has articulated a rational basis for its conclusion.").

b. Effective-to-Census Population Ratio

Plaintiffs maintain that even if vonHoldt (2023) does not apply, there remains a disconnect between the Service's analysis and its conclusions. This argument is itself two-fold. First, Plaintiffs argue that the 50/500 Rule is

antiquated and has been replaced with the 100/1000 Rule. Indeed, as of 2014, conservation professionals have recognized that "50 is inadequate for preventing inbreeding depression over five generations in the wild" and "500 is too low for retaining evolutionary potential for fitness in perpetuity." *See* FWS006714–21. Thus, this threshold "need[s] to be at least doubled." FWS006720. And, under the 100/1000 Rule, a census population of roughly 5,900 wolves would be required. (*See* Doc. 53 at 18.) While the Service explicitly acknowledged the shift to the 100/1000 Rule, it inexplicably went on to calculate effective population under the 50/500 Rule. *See* FWS000435–36. In the absence of explanation, this decision was arbitrary and capricious. While Federal Defendants argue that the 100/1000 Rule was not used because it only applies to isolated populations, (Doc. 65 at 38 (citing FWS006716)), that reasoning was not provided by the agency, *see* FWS000435, and equally undermines the Service's adoption of the 50/500 Rule.

Second, even accepting the Service's use of the 50/500 Rule, Plaintiffs argue that there are not enough wolves to ensure long-term genetic diversity. This argument is also persuasive. While the current estimated population of 2,797 wolves falls within the Service's long-term effective population calculation of 1,923 to 4,167 wolves (the 95% confidence interval between 12% and 26%), FWS000435–36, the Service acknowledged that the "projected population sizes for all Western states modeled largely fall below this threshold range," FWS000621.

Thus, the Service itself recognized that "[t]he projected reductions in population size in all our scenarios indicate wolves in the Western United States may experience some loss of evolutionary genetic potential." FWS000621. Accordingly, the Service recognized that the gray wolf population was not sufficient to ensure long-term viability under its own calculations.

Nevertheless, the Service concluded this was not problematic because "the generalized threshold of an effective population size of 500 for the retention of evolutionary genetic potential is predicated on the assumption of a single, isolated population," which is not the case for the Western DPS. FWS000621. According to the Service, "[t]he assumption of isolation in these general rules of thumb is critical, . . . and creates the need to specifically examine the role and importance of connectivity. Wolves in the Western metapopulations are well connected to each other and also linked to the wolf populations in Canada." *See* FWS000435–36 (footnote omitted); *see also* FWS000027 (explaining that "researchers have concluded that there has been consistent gene flow within and among the [Northern Rocky Mountain] states and Canada, which further supports genetic diversity in the Western metapopulation."); FWS000621–22 (same). Thus, as argued by Federal Defendants, "the Service could not rigidly apply the 100/1000 or the 50/500 rule." (Doc. 88 at 19.) While the parties dispute whether either rule applies to connected populations (as opposed to isolated populations), there is no

dispute that the Service repeatedly used the quantitative thresholds of the 50/500 Rule to bolster its conclusions regarding future viability. And, more importantly, that the Service relied almost exclusively on the short-term estimate of 50, not the long-term estimate of 500, in doing so. "Such selective reliance, without explanation, is arbitrary and capricious." *See WildEarth Guardians v. U.S. Fish & Wildlife Serv.*, ___ F. Supp. 3d ___, 2025 WL 1513125, at *6 (C.D. Cal. May 12, 2025).

Moreover, Plaintiffs argue that the Service's conclusion that qualitative features of the species—i.e., the gray wolf's high dispersal rates and connectivity—make up for its quantitative deficiencies is still problematic because the Service merely assumed that current levels of connectivity and dispersal will continue in the future. *See* FWS000596. Because that argument has merit for the reasons explained below, the Service's conclusion that future viability was met despite the failure to have an adequate long-term effective population is arbitrary and capricious. *See Crow Indian Tribe v. United States*, 965 F.3d 662, 679–80 (9th Cir. 2020) (concluding agency acted arbitrarily and capriciously by, in part, failing to ensure long-term genetic viability of the grizzly bear).

3. Current Condition

Plaintiffs argue that the Service has inaccurately represented the condition of the gray wolf in Western DPS, specifically focusing on the Service's failure to

consider the cumulative threats to wolf abundance posed by a declining population, the existence of small and relatively isolated packs, occupancy of only a small portion of their historical range, and the serious threats of human-caused mortality. In response, Defendants argue that the Service considered these issues and maintain that there are high levels of connectivity and dispersal across the Western DPS and that while populations are declining, they do not face extirpation. Defendants have the better argument, for the present.

Several of the deficiencies in the Service's analysis identified above bear on Plaintiffs' arguments here. For example, reconsideration of the state population counts and a potentially different effective population threshold may impact the Service's determination that the current estimated population is in fact 2,797 wolves and that that population size is sufficient as a matter of species' viability. Setting aside those specific issues, however, Plaintiffs' independent argument that the Service has misrepresented the current status of, and challenges faced by, the gray wolf population in the Western DPS lacks merit. The Service acknowledged that the wolf population across the Western DPS, particularly in the Northern Rocky Mountains, is declining, FWS000546; FWS000025, these wolves only occupy a very small percentage of their historical range, FWS000408, FWS000422, FWS000429–31 (indicating that at the turn of the century, gray wolves "were still absent from over 40 percent of their historical range on the

continent"), and that a majority of the population lives in the Northern Rocky Mountains, *see* FWS000547–50. The Service also acknowledged the significant threat of human-caused mortality, *see* FWS000449–512 ("Human-caused mortality is estimated to account for 60 to 80 percent of all mortalities in the coterminous United States."), explaining that the average human-caused mortality rate is 29 percent, the threshold at which populations remain stable, FWS000024–25. The Service ultimately concluded that "[o]verall, the best available scientific information indicates that the metapopulation in the Western United States remains large and the occupied range has continued to expand despite current levels of human-caused mortality." FWS000554; *see also* FWS000019. While Plaintiffs disagree with that assessment, and that disagreement has some merit as it relates to Plaintiffs' challenges discussed above, the Service accurately represented the current condition of the gray wolf in the Western DPS.

That said, the Service's determination that the gray wolf population in the Western DPS will remain viable despite serious threats of human-caused mortality because wolves have high dispersal rates, high connectivity, and adequate habitat and prey, *see* FWS000406; FWS000409; FWS000443–46; FWS000555; FWS000027; FWS000058, is predicated on the assumptions that "future wolf population productivity and connectivity remain consistent with past observed data and . . . [that] Idaho and Montana close harvest seasons if their wolf populations

fall below 150." FWS000608. Because the Service failed to consider the outlook for the gray wolf if these assumptions were not met, the Service's assessment of the gray wolf's future condition does not fare as well.

4. Modeling Assumptions

Several critical assumptions underly the Service's future population modeling. Plaintiffs argue that the following assumptions are unreasonable or fail to account for recognized uncertainty: (1) the assumption that connectivity will remain constant, FWS000596; (2) the assumption that lawful harvest will cease in Montana and Idaho once the wolf population reaches 150 wolves, FWS000597; FWS000604; (3) the assumption that harvest impacts would not be superadditive, FWS000593; FWS000567; and (4) the assumption that the rate of unlawful take will remain constant, FWS000595. *See also* FWS000608. There is no dispute that the Service acknowledged these assumptions; however, Plaintiffs persuasively argue that it was arbitrary and capricious for the Service to fail to consider the impact on its future predictions if these critical assumptions were not met.

a. Connectivity

One of the primary assumptions underlying the Service's future modeling is that "connectivity in populations reduced by harvest will be similar to levels of connectivity in populations of the same (smaller) size during the early years of

recolonization."[17] FWS000596. This assumption is important because "maintained connectivity" "is a critical component in the maintenance of genetic diversity in wolf populations," FWS000436; FWS000021, and central to the Service's conclusion that the gray wolf "will be able to maintain [its] evolutionary potential and adapt to future change" despite "reduced population sizes," FWS000415; FWS000623. The Service concluded based on its review of numerous studies that "in many cases, wolf populations may be able to avoid or overcome the effects of inbreeding if sufficient population size and connectivity among populations are maintained." FWS000518. And, as discussed above, the Service determined that even if future modeling dropped below effective population thresholds, genetic diversity concerns would be ameliorated by high levels of connectivity. *See, e.g.*, FWS000585.

The record supports the Service's conclusion that there is currently connectivity not only between the subpopulations within the Western DPS, *see* FWS000556; FWS00050, but between the Northern Rocky Mountains and the wolf populations in Canada, FWS000551; FWS000555; FWS000616–17; FWS000027. Less clear is what happens to that connectivity in the face of

[17] According to the Service, "connectivity" in this context "refers to effective dispersal (dispersers that become breeders) among areas with residential wolf packs[] and not to habitat permeability or other possible connotations." FWS000436.

sustained population decline, particularly decline in the Northern Rocky Mountains. While the record indicates that connectivity may not always decline with declining populations, *see* FWS000616–17, the Service recognized that "wolf populations need a sufficient number of wolf packs to support reproduction and connectivity[,]" and that "[i]mpacts to connectivity between wolf packs can scale-up to affect overall genetic diversity, which can affect viability," FWS000434; *see* FWS000027 (recognizing that "inbreeding depression[] can be a significant concern in small populations, with potentially serious implications for population viability"). Indeed, "[p]opulation connectivity, or lack thereof, can substantially affect [population] projections and estimates of genetic diversity over time. Populations that lack connectivity to other wolf populations necessitate more wolves to increase their ability to withstand stochastic and catastrophic events and to ensure genetic health." FWS000445; *see* FWS000280 (peer reviewer indicating that the reliance on connectivity is even more problematic for those populations on the edge of recolonization).

Complicating matters, "it is difficult to predict the specific, perhaps localized effects, on connectivity that future stressors (e.g., increases in harvest) could have." FWS000617; *see also* FWS000619 ("[G]enetic monitoring is likely to be critical for ensuring that genetic diversity remain high and inbreeding remains low in the future, particularly because changes in connectivity can be

difficult to detect and have significant consequences."). While the Service emphasized that a small number of dispersing wolves can have a huge impact on maintaining diversity, *see* FWS000064, the Service's modeling shows that the wolf population may decline by up to 68 percent in the Northern Rocky Mountains and up to 80 or 90 percent in Montana and Idaho, FWS000609, and most of that decline is anticipated to occur in the next five to ten years, FWS000062. *See* FWS000073 (predicting that there will be between 667 wolves and 1,500 wolves in the Northern Rocky Mountains in the next ten years). Indeed, there is already a downward trend in the overall population in the Western DPS. *See* FWS000504. While the Service recognized the existence of uncertainty in this area, it merely assumed that that uncertainty would not fatally undermine its conclusion: "while uncertainty about specific impacts of increased human-caused mortality on dispersal and connectivity makes precise projection difficult . . . , it is unlikely that dispersal would be completely prevented in areas where wolves are currently well-established under any future scenario." FWS000067 (internal citations omitted). But an absence of evidence regarding future connectivity is not the same as evidence of continued connectivity. *See Greater Yellowstone*, 665 F.3d at 1030; *see also* FWS024515 (vonHoldt (2010) opining that human-caused mortality negatively affects connectivity and migration).

Ultimately, while the Service recognized the important role connectivity plays in the Western DPS and the threats posed by reduced abundance, *see* FWS000616–19, the Service failed to consider an important aspect of the problem when it did not address the possibility that connectivity would diminish over the next 100 years. *See* FWS000269 ("[T]he effect of potentially reduced population size on genetic health is not thoroughly addressed or modeled."); FWS000271 ("[I]f all the states are at or near 150 wolves how is connectivity maintained? The models don't address this."); FWS000277 ("The [Species Status Assessment] *assumes* adequate connectivity into the future; the model does not consider outcomes otherwise."). This is especially concerning given the Service's outsized reliance on connectivity to compensate for other threats to the species' continued viability.

b. State Commitments

A second critical assumption made by the Service is that wolf populations in Idaho and Montana will not drop below 150 wolves in each state because the states have committed to closing public harvest at that point. *See* FWS000579, FWS000594. This was based on state commitments to manage wolf populations following delisting under the 2009 Rule. *See* FWS000438 (citing 74 Fed. Reg. 15123, 15132 (Apr. 2, 2009)); *see also* FWS000588. The Service ultimately concluded that "although the number of wolves in Idaho and Montana will decline

in the future," those wolves will not face extirpation "provided Idaho, Montana, and Wyoming cease harvesting wolves if the populations in those states decline to 150 wolves each." FWS000413; *see also* FWS000608.

As argued by Federal Defendants, the record supports the Service's general reliance on the states' commitment because it is enshrined in either state law or the state wildlife management plans, FWS000467–68 (Idaho), FWS000479–81 (Montana), and both Montana and Idaho have proposed management levels above these minimum thresholds: Idaho's management objective is to reduce the state population to 500 wolves by 2028, FWS000467; FWS000030, and Montana is managing its population downward towards a "benchmark" of 450 wolves or 15 breeding pairs, FWS000479; FWS000032–33. And the record shows that states want to maintain a minimum population to prevent relisting of the species under the ESA. *See* FWS000052; FWS00072. However, it was arbitrary to fail to consider the possibility that this assumption may be violated for at least two reasons.

First, as discussed above, it is not clear that either state's model for estimating population size can reasonably be relied upon to enable responsive adaptive management. To the contrary, both the Service and the states recognize that the models are not reactive to localized effects or management. Despite these shortcomings, the Service did not consider whether Montana and Idaho may not be

able to cut off public harvest before a negative population trend has already begun. *See* FWS000277 (peer reviewer opining that "[t]he cessation of harvest may not be addressed until the population has been significantly reduced, intentionally or unintentionally" (citing a situation in Wisconsin when the wolf quota was overshot in a very short time period)). While the Service asserts that the states will increase monitoring if the wolf population drops near these thresholds, it is not only unclear if this will be enough, but also whether those starting population counts are accurate in the first place. It seems that the state management plans will trend precipitously close to threatening the continued existence of the gray wolf in the Western DPS, even if they would not result in immediate extirpation.

Second, as argued by a peer reviewer, applying this assumption before running the model (as opposed to curating the results based on the states' management commitments), undermines the use of a mathematical model in the first place: "using a model suggests that wolf population viability is the outcome of inherent population demography when it is simply state commitments to population minimums." FWS000269. Thus, instead of permitting the model to calculate the "floor" for the future wolf population, the assumption does not reflect what happens to populations at this critical threshold. And, as noted by a different peer reviewer, it appears that the state-specific calculations show that many of the more serious future scenarios will drop the state-level populations below these

minimums in both Idaho and Montana. *See* FWS000277, FWS000660–65. Specifically, the Service calculated a population range between 84 and 687 wolves in Idaho and 50 and 919 wolves in Montana. FWS000071. This indicates that if this assumption is violated, the gray wolf species may be threatened or at risk of extinction. But instead of confronting this information, the Service allowed these state commitments to dictate its model results, permitting the tail to wag the wolf.

In light of the importance of this assumption and the potential consequences if it is violated, the Service failed to consider an important aspect of the problem in assuming that it could rely on these state commitments without considering what could happen if they were breached. The fact that future modeling indicates extirpation is unlikely, *see* FWS000413; FWS000414, does little to mitigate this omission because the assumption is built into the model itself.

c. Superadditive Impacts

Plaintiffs further argue that the Service unreasonably assumed that harvest impacts would not become superadditive; i.e., harvest impacts will either remain compensatory (harvest impacts negated by population growth) or additive (harvest impacts proportional to mortality rate). *See* FWS000593. "Superadditive" effects, on the other hand, are essentially the trickle-down effect of human-caused mortality, meaning "that for each wolf removed through harvest or lethal depredation control[,] more than one wolf is lost from the population due to the

effects of the removed wolf's loss on pack dynamics and future reproductive success and recruitment." FWS000567. While the Service acknowledged that "[s]ome researchers have . . . indicated that increased levels of human-caused mortality may be superadditive through the loss of dependent offspring or future reproductive output . . . , other researchers have noted that evidence for this was weak" and "[s]till others have noted that there was no clear relationship between total human-caused and harvest mortality." FWS000451. Ultimately, the Service found that "in general, as populations grow, expand and approach carrying capacity, their ability to compensate for human-caused mortality increases." FWS000451. However, as highlighted by at least some of the peer reviewers, this conclusion does not account for the impact of potential superadditive effects in small populations, *see* FWS000273, FWS000291; *see also* FWS000300, despite the anticipated decrease in the wolf abundance in the Western DPS. Thus, similar to the assumptions discussed above, the Service did not consider an important part of the problem by failing to consider the possibility there would be superadditive effects caused by the expected reductions in population.

d. Unlawful Take

Finally, Plaintiffs argue that the Service's consideration of unlawful take was unreasonable for two reasons. First, Plaintiffs argue that unlawful take should have been considered in the Service's future modeling. *See* FWS000595. Second,

Plaintiffs argue that it was unreasonable to assume that the current rate of unlawful take would remain the same. *See* FWS000595. As to the first concern, Federal Defendants argue that the Service's model "accounted for illegal harvest" because illegal take was captured in the variable for both intrinsic growth rate (r_{max}) and for combined effects of harvest and control (h). (Doc. 65 at 33.) However, Plaintiffs persuasively argue that even if this information is "baked in" to part of the Service's calculations through these variables, it was not accounted for in the models once the populations reached 150 wolves, i.e., the minimum state commitments. Indeed, there is no evidence that illegal harvest would cease with the cessation of public harvest. Thus, the potential impact of illegal harvest at this critical juncture, when state wolf populations would be at their absolute minimum, was not accounted for. This is despite the fact that illegal harvest is a significant source of wolf mortality. *See* FWS000461 ("Studies estimated that illegal take accounted for 24 percent of all mortalities in the [Northern Rocky Mountains] (annually removing approximately six percent of the known population); however, 12 percent of all documented mortalities were attributed to unknown causes, so it is highly plausible that the number of wolves illegally taken may have been higher."). As to Plaintiffs' second concern, the Service once again decided to hold an important variable constant without analyzing the potential impacts on future populations if it were to change. *See* FWS000595 (merely stating that the rate of

unlawful take is being held constant without explaining why). Given the acknowledgment that illegal take rates are high and may underrepresent take, *see* FWS000461, failing to properly account for, or consider, unlawful take "entirely fail[s] to consider an important aspect of the problem" in violation of the APA. *Motor Vehicle*, 463 U.S. at 43.

e. Conclusion

Ultimately, the Service made numerous important assumptions regarding the future condition of the gray wolf without considering what would happen to the species if these conditions, either cumulatively or in isolation, were to change. That decision was arbitrary and capricious given the outsized reliance on these assumptions to offset reduced wolf abundance in the future, which is a certainty.

D. Regulatory Mechanisms

As one of the five threat factors, the ESA directs the Service to consider whether a species would be imperiled by "the inadequacy of existing regulatory mechanisms" if not listed. 16 U.S.C. § 1533(a)(1)(D); *see also id.* § 1533(b)(1)(A) (requiring consideration of state conservation efforts). According to the Service, "[i]n the Western States, the primary stressor influencing wolf populations is human-caused mortality." FWS000409; *see* 74 Fed. Reg. at 14148 ("We recognize that human persecution of wolves was the primary reason for their wide-spread extirpation across North America."). "The main sources of human-caused

mortality are regulated harvest in Idaho, Montana, Washington, and Wyoming, lethal control of wolves depredating livestock in the [Northern Rocky Mountains], and illegal take." FWS000409; FWS000024. Consistently, the primary method states use to manage wolf populations and achieve their management objectives is through "regulated public harvest." FWS000025; *see* FWS000029 ("It is well recognized that the future conservation of wolf populations depends almost entirely on regulation of human-caused mortality."). Plaintiffs argue that the current state regulatory mechanisms in Idaho and Montana are inadequate to safeguard the gray wolf population and that the Service failed to consider the adequacy of federal regulatory mechanisms. Plaintiffs are generally correct.

1. State Regulations

Beginning in 2011, the states of Montana, Idaho, and Wyoming used an "adaptive management approach to manage wolves with the objective of reversing or stabilizing population growth while continuing to maintain wolf populations above Federal recovery targets." FWS000025. However, "[i]n 2021, the state legislatures of Idaho and Montana both passed legislation intended to reduce the size of wolf populations in their states to minimize conflicts with livestock and impacts on ungulate populations." FWS000409. These legislative changes allowed for, *inter alia*, the extension of season lengths, an increase in or the removal of individual bag limits, legalization of new harvest methods, and other

changes to harvest practices, such as reimbursement programs. FWS000025; *see, e.g.*, FWS000466–73 (summarizing changes in Idaho), FWS000480–85 (summarizing changes in Montana). Plaintiffs argue that these new management regimes threaten the continued viability of the gray wolf populations in the states and are therefore inadequate. In so doing, Plaintiffs: (1) challenge the Service's assumption that states will manage wolves above a certain population threshold; (2) argue that the Service failed to consider the politicized nature of gray wolf management; and (3) argue that the Service failed to consider the loss of state wildlife agencies' discretion under the new statutory regimes. Because Plaintiffs' first argument has merit, their second argument also has traction; however, Plaintiffs are wrong on their third point.

a. State Management Commitments

As discussed above, Montana and Idaho have committed to a minimum threshold population of 150 wolves each. *See* FWS000464. For the reasons discussed above, Plaintiffs persuasively argue that the Service failed to consider the possibility that states could not hold their commitment to a minimum wolf population. This is particularly so in a labile social environment concerning wolves. While new harvest methods do not necessarily equate to increased mortality rates, FWS00025; FWS000473; FWS000485, Montana and Idaho have explicitly committed to dramatically decreasing wolf populations within their

borders, *see* FWS009463 (Idaho explaining objective of reducing population of ~1,200 animals to ~500 animals); FWS012298 (Montana explaining legislative directive to reduce wolf population of over 1,000 animals to minimum recovery threshold of 15 breeding pairs). Although Defendants are correct that state protections need not be concomitant with the protections afforded under the ESA, *see Greater Yellowstone*, 665 F.3d at 1032 ("[W]e recognize that delisting cannot require the imposition of legal protections commensurate with those provided by the ESA itself."), they must be "[]adequate," 16 U.S.C. § 1533(a)(1)(D). Consistently, "[s]tate management plans may be considered adequate regulatory mechanisms, but only if they work." *Crow Indian Tribe v. United States*, 965 F.3d 662, 680 (9th Cir. 2020). Idaho and Montana's respective commitment to manage wolves at an extinction threshold[18] does not meet this requirement as it leaves no room for error in either the states' population estimates or its harvest regulations. Given the concerns identified above regarding these estimates and the Service's acknowledgment of potential bias, there is no reasonable basis to conclude that these state management commitments are adequate to protect the species.

b. Politicization

[18] Even accepting the Service's minimum effective population size of 192 to 417 wolves, *see* FWS000412, these state management thresholds would place the population of the Western DPS precipitously close to the bottom of this range/spectrum. They are also far below the populations required to maintain long-term genetic diversity. *See* FWS000435–36.

Plaintiffs further argue that the Service failed to recognize the polarizing nature of wolf management in Montana and Idaho. Wolf conservation is undoubtedly a politically charged issue. According to Dan Ashe, Former Director of the Service, "States are not operating according to the promise they would professionally manage wolves . . . . Instead, wolves are being treated as vermin and there's been a complete deterioration of the stand[ards] of wildlife management those states pledged to uphold." FWS030845. But the Service did not ignore this issue. In its Species Status Assessment, the Service considered the impact regulatory mechanisms have on illegal take, *see* FWS000461–64, and specifically analyzed the interplay between human-caused mortality and "public attitudes" towards wolves, FWS000463–64. As to the latter, the Service found that "[w]hile not a proximal stressor for wolves, public attitudes regarding wolves can influence the levels of human-caused mortality wolves experience. For example, negative public perceptions of wolves can lead to increased illegal take of wolves or increased motivation to legally harvest wolves." FWS000463. The Service also noted that public attitudes can change. *See* FWS000464. In response, Plaintiffs argue that merely recognizing this issue as a "stressor" is not the same as incorporating it into the Service's population models. According to Plaintiffs, the Service failed to consider an important aspect of the problem by failing to consider "politically motivated, legislative interference with agency discretion and

management authority," (Doc. 57 at 13), which Plaintiffs characterize as a "'manmade factor[] affecting [the gray wolf's] continued existence,'" *id.* (quoting 16 U.S.C. § 1533(a)(1)(E)).

Standing alone, Plaintiffs' argument lacks merit. The Service considered this issue both directly, as outlined above, and indirectly, as outlined with respect to the recent changes to the state regulatory regimes. However, the Service did not consider how these negative public attitudes, undisputedly expressed in the legislative bodies governing Montana and Idaho, would impact the states' commitments to maintain minimum wolf populations. This further undermines the agency's reliance on these commitments to find that the state regulations are adequate to protect the gray wolf in the future.

c. State Agency Discretion

Plaintiffs further argue that the Service failed to adequately consider the fact that the Montana and Idaho legislatures took discretion over wolf management decisions away from the state wildlife agencies. In discussing the state regulatory changes, the Service noted that, in Montana, while some discretion was retained by state wildlife agencies (e.g., extension of seasons, setting of bag limits, use of bait, night hunting), other changes were mandated (e.g., use of snares, reimbursements). FWS000482; *see* Mont. Code Ann. §§ 87–1–901, 87–6–214. The Montana Intervenors agree with the Service's assessment, arguing that while the legislature

has "liberalized methods of take with an overall intent to reduce the wolf population," it "has not eliminated discretion from state wildlife agencies." (Doc. 74 at 18.) Indeed, the Montana Intervenors highlight the fact that the Montana Fish and Wildlife Commission has continued to require a single license per wolf and maintained bag limits.[19] *See* FWS000481–82. Likewise, in Idaho, the Idaho Fish and Game Commission continues to have "discretionary authority to open/close hunting or trapping seasons and set harvest limits on public lands, open/close hunting seasons and set harvest limits on private lands, and set harvest limits for trapping seasons on private lands." FWS000469. Idaho also permits the Idaho Fish and Game Commission to adopt emergency closures or restrictions. FWS000469 (citing Idaho Code § 36-104(b)(3)).

Accordingly, the record does not support Plaintiffs' argument that either discretion has been taken from state wildlife agencies or that the Service failed to consider who may take regulatory actions in these states.

2. Federal Regulations

Finally, Plaintiffs argue that the Service failed to adequately consider federal regulatory mechanisms because while it identified threats from predator controls

[19] While not part of the record in this case, the Montana Fish and Wildlife Commission has proposed increasing the statewide wolf quota from <300 wolves to 500 wolves and allowing individual hunters to take up to 15 wolves per license for the 2025-2026 season. *See* https://fwp.mt.gov/aboutfwp/commission/august-2025-meeting (accessed July 26, 2025).

on grazing allotments, it merely relied on national parks and wilderness areas to provide refuge, and deferred the remaining management responsibilities to the states despite the fact that there is internal agency guidance requiring it to consider management on the National Forest. *See* FWS000526–28. Defendants disagree, arguing it was appropriate for the Service to generally coordinate regulatory control with state agencies and to rely on benefits served by specific types of federal land. Plaintiffs have the better argument.

Federal "lands are primarily managed by the National Park Service, National Wildlife Refuge System, U.S. Forest Service, and Bureau of Land Management (BLM)." FWS000525. These lands cover about 63% of the current range of the gray wolf in the Western DPS, FWS000525, of which 4% is national park land, less than 1% is wildlife refuge land, 52% is Forest Service land, 6% is BLM land, and 21% is wilderness area. FWS000526–28.[20] In considering the existing federal regulatory mechanisms, the Service concluded that national parks and wilderness areas provide refuge for wolves, as hunting and trapping are either prohibited or seriously limited in these areas. *See* FWS000526–28. As it relates to other federal lands, the Service acknowledged that federal land management agencies are required to coordinate with their state counterparts to "develop and implement practices to ensure species do not become federally listed, and to maintain viable

[20] Wilderness areas overlap other federal lands. *See* FWS000528.

populations." FWS000527 (citing U.S. Forest Serv. Manual § 2670.22). It also recognized that there are increased chances for conflict, primarily in areas with grazing leases, which make up approximately 35% of the wolf's current range. *See* FWS000527.

As argued by Plaintiffs, the above analysis is insufficient. While Defendants are correct that the law does not necessarily require protections be adopted in forest management plans, the Service did not outline any existing federal standards or guidelines for wolf management. *Compare with Greater Yellowstone*, 665 F.3d at 1031 (upholding agency action regarding grizzly bear in part because "the Service has pointed to the incorporation of certain . . . standards into the National Park Superintendents' Compendia and National Forest Plans . . . ."). While federal agencies are expected to coordinate with state management agencies in their regulation of wildlife, 16 U.S.C. § 1535(a), mere reference to that coordination is insufficient to show adequate protections are in place on federally managed lands where there is either depredation or harvest is occurring. *See Defs. of Wildlife*, 584 F. Supp. at 832. Nor does the Service address the fact that "[l]ivestock grazing will likely continue on Forest Service, BLM, and other lands (including private lands) resulting in wolf-livestock conflicts. These conflicts will likely continue to result in wolf control efforts in an attempt to reduce the number of livestock killed by wolves." FWS000614.

V. REMEDY

The APA directs that "[t]he reviewing court shall . . . set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Vacatur is the presumed remedy where an agency has acted unlawfully, *All. for the Wild Rockies v. U.S. Forest Serv.*, 907 F.3d 1105, 1121 (9th Cir. 2018), but the district court "is not required to set aside every unlawful agency action," *Nat'l Wildlife Fed'n v. Espy*, 45 F.3d 1337, 1343 (9th Cir. 1995); *see Cal. Cmtys. Against Toxics v. U.S. E.P.A.*, 688 F.3d 989, 992 (9th Cir. 2012) (per curiam) ("A flawed rule need not be vacated."). "Whether agency action should be vacated depends on how serious the agency's errors are and the disruptive consequences of an interim change that may itself be changed." *Cal. Comtys.*, 688 F.3d at 992 (internal quotation marks omitted).

In assessing the seriousness of the error, courts "consider whether vacating a faulty [decision] could result in possible environmental harm." *Pollinator Stewardship Council v. Env't Prot. Agency*, 806 F.3d 520, 532 (9th Cir. 2015). Another consideration is "whether the agency would likely be able to offer better reasoning or whether by complying with procedural rules, it could adopt the same [decision] on remand, or whether such fundamental flaws in the agency's decision make it unlikely that the same [decision] would be adopted on remand." *Id.*

Additionally, courts consider whether the errors are "limited in scope." *All. for the Wild Rockies v. Savage*, 375 F. Supp. 3d 1152, 1156 (D. Mont. 2019).

Here, the Service failed to, *inter alia*, consider historic range in its assessment of whether the Western DPS gray wolf population meets the definition of either "endangered" or "threatened" through "a significant portion of its range." 16 U.S.C. § 1532(6), (16), (20). It also made numerous unfounded assumptions regarding the future condition of the gray wolf despite recognizing either limitations on those conditions or bias in the population estimates utilized. Because these deficiencies are serious and pervasive, they weigh in favor of vacating the portion of the 2024 Finding that determined that the gray wolf in the Western United States does not meet the definition of an endangered or threatened species under the ESA. As it relates to the consequences of vacating the Service's Western DPS findings, because the gray wolf is not currently uniformly listed across the Western DPS and the agency's decision did not alter the current status of the gray wolf, *see* 88 Fed. Reg. at 75508, leaving the 2024 Finding in place provides no greater protection for the gray wolf than that which would exist under vacatur. Likewise, disruption from vacatur will be limited as no additional protections were extended to the gray wolf in the interim. This decision does not alter existing protections for the gray wolf outside the Northern Rocky Mountains. Weighing the pervasiveness of the Service's errors against the limited

consequences of vacatur, remand with vacatur is appropriate. Nevertheless, that vacatur need only be partial, as Plaintiffs did not challenge either the agency's conclusion that the Northern Rocky Mountains DPS is no longer a valid listable entity or that the Western DPS is one.

VI. CONCLUSION

For the foregoing reasons, IT IS ORDERED that JUDGMENT is GRANTED in favor of Plaintiffs and against Defendants and Defendant-Intervenors. The "Endangered and Threatened Wildlife and Plants; Finding for the Gray Wolf in the Northern Rocky Mountains and the Western United States," 89 Fed. Reg. 8391 (Feb. 7, 2024), is VACATED in PART and REMANDED. The 2024 Finding remains in place to the extent that it finds that the Northern Rocky Mountains do not represent a valid DPS for gray wolves and that the Western United States is a valid DPS; it is otherwise vacated.

IT IS FURTHER ORDERED that the Clerk is directed to close the case file.

DATED this 5th day of August, 2025.

10:32 a.m.

Donald W. Molloy, District Judge
United States District Court