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Wellness Action, et al. in Member
Case No. CV-24-97-M-DWM*

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

CENTER FOR BIOLOGICAL
DIVERSITY, et al.,
Plaintiffs,

WESTERN WATERSHEDS
PROJECT, et al.,
Consolidated Plaintiffs,

ANIMAL WELLNESS
ACTION, et al.,
Consolidated Plaintiffs,

v.
U.S. FISH AND WILDLIFE
SERVICE, et al.,
Defendants,

Lead Case
CV-24-86-M-DWM

Member Cases
CV-24-87-M-DWM
CV-24-97-M-DWM

**ANIMAL WELLNESS ACTION, ET AL.'S
BRIEF IN SUPPORT OF PLAINTIFFS'
MOTION FOR SUMMARY JUDGMENT**

and

SPORTSMEN’S ALLIANCE
FOUNDATION, et al.,

Defendant-Intervenors.

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I. INTRODUCTION¹

Over fifteen years ago, in the 2009 rule delisting the Northern Rocky Mountains wolf population, the U.S. Fish & Wildlife Service promised that “if a State changed their regulatory framework to authorize the unlimited and unregulated taking of wolves ... emergency listing would be immediately pursued.” 74 Fed. Reg. 15,123, 15,148 (Apr. 2, 2009). The Service broke its commitment on February 7, 2024, finding that, despite new pressures on gray wolves from state management regimes, Endangered Species Act (“ESA”) protections are unnecessary. 89 Fed. Reg. 8,391, 8,391–95 (Feb. 7, 2024) (“Finding”). In its Finding, the Service denied two petitions for listing and concluded that gray wolves across the western United States are not in danger of extinction, nor likely to become so in the foreseeable future. 89 Fed. Reg. at 8,394–95.

The core threat to gray wolves in the West² is traceable to one root cause: excessive mortality from human killing caused by each state’s inadequate regulatory mechanisms and related hazards, such as dubious population estimates,

¹ Plaintiffs have standing. By denying ESA protections to Western wolves, the Service caused injury to Plaintiffs and Plaintiffs’ members’ interests in wolves there, and a favorable ruling would redress those injuries. *See, e.g.*, Fox Decl.

² Plaintiffs discuss the threats to Western gray wolves because the Service’s Finding recognized that the Western gray wolf is a distinct population segment. 89 Fed. Reg. at 8,394. The briefs of Co-Plaintiffs address the failures in the Service’s consideration of Western wolves’ significant portions of range and population viability, which Plaintiffs incorporate by reference.

heightened lawful and unchecked unlawful take, as well as the newly emboldened “war on wolves” in which politics—rather than science—drives management of wolf mortality. This even though the Service, in its press release announcing the Finding, denounced that “Montana and Idaho [have] recently adopted laws and regulations designed to substantially reduce...wolf populations in their states using means and measures [] at odds with modern professional wildlife management.”³ For this and myriad reasons, the Finding arbitrarily and capriciously denied Western wolves desperately needed protections in violation of the ESA and Administrative Procedures Act (“APA”).

II. DISCUSSION

Under the APA, courts must declare unlawful agency action that is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2). While courts may not “substitute [their] judgment for that of the agency,” they must undertake “a thorough, probing, in-depth review.” *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415–16 (1971); *see also Loper Bright Enterprises v. Raimondo*, 144 S. Ct. 2244, 2261 (2024) (holding judges must decide all relevant questions of law when reviewing agency actions).

³ U.S. Fish and Wildlife Service completes status review and finding for gray wolves in the Western United States; launches National Recovery Plan, U.S. Fish & Wildlife Service (Feb. 2, 2024), <https://www.fws.gov/press-release/2024-02/service-announces-gray-wolf-finding-and-national-recovery-plan>.

While an agency may make scientific judgments within its expertise, it must “articulate a satisfactory explanation for its action, including a ‘rational connection between the facts found and the choice made,’” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983), because otherwise, it has acted arbitrarily and capriciously. *Id.* An agency has also acted arbitrarily and capriciously if it “relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Id.*

The ESA demands that decisions involving whether to list a species must be made “solely on the basis of the best scientific and commercial data available,” 16 U.S.C. § 1533(b)(1)(A), and courts have repeatedly held that failure by the agency to utilize the best available science is also arbitrary and capricious. *See, e.g., San Luis & Delta-Mendota Water Auth. v. Locke*, 776 F.3d 971, 995 (9th Cir. 2014). In making listing determinations, the Service must consider five statutory factors. 16 U.S.C. § 1533(a)(1). These include “overutilization for commercial, recreational, scientific, or educational purposes,” “the inadequacy of existing regulatory mechanisms,” and “other natural or manmade factors affecting [the species’]

continued existence.” *Id.* If a species is threatened or endangered due to any one *or a combination of* these five factors, the Service must list the species. *Id.*

A. Current state regulatory mechanisms are inadequate to safeguard local wolf populations in the Northern Rocky Mountains.

Because gray wolves are delisted in the Northern Rocky Mountains, those states, rather than the Service, have management authority over wolves in their respective jurisdictions. SUF ¶ 55 (FWS0000416; FWS000478). Idaho’s, Montana’s, and Wyoming’s regulatory mechanisms are of critical importance, as gray wolf populations throughout the West rely on the Northern Rocky Mountain wolves source populations. SUF ¶¶ 355 (FWS000281); 9 (FWS000423). For example, Oregon and Washington wolves descend from Northern Rockies wolves, and wolves from Oregon disperse into California. SUF ¶ 9 (FWS000423). Similarly, wolves from Wyoming may disperse into the southern Rockies (SUF ¶¶ 354 (FWS005417); 361 (FWS000612); 365 (FWS000616)), and in turn, a southern Rockies population is necessary for future packs in Arizona and New Mexico (SUF ¶ 332 (FWS014417)). As such, deleterious impacts to Northern Rockies wolf populations will have cascading effects across the western United States. SUF ¶ 355 (FWS000281).

The Service has long recognized that “the future conservation of a delisted wolf population in the [Northern Rockies] depends almost solely on State regulation of human-caused mortality,” 74 Fed. Reg. at 15,166, and over the

decades, the Service’s assessments of state regulatory mechanisms have been a central issue in listing decisions and legal challenges. *See, e.g.*, 74 Fed. Reg. 15,070, 15,103–17, 15,123–25 (Apr. 2, 2009); *Debs. of Wildlife v. Hall*, 565 F. Supp. 2d 1160, 1172–75 (D. Mont. 2008).

In recent years, Montana, Idaho, and Wyoming have changed state regulations “to authorize the unlimited and unregulated taking of wolves” in violation of the Service’s bar for relisting. 74 Fed. Reg. at 15,148. First, statutes now authorize state authorities to remove harvest limits on wolves. Second, states have significantly reduced the allowable wolf population in their states. Third, higher and faster rates of harvest have been made more feasible and have been incentivized through reimbursements. Finally, legislatures have eliminated discretion from state wildlife agencies.

But in its Finding’s Species Status Assessment (“Assessment”), the Service arbitrarily and capriciously mischaracterized, overlooked, and failed to fully account for the impacts of these changes on state regulation and on the species’ viability as a whole. For example, in 2021, Montana passed several bills targeting wolf management. SUF ¶ 107 (FWS000481). The Service acknowledged that these bills (1) directed Montana’s wildlife agency to reduce the state wolf population to fifteen breeding pairs; (2) expanded harvest seasons; (3) legalized reimbursements for wolf “harvest” costs; and (4) eliminated restrictions on wolf take, such as bag

limits, use of bait, and nighttime hunting with night scopes and artificial lights on private land. SUF ¶¶ 91 (FWS000487; FWS000481); 108 (FWS000481); 110 (FWS012298). The Service mischaracterized the new statutory provisions as having “*authorized* the use of snares” (SUF ¶ 108 (FWS000481) (emphasis added)), but the new provisions *mandate* that Montana “must allow” snares. SUF ¶ 109 (FWS012302). Moreover, pursuant to this legislative directive, Montana prepared a new wolf management plan in 2023, setting the state’s population objective at 450 wolves, a more than one-half reduction from Montana’s then-population of 1,100 wolves. SUF ¶ 121 (FWS012298), 111 (FWS012298).

Idaho, too, passed a bill in 2021 that reshaped state wolf management. SUF ¶ 137 (FWS000468). In its Assessment, the Service acknowledged that Idaho’s bill (1) legalized year-round trapping and use of bait on private property; (2) legalized the use of vehicles and dogs to “harvest” wolves and removed all weapons restrictions; (3) authorized nighttime hunting; (4) required limitless wolf hunting permits; and (5) authorized private parties to enter into contracts with the state to kill wolves. SUF ¶ 138 (FWS000468; FWS000474–75). The Service also acknowledged that Idaho newly expanded reimbursements for costs related to wolf harvest and funneled public funds into the reimbursement program, and paid bounties for certain kills. SUF ¶ 90 (FWS000469). And, like Montana, Idaho’s wildlife agency finalized a new wolf management plan in 2023, with the objective

to reduce the state’s wolf population from 1,337 wolves, SUF ¶ 278 (FWS109661–62), to 500 wolves by 2028, SUF ¶ 131–33 (FWS000029–30). However, the Service failed to consider that the Idaho law expanded authorization to kill wolves from instances of depredation to include state-sponsored killing designed “to maintain a balance of all wildlife populations”—an astonishing expansion of lethal wolf control. *Compare* Idaho Code Ann. § 36-1107 (West 2021) *with* Idaho Code Ann. § 36-1107 (West 2019). This provision effectively functions to permit state-sponsored killing of wolves even when wolves are engaged in natural predatory behaviors.

Finally, in 2022 Wyoming set its wolf harvest objective to maintain a total state-wide population of 160 wolves.⁴ SUF ¶ 99 (FWS027599; FWS000457).

While the Service acknowledged these changes, it failed to fully account for foreseeable population impacts. For example, with the above-described liberalization of take methodology, higher and faster rates of harvest per hunter are more feasible. A peer reviewer of the Assessment explicitly identified this complete failure to discuss “possible impacts from use of dogs [for hunting].” SUF ¶ 142 (FWS000261). Per the reviewer, in Wisconsin, “hunters harvested 188 wolves in 4 1/2 days, and caused the state to exceed its harvest goal by 83% . . .

⁴ See brief of Co-Plaintiff Center for Biological Diversity, et al., for discussion of Wyoming’s impact on southern Rockies wolves.

use of dogs can result in very rapid and effective harvest of many wolves in a short period of time.” SUF ¶ 142 (FWS000261).

Likewise, Idaho reported that trapping has surpassed hunting as the preferred method of wolf “harvest”: from 2019 to 2021, trapping harvest increased 91% while hunting harvest increased only 18%, when compared to the three preceding years. SUF ¶ 150 (FWS009481). Further, according to Idaho, the rate of trapping success (25%) is 8,300% times the rate of hunting success (0.3%). SUF ¶ 152 (FWS009480). Given the high success rates of trapping relative to hunting, the rapid recent growth of trapping, and the recent authorization of bait and year-round trapping, basic logic reasons that Idaho’s wolf population could undergo unpredictable and rapid drops from localized spikes in trapping harvest. Yet the Service entirely failed to address this risk, too, in its Assessment.

In all of this, a common threat to wolves emerges: politically motivated, legislative interference with agency discretion and management authority. There can be no doubt that the Service acted arbitrarily and capriciously in failing to consider this important impact of the problem. In this, they failed, too, to adequately assess a “manmade factor[] affecting [the Western gray wolf’s] continued existence,” 16 U.S.C. § 1533(a)(1)(E), in violation of the ESA and APA.

While the Service generally acknowledged the role of public attitudes towards wolf management, SUF ¶ 86 (FWS000463), it failed to assess political

trends *as they relate to regulatory changes*, and *as they may inform future predictions*. The Service ignored peer review criticizing the Assessment for “not adequately address[ing] the fact that state wolf management is determined by the political and social perspectives of the present [state] administration[s] creating the rules ...rather than by the best science available. This is a significant stressor that needs to be addressed.” SUF ¶ 88 (FWS000276).

That Montana’s bills were designed to be legislative coups of agency authority is on the record. *See, e.g.*, SUF ¶ 113 (FWS123095); *see also* SUF ¶ 115 (FWS030835); ¶ 112 (FWS126431) (statement of senator regarding Montana wildlife generally). Meanwhile, Idaho’s wildlife agency opposed the 2021 bill for “represent[ing] a significant downside to the state’s ability to manage our wildlife responsibly.” SUF ¶ 139 (FWS121830). Numerous hunting groups formally opposed the bill for the same reason. *See, e.g.*, SUF ¶¶ 140 (FWS121830–31); 141 (FWS121829–30).

The heightened politicization of gray wolves is also supported by recent scientific literature. *See, e.g.*, SUF ¶ 84 (FWS005921–22). The skyrocketing rates of unlawful wolf take reported by Oregon and Washington, SUF ¶ 64 (FWS014940; FWS014928; FWS014889; FWS014901; FWS014915); 71 (FWS024940, FWS024959; FWS024910; FWS024864; FWS014901; FWS024813; FWS111434), similarly suggest heightened hostility towards wolves.

Given that unlawful take is difficult to uncover, SUF ¶ 193 (FWS000461), poaching rates in the Northern Rockies could be skyrocketing, too, but remain uncaptured by those states' flawed population estimates. The Service acknowledged that illegal take could account for 24% of all wolf mortality in the Northern Rockies, though it is "highly plausible" that the true number is even higher. SUF ¶ 194 (FWS000461).

According to retired wolf management experts, wolves have now become a "political football." SUF ¶ 85 (FWS017891). And former Director of the Service Dan Ashe himself said that the tenor of politics in the Northern Rockies has radically changed recently, and these states have broken their promises regarding wolf management. SUF ¶ 84 (FWS030845). "This isn't about wolves," Ashe said: "It's just politics. People want to be mad at the federal government and wolves have become their abused dog to kick and they are kicking it hard." SUF ¶ 84 (FWS030846).

The Service (and this Court) must anticipate the possibility that these states' commitments to keep wolf populations at so-called "sustainable" levels will fail. This would not be mere "speculation," *see Defs. of Wildlife v. Hall*, 565 F. Supp. 2d 1160, 1170, 1172–73 (D. Mont. 2008), especially given Idaho's and Montana's dubious population estimates (*see infra* at 18–25). Even if wildlife staff within these agencies plan for different outcomes, decisions regarding Northern Rocky

Mountain wolf management are no longer in state agencies' hands and may become even less so in the future. Yet the Service, while acknowledging "public attitudes" as a "factor," failed to adequately assess the risks political machinations and trends pose to Western wolves.

B. The Service's future population modeling makes artificial and unscientific assumptions in violation of the APA and the ESA.

The single most damning flaw in the Service's treatment of state-level wolf mortality is the Service's assumption infecting the entire Assessment that it is fundamentally impossible for any single state's wolf population to dip below 150 wolves. This assumption relies wholly on Montana's, Idaho's, and Wyoming's commitment to halt recreational wolf harvest before its respective wolf populations drop below 150 wolves. SUF ¶ 2019 (FWS000413; FWS000594). In other words, the Service incorporated a per-state, 150-wolf minimum as an *inviolable* assumption for the Service's predictive models. The assumption is so absolute it is immune to variations in harvest levels (SUF ¶ 211 (FWS000415)), uncertainty in dubious population numbers (SUF ¶ 274 (FWS000354)); heightened unlawful unknown take (*see, e.g.*, SUF ¶ 193–95 (FWS000461)); legislative machinations hampering the ability of state agencies to manage wolves above 'sustainable' levels; and anti-wolf political sentiment paving the way for all of the above and more (*see, e.g.*, SUF ¶ 88 (FWS000276)). This assumption is so egregious that peer reviewers determined the Service's population models to be unnecessary,

“superfluous,” and “misleading” (SUF ¶ 210 (FWS000269)); premised on invalid assumptions (SUF ¶ 210 (FWS000277)); and not a scientific projection but merely an “artefact of a model assumption” (SUF ¶ 210 (FWS000273)).

Further, the Service’s models did not assume that any state halts *all* human-caused wolf mortality once the 150-wolf limit is reached; only cessation of public harvest is assumed,⁵ but depredation-related mortality would continue. SUF ¶ 209 (FWS000594). As a result, even if the Service *could* predict with 100% certainty that each state will effectively cease public harvest of wolves once populations reach 150-wolf levels, the 150-wolf floor would nevertheless remain a figment of the Service’s imagination—*for wolf mortality would continue to occur below it*. Most worrying, the Service’s own predictive models demonstrate that populations drop rapidly and precipitously to this 150-wolf per-state floor within less than a decade. SUF ¶ 205 (FWS000602) (depicted below); 208 (FWS000606).

⁵ Itself an unreasonable conclusion, and even more so given Wisconsin’s example, where the state exceeded its harvest limit by 99 wolves in a short period of time. *See supra* at 12.

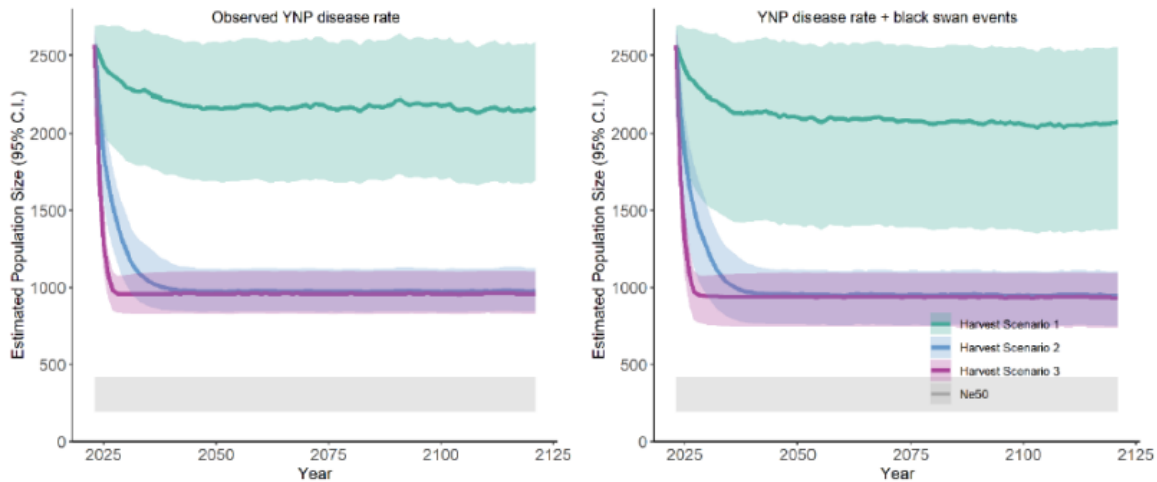


Figure 16. Median projected wolf population size (solid line) and 95% credible interval (shaded area) in Idaho, Montana, Oregon, Washington, and Wyoming (inclusive of YNP) in Harvest Scenario 1 (green), Harvest Scenario 2 (blue), and Harvest Scenario 3 (pink) for the 100-year timeframe of our simulations. The shaded gray box represents the range of estimated wolf population sizes (192–417 wolves) we calculated to be equivalent to an effective population size of 50.

The Service’s assumptions in these models not only fail to use the “best available science,” but fail to apply any science. The Service acted arbitrarily and capriciously in relying on these assumptions and by ignoring the best available science. Indeed, the Service’s failure to consider all peer reviewers’ critiques is “so implausible that it could not be ascribed to a difference in view or the product of agency expertise,” and “entirely failed to consider an important aspect of the problem,” *State Farm*, 463 U.S. 29, 43. See also *Trout Unlimited v. Lohn*, 645 F. Supp. 2d 929, 950-54 (D. Or. 2007) (holding model was not best available science where peer reviewers questioned not only results but also model’s “core assumption”).

C. The Service arbitrarily and capriciously adopted unreliable wolf population estimates from Idaho and Montana.

Reliable population estimates are fundamental to proper wolf management. SUF ¶ 243 (FWS017890; FWS000282). Management decisions, such as how many wolves can be killed without adverse impacts to ecosystems and populations, depend on reliable estimates. SUF ¶ 243 (FWS017890; FWS000282).

1. Idaho’s Space-to-Event Population Model

In 2019, Idaho changed its method for estimating statewide wolf numbers to a “space-to-event” (STE) model. SUF ¶ 277 (FWS000478). This model uses trail cameras and statistical analysis to estimate population size. SUF ¶ 280 (FWS120679; FWS120681–84; FWS120689). Literature cited by the Service suggests that this can be a reliable method—but only when critical assumptions, such as random placement of cameras, fixed intervals between photographs, and independent animal movement, hold. SUF ¶¶ 282–91 (FWS000540; FWS010929–39; FWS005686–91; FWS011139); 297 (FWS000543). When these assumptions are violated, the model loses credibility. *See, e.g.*, SUF ¶ 291–92 (FWS011139–42; FWS119648–49). The Service acknowledged, as does Idaho itself, that Idaho’s STE model violates multiple such critical assumptions. SUF ¶ 294 (FWS019413; FWS000406; FWS000425; FWS000541).

Despite acknowledging these flaws in Idaho’s method, the Service nevertheless adopted Idaho’s population counts wholesale. The Service states that

“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.” SUF ¶ 298 (FWS000543) (emphasis added). The Service’s reasoning fails, and therefore is arbitrary and capricious, for three reasons.

First, in a published study of Idaho wolf populations, Ausband et al. (2022) found that, in one out of the three years of the study, the STE model’s estimate of wolf abundance was 34% higher than estimates derived from genetic sampling. SUF ¶ 292 (FWS119648–49). The Service dismissed this statistic by commenting that “it is not known how well these estimates from STE or genetic mark-recapture methods compare to the *true numbers* of wolves in the areas Ausband et al. (2022[...]) studied.” SUF ¶ 293 (FWS000541). (Emphasis added). This logic—that because the “true number” of wolves is unknown, modeling methods cannot be assessed for accuracy or precision—must fail, because it could be applied to *any and all* wolf population estimates.

Second, by couching its determination of “best available science” as anything “published,” without regard to publication stage, methodology, or scientific support, the Service evaded addressing a highly relevant report that provided the Service exactly what the Service said it needed: an estimate of potential bias in the STE model as a whole.

The critique is reflected in Creel (2022), which was unpublished at the time of the Assessment, but available to the Service. SUF ¶ 261 (FWS000543; FWS000699). Creel challenged the credibility of Idaho’s STE model extensively, arguing that (1) the model violated six different “critical assumptions,” (2) STE is an inherently limited approach for sparse species such as wolves and is better suited to common species; and (3) additional unrelated flaws including extrapolation error and a large hole in data due to wolf elusiveness. SUF ¶¶ 288 (FWS005689–91). Most importantly, Creel set a sample estimate of potential bias, using the years 2017 and 2018, at a difference of 55 points (+23% versus -32%). SUF ¶ 290 (FWS005691).

The Service mounted no serious defense to Creel’s criticisms, instead relying on its unpublished nature to dismiss it. *See, e.g.*, SUF ¶ 297 (FWS000543). However, the Service’s dismissal of Creel for not yet being published is internally inconsistent with the Service’s reliance on an unpublished and un-peer-reviewed report from Wildlife Genetics International, as well as the Service’s own un-peer-reviewed analysis of said report, to support its Finding that the Western gray wolf is sufficiently genetically healthy (despite literature to the contrary). *See* SUF ¶ 213 (FWS000435; FWS000635–39). Internal inconsistency of an agency “is, absent explanation, the ‘hallmark of arbitrary action.’” *Nat’l Parks Conservation Ass’n v. EPA*, 788 F.3d 1134, 1145 (9th Cir. 2015) (citation omitted).

2. Montana’s integrated Patch Occupancy Model (iPOM)

The Service’s consideration of Montana’s model suffers from similar flaws. In 2021, Montana adopted an “integrated” Patch Occupancy Model (“iPOM”). SUF ¶ 144 (FWS000490; FWS012259). Put simply, Montana’s iPOM combines three separate models—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—to arrive at an estimated number of wolves in the state. SUF ¶ 245 (FWS009749–51); *see also* SUF ¶ 245 FWS005695. Importantly, Montana’s model departs from other iPOMs in a fundamental way: it does not rely on any *direct* demographic or population data. The model uses only hunter surveys (i.e., indirect reported data) in its determination of occupancy/non-occupancy. SUF ¶ 249 (FWS000381). Indeed, the authors of the model admit that their “iPOM approach is unique.” SUF ¶ 248 (FWS009825). This “uniqueness” is the basis of one of the major criticisms of the model from academics such as Creel (2022), which stated, “I am 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.” SUF ¶ 263 (FWS005691). Creel also pointed to fundamental deficiencies of the model in each of its three key components (estimation of area occupied by wolves, estimation of territory size, and estimation of pack size) and, finally, in the model’s combination of its three

flawed constituent parts into a single model, which serves to compound error even further. Creel even estimated a 35% bias in one of the three models, territory size, and concluded that “[t]his model demonstrably did not predict wolf territory size accurately.” SUF ¶ 262 (FWS005696). (Emphasis in original.) Creel also noted that the iPOM’s territory model was based on only four years of radio collar data, during which only 11 of the original 96 collared wolves remained alive and transmitting data. SUF ¶ 245 (FWS005696).

Crabtree et al. (2023) similarly argued that Montana’s iPOM methodology is beset by a number of flaws which, taken together, lead to a 150% overestimation bias in wolf population estimates. SUF ¶ 264 (FWS000362–63). The flaws identified by Crabtree et al. include (1) overestimation of occupancy due to too-large grid cells; (2) assumption of numerical and spatial pack stability during fall, which is a period with natural pack instability; (3) reliance on hunter surveys; and (4) other deficiencies, such as the lack of sensitivity to estimation errors and “issues [that] result confidence intervals that are incorrect and far too small.” SUF ¶ 264–68 (FWS000360–67).

In lieu of addressing Crabtree et al.’s paper in the Assessment, the Service prepared an internal memorandum regarding the critique. Upon review of both Crabtree et al. and a response to it by Sells et al. (2023), the Service adopted the conclusion of the Sells et al. response and wholly dismissed all of Crabtree et al.’s

criticisms. SUF ¶¶ 269–273 (FWS000353–55; FWS000395–97). However, the Sells et al. response addressed only *one* of the multiple issues raised by Crabtree et al. SUF ¶¶ 270–71 (*compare* Crabtree et al. (2023) (FWS000356– FWS000376) *with* Sells et al. (2023) (FWS000395– FWS000397)). The Service’s decision to simply ignore the remainder of Crabtree et al.’s critiques was arbitrary and capricious because it “entirely failed to consider an important aspect of the problem.” *State Farm*, 463 U.S. 29, 43.

Nevertheless, the Service insisted that iPOM “techniques” have been “developed, tested, and published in the peer-reviewed literature and have been refined over time.” SUF ¶ 251 (FWS000542–43). But crucially, *none* of the cited literature describe use of abundance-occupancy modelling to estimate population size without direct demographic/population data inputs, such as snow tracks (SUF ¶ 258 (FWS010894–95); 259 (FWS018983)), aerial observations (SUF ¶ 259 (FWS018983)), howling and sign surveys (SUF ¶ 257 (FWS001168)), and data from radio collars (SUF ¶ 257 (FWS001168)). The only study cited by the Service that contained a model relying only on hunter surveys, Rich et al. (2013) was not even a population abundance model, and it warned that “[o]ccupancy models based on public sightings... should not be considered temporally static models that can be used perpetually with confidence.” SUF ¶ 254 (FWS016068). Thus, *none* of the

cited literature supports the proposition that an iPOM lacking direct data can credibly determine population abundance estimates for years on end.

Finally, the Service received repeated and insistent criticism of the Service's treatment of Idaho's and Montana's models during the Assessment's peer review. Reviewers directed the Service to Creel (2022) and identified "major problems" with both models (SUF ¶ 300 (FWS000281)); told the Service that neither method was "rigorously validated," directing the Service to Ausband et al. (2022)'s finding of "severe overestimation bias" in one of three years, and explaining that the iPOM's authors' conclusion that their model is successful may be due to low precision (SUF ¶ 300 (FWS000287–88)); told the Service outright that "[t]he violations, limitations, and issues with the Idaho and Montana methods are not fully discussed [in the Assessment]" (SUF ¶ 300 (FWS000287)); and explained *de novo* specific flaws with each model (SUF ¶ 300 (*see, e.g.*, FWS000278; FWS000287; FWS000281)). While the Service assures that "Montana has committed to increase monitoring intensity if harvest and population metrics indicate wolf abundance is significantly reduced," SUF ¶ 275 (FWS000543), this commitment is not credible, for it presents an obvious catch-22. If the basis of the critique of the model is that the lack of sufficient direct monitoring may lead to poor population estimates, how can these same estimates be trusted to indicate when heightened monitoring is warranted?

As for Idaho, it is considering moving to models in the future that will rely on even fewer personnel and costs and a smaller spatial scale, in lieu of improving their current model. SUF ¶ 296 (FWS009497; FWS000543).

D. The Service’s determination that adequate federal regulatory mechanisms exist was flawed and therefore arbitrary and capricious.

Federal lands cover about 63% of the current range of the gray wolf in the West. SUF ¶ 301 (FWS000525). Given this, the ESA requires the Service to assess whether there are adequate regulatory mechanisms to protect wolf populations on these federal lands. The Service identified predator control from livestock conflicts as the threat to wolves on federal land. SUF ¶ 306 (FWS000527). This is because federal land grazing allotments comprise over half of federal land within the Western wolf’s range (SUF ¶¶ 301 (FWS000527); 303 (FWS000527–28)), and the federal agencies with authority over the allotments “typically defer to the states on hunting and trapping decisions.” SUF ¶ 302 (FWS000527).

In the Assessment, the Service relied on national parks and wilderness areas for their protections against take, SUF ¶¶ 303–04 (FWS000526–28), though these are only a small proportion of federal lands within the wolf’s range (SUF ¶ 303 (FWS000527–28)), and referred to Forest Service Manual 2670.22, which “requires National Forests to develop and implement practices to ensure species do not become federally listed, and to maintain viable populations ... on National Forest...lands” (SUF ¶ 302 (FWS000527)). However, the Service identified no

mechanisms or requirements specific to Western wolves in the Manual, merely identifying that the Manual “requires National Forests to develop and implement practices to ensure species do not become federally listed, and to maintain viable populations of all...species... on National Forest System lands.” *Id.*

In *Defenders of Wildlife v. U.S. Fish & Wildlife Service*, the district court struck down the Service’s determination that federal public land management policies would provide adequate regulatory mechanisms to protect wolves. *Def. of Wildlife v. U.S. Fish & Wildlife Serv.*, 584 F. Supp. 3d 812, 832 (N.D. Cal. 2022). The court held that, while “wolves in the western States . . . reside largely on federal public lands . . . Forest Service land management plans in the West Coast states ‘do not contain standards and guidelines specific to wolf management’ . . . [nor do they] explain how these mechanisms will ensure a sustainable wolf population post-delisting.” *Id.* In contrast, in *Greater Yellowstone Coalition v. Servheen*, 665 F.3d 1015 (9th Cir. 2011), the Ninth Circuit held that, *because* the final conservation strategy for the grizzly bear in the Greater Yellowstone Area would be incorporated into enforceable national forest plans, the Service’s conclusion that adequate regulatory mechanisms existed to protect the bear on federal lands was reasonable. *Id.* at 1031. As in *Defenders* and in distinction from *Greater Yellowstone Coalition*, the Service failed to identify any federal

mechanisms with enforceable standards specific to wolf management on federal lands.

III. CONCLUSION

Plaintiffs respectfully request this court declare unlawful and set aside the Service's Finding that the Western gray wolf does not warrant listing under the ESA.

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I, the undersigned counsel of record, certify that this brief is proportionally spaced, has a typeface of 14 points or more, and contains less than 5,000 words in accordance with this Court's July 23, 2024 case management order (Doc. 33). I relied on Microsoft Word to obtain the word count.

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