

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
Senior Judge Marcia S. Krieger**

Civil Action No. 16-CV-1932-MSK-STV

**CENTER FOR BIOLOGICAL DIVERSITY, and
TAYLOR MCKINNON,**

Plaintiffs,

v.

**SALLY JEWELL, Secretary of the Interior, and
U.S. FISH & WILDLIFE SERVICE,**

Defendants, and

**STATE OF COLORADO,
COLORADO DIVISION OF PARKS & WILDLIFE,
COLORADO PARKS & WILDLIFE COMMISSION, and
NEW MEXICO DEPARTMENT OF GAME & FISH,**

Intervening Defendants.

OPINION AND ORDER VACATING IN PART AND REMANDING DECISION

THIS MATTER comes before the Court for a determination on the merits, based on the Plaintiffs' Complaint (# **1**), the Plaintiffs' Opening Brief (# **76**), the Defendants' Response (# **77**), the Intervening Defendants' Responses (## **78, 79**), and the Plaintiffs' Reply (# **80**). Upon consideration of the arguments presented in light of the Administrative Record (## **21, 22, 67, 75**), the Fish and Wildlife Service's decision is vacated, in part, and remanded.

I. JURISDICTION

The Court exercises jurisdiction under 5 U.S.C. § 702 and 28 U.S.C. § 1331.

II. BACKGROUND¹

The Endangered Species Act (“ESA”), 16 U.S.C. § 1531 *et seq.*, provides a mechanism for the protection of plant and animal species that are determined to be “endangered” or “threatened” due to habitat loss, predation, and other events. A species is “endangered” if it is “in danger of extinction throughout all or a significant portion of its range.” 16 U.S.C.

§ 1532(6). A species is “threatened” if it “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” 16 U.S.C. § 1532(20).

The Secretary of the Interior, through delegation to various agencies within that Department, makes a determination of whether a given species is threatened or endangered. 16 U.S.C.

§ 1533(a)–(b). If the species is found to be threatened or endangered, that status is noted on a list kept by the Secretaries of the Interior and Commerce, and the species is described as “listed,” with various consequences flowing from that status. 16 U.S.C. § 1533(c)(1).

The Rio Grande Cutthroat Trout (“Trout”) is native to and lives in high-altitude streams in southern Colorado and New Mexico. Maintaining suitable populations of Trout requires long, continuous, suitable stream habitats and isolation from other species of non-native trout, who have a tendency to mate with the Trout, producing hybridized offspring that dilute genetically-pure Trout populations. Due to habitat loss, invasive species, and other effects, Trout currently occupy only about 10% of their total historical range. Roughly 100 current populations of Trout are spread across four different geographic management units, although due to the loss of connecting waterways, most existing populations of Trout are effectively geographically isolated from each other.

¹ The Court sets forth the general facts underlying this appeal, discussing the specific agency findings as appropriate in its analysis below.

The Trout's status under the ESA has been considered by the U.S. Fish and Wildlife Service ("the Service") on several occasions. In 2002, the Service considered the Trout and concluded that its status did not warrant listing. In 2008, the Service reversed course, finding that the Trout should be listed. *Status Review for Rio Grande Cutthroat Trout*, 73 Fed. Reg. 27,900–26 (May 14, 2008) ("the 2008 Determination"). As required by law, the Service revisited the decision to list the Trout five years later, and in 2014, the Service changed its mind again, finding that the Trout no longer warranted listing. *12-Month Finding on a Petition to List Rio Grande Cutthroat Trout as an Endangered or Threatened Species*, 79 Fed. Reg. 59,140–50 ("the 2014 Determination").

Dissatisfied with the Service's 2014 Determination delisting the Trout, the Plaintiffs commenced this action pursuant to the Administrative Procedure Act (APA), 5 U.S.C. § 706(2)(A). After resolution of the appropriate scope of the administrative record, the parties filed briefs on the merits of the Plaintiffs' claims. The Plaintiffs' brief (# 76) argues: (1) the factual records before the Service in the 2008 and 2014 determinations were effectively the same, and the Service did not meaningfully explain why its analysis of those facts changed in the 2014 determination; (2) the Service's conclusion that the Trout was not threatened because a reduced number of populations would remain in 2080 misapplied the appropriate standard under the ESA for assessing a threat to the species; (3) the Service did not evaluate the five factors required by 16 U.S.C. § 1533(a)(1)(A); and (4) the Service erroneously failed to consider the impact of the loss of the Trout's historical range.

III. STANDARD OF REVIEW

The APA permits persons harmed by a federal agency's action to seek judicial review of that action. 5 U.S.C. § 702. Once an agency action is challenged, a district court reviews the

action as if it were an appellate court. *See Olenhouse v. Commodity Credit Corp.*, 42 F.3d 1560, 1580 (10th Cir. 1994). The Court can set aside agency action if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A).

The Court may affirm an agency’s decision only “on the grounds articulated by the agency itself.” *Olenhouse*, 42 F.3d at 1565, 1575. “After-the-fact rationalization by counsel in briefs or argument will not cure noncompliance by the agency”. *Id.* at 1575. When the challenge is that the agency’s decision is arbitrary and capricious, the Court must determine whether the agency examined the relevant data and factors, and whether it articulated a rational connection between the facts and its decision. *Id.* at 1574. Typically, an “agency’s action is entitled to a presumption of validity, and the burden is upon the petitioner to establish the action is arbitrary or capricious.” *Sorenson Commc’ns Inc. v. FCC*, 567 F.3d 1215, 1221 (10th Cir. 2009). Deference to the agency “is especially strong where the challenged decisions involve technical or scientific matters within the agency’s area of expertise.” *Utah Envt’l Cong. v. Bosworth*, 443 F.3d 732, 739 (10th Cir. 2006). If the agency’s exercise of discretion is truly informed, then the Court defers to it. *Utah Shared Access Alliance v. U.S. Forest Serv.*, 288 F.3d 1205, 1213 (10th Cir. 2002).

The Court does not substitute its judgment for that of the agency. *Colo. Wild v. U.S. Forest Serv.*, 435 F.3d 1204, 1213 (10th Cir. 2006). It is not the Court’s role to weigh conflicting evidence or evaluate credibility. *See Pennaco Energy Inc. v. Dep’t of the Interior*, 377 F.3d 1147, 1159 (10th Cir. 2004). Indeed, even when the administrative record contains evidence that arguably conflicts with the agency’s findings, it does not necessarily render the agency’s decision arbitrary and capricious. *See id.* Nor is it the Court’s function to decide the propriety of competing methodologies. *See Silverton Snowmobile Club v. U.S. Forest Serv.*, 433

F.3d 772, 782 (10th Cir. 2006). In other words, the focus is on the rationality of the decisionmaking process, not on the decision itself. *Olenhouse*, 42 F.3d at 1575.

IV. DISCUSSION

A. Summary of the 2008 and 2014 Determinations

Because the Plaintiffs contend that the 2008 and 2014 Determinations are predicated on the same basic facts, it is necessary for the Court to discuss those two analyses, as well as an intervening event, in some detail.

1. *The 2008 Determination*

The 2008 Determination began with an acknowledgement that the Service has previously considered the status of the Trout in 2002, and had determined that the listing of the Trout was not warranted at that time. But it noted that, since then, “several of the original core populations has subsequently declined and we believe those populations alone are not sufficient to conserve” the Trout. 73 Fed. Reg. at 27,901. Like the 2002 review, the 2008 Determination focused on “core populations” of Trout, defined based on their “genetic integrity, population stability, and security from invasion by nonnative [trout and salmon],” plus “conservation populations” that “retain the ecological, behavioral, and phenotypic characteristics” of the Trout; by all appearances, all substantial Trout populations fall into either the “core population” or “conservation population” categories. *Id.* at 27,901–02. At that time, the Service estimated that there were currently about 120 total populations, and it expected that conservation efforts underway in two streams would eventually produce two more viable populations of Trout.

The 2008 Determination primarily addressed five factors: (1) present or threatened destruction or curtailment of habitat; (2) overutilization for commercial and recreational purposes; (3) disease or predation; (4) the adequacy of existing regulatory mechanisms, and (5)

other natural and man-made factors affecting the Trout.² The second factor (overutilization) was largely dismissed as insignificant, and the third factor (disease) was noted as an abstract concern that had yet to substantially materialize in the field. The bulk of the analysis instead focused on the other three factors.

As to habitat loss, the 2008 analysis explained that population loss among Trout was often due to “water diversions, stream drying, dams, habitat degradation, changes in hydrology, hybridization with rainbow trout, or competition with” other species. It adopted scientists’ estimate that only about 10% of the Trout’s habitat remained and that most populations were now isolated from one another due to the loss of connecting streams. This lack of connection caused “habitat fragmentation,” which reduces the total area of habitat available, reduces habitat complexity, prevents gene flow, and ultimately “accelerates extinction” when isolated populations are harmed or destroyed by random events. The Service also found that many of the habitat fragments that remained were short lengths of streams, reducing the habitat’s suitability to support large numbers of fish and increasing the likelihood that areas required for completion of the Trout’s life cycle might be affected or destroyed. *Id.* at 27,903.

The Service noted that habitat fragmentation “can be partially alleviated by management activities,” and it cited “three major watershed-scale projects [that] have been initiated on both private and [Forest Service] lands and are in various phases of implementation.” Among others, the conservation projects included the Vermejo Park Ranch project that began in 2002, which removed non-native species and reintroduced the Trout to several creeks and lakes on the ranch’s property. The Service was cautious about assuming that restoration projects would substantially

² The ESA expressly requires agencies to consider these five factors. 16 U.S.C. § 1533(a)(1)(A)–(E).

slow the loss of Trout populations (much less *increase* the number of such populations), noting that such projects “face many challenges,” including public opposition, sabotage, barrier failures, and inadvertent mistakes. *Id.* at 27,906.

Surveying a variety of reference sources, the Service stood by its prior estimates that at least 2,500 fish would be needed in a given population in order to “ensure long-term persistence” of that population, and that populations with fewer Trout would be at greater risk of loss and would not “be contributing to the long-term persistence of the subspecies.” Of the 120 conservation populations that had been identified in 2002, the Service believed identified only 13 populations were “secure,” in that they contained sufficient Trout, harbored no non-native trout, and were protected from invasion by non-native fish via a barrier. By 2007, 8 of those 13 populations had fallen below 2,500 fish (including one that had gone from 13,000 fish to “extirpated” — completely destroyed — due to low water conditions). *Id.* at 27,904.

Turning to the other risks affecting the Trout, the Service found that it had insufficient data to determine whether habitat quality was a significant threat to the Trout range-wide. The Service then discussed the introduction of non-native species as “one of the leading causes of range reduction” in the Trout, either through competition for food and habitat or through interbreeding and hybridization. It cited droughts in the early 2000s as damaging or eliminating as many as 15 populations, and noted “the possibility of more widespread drought accompanying climate change” as an active threat to the Trout. It also noted that increasing wildfire activity had both positive and negative effects on Trout habitats, but that ultimately, fire was also a significant threat. *Id.* at 27,908–09.

As to the adequacy of existing management mechanisms, the Service noted that both Colorado and New Mexico have identified the Trout as species of special concern and that both

states have management plans that are attempting to ensure conservation of the species. It also noted a 2003 “range-wide [C]onservation [A]greement” signed by federal and state authorities, as well as the Jicarilla Apache Nation, along with the formulation of a “Conservation Team” among those entities that produced a 2007 study of the Trout. *Id.* at 27,912.

Finally, the Service considered other factors affecting the Trout, noting specifically climate change and the expectation that it would lead to increased water temperature, decreased stream flow, changes in hydrography (*i.e.*, the timing of snowmelt and runoff and its effect on Trout spawning and growth seasons), and extreme events like drought and fire, all of which were expected to pose significant risks to Trout populations. The Service noted that management of the Trout will depend, in part, on the use of hatchery-raised fish, but noted that the history of fish farming “has been marked by challenges,” including disease and infiltration of non-native species. *Id.* at 27,919.

Based on these considerations, the Service decided that listing of the Trout “is warranted, due to a combination of population fragmentation, isolation, small population size, nonnative trout, drought, and fire, [] compounded by the projected effects of climate change.”³ Moving on to considering “the probability that the species will persist into the foreseeable future,” the Service defined the “foreseeable future” as “20 to 30 years.” It observed that “populations we considered secure in 2002 suffered severe to moderate population declines” over a span of just five years, with only 8 remaining populations were still considered “secure.” Another 97 populations “exist[ed, but] they are all affected by one or more threats,” such as small population size, short stream length, or the presence of non-native species. “The overarching threat,” the

³ Although finding that listing of the Trout under the ESA was warranted, the Service concluded that other management priorities precluded it from doing so, leaving the Trout in the company of many other species in the category of “warranted but precluded” under the ESA.

Service concluded, “is fragmentation,” and that “recolonization of streams cannot occur after a natural disaster occurs and populations are much more susceptible to extirpation.” The Service acknowledged that “several habitat restoration projects are in progress and several others are planned,” but that it was “too early to determine the level of success” of these projects “as they have not been fully completed and evaluated.” *Id.* at 27,920–21.

2. The SPR Language Interpretation

The ESA considers whether a species is endangered or threatened⁴ throughout all or a “significant portion of its range.” The phrase *significant portion of its range* (“SPR”) is decidedly unclear, and various federal agencies have offered several varying interpretations of its meaning over the years. Those interpretations, in turn, have generated copious litigation and court challenges. This Court will not attempt to trace through that extended history of those disputes. Instead, the Court simply observes that after several setbacks in court, in 2014, the Service promulgated its most recent interpretation of that phrase. *Final Policy Interpretation on the Phrase “Significant Portion of Its Range” in the Endangered Species Act*, 79 Fed. Reg. 37,578–601 (July 1, 2014) (“the SPR Interpretation”).

The Service explained that, when applying the ESA and the SPR Interpretation, it would proceed sequentially. First, it would determine whether a species was endangered throughout *all* of its range. If the Service found that the species was not endangered throughout all of its range, it would proceed to determine what portions of the species’ range were *significant* — that is, those portions of the range whose “contribution to the viability of the species is so important

⁴ Although there are technical definitional differences between a species being “threatened” and “endangered” under the ESA, that distinction is not particularly essential to the analysis herein. Therefore, in the interests of brevity, this Court will often collapse both concepts together and hereafter speak only of a species being “endangered” in this Opinion.

that, without the members in that portion, the species,” throughout *all* its range, “would be in danger of extinction, or likely to become so in the foreseeable future.” *Id.* at 37,578–79. If a portion of the species’ range is deemed significant under this standard, the Service would then determine whether the species is endangered within that portion, now and into the foreseeable future. If the species is not endangered in that portion, the analysis ends and the species is not listed; if the species is endangered within that portion, the species as a whole is listed.

The SPR Interpretation also made clear that Service bases its determinations on a species’ *current* range, not its historical range. The Service explained that it considers historical range loss to the extent that the lost range may affect a species’ current resiliency, but that historical range in which a species can no longer be found cannot constitute a significant portion of that species’ range.

3. The 2014 Determination

With the SPR interpretation in place, the Service reconsidered the listing of the Trout in 2014. The 2014 Determination noted that the Trout “needs multiple resilient populations widely distributed across its range to maintain its persistence into the future and to avoid extinction.” The Service found that the species is currently distributed in 122 populations — essentially the same number found in 2008 — and that most populations are isolated from one another. Using factors of stream length, population size, and the presence of non-native species, the Service evaluated each of the 122 populations of Trout, finding that 55 of those populations could be categorized as being in either “best” or “good” condition. 79 Fed. Reg. at 59,141–42.

The heart of the Service’s analysis was its construction of a statistical and analytical model that weighed the effects on Trout populations from varying levels of seven specific risk factors: (1) demographic risk resulting from small population sizes; (2) hybridizing non-native

species who present the risk of genetic dilution; (3) competing non-native species; (4) wildfire; (5) stream drying; (6) disease; and (7) water temperature changes.⁵ The Service explained that it considered other risk factors, such as hydrologic changes, land management effects, and the effects from recreational fishing, but did not consider those factors to produce significant negative impacts. The Service evaluated the output of this model for three desired criteria: (1) resiliency, namely “having sufficiently large populations for the subspecies to withstand [unexpected] events”; (2) redundancy, namely, “having a sufficient number of populations for the subspecies to withstand catastrophic events”; and (3) representation, namely “having the breadth of genetic and ecological diversity of the subspecies to adapt to changing environmental conditions.” *Id.* at 59,143.

The model also incorporated certain assumptions by the Service about “the likely number of populations that could be restored in the future” through two conservation programs that were underway, specifically the Conservation Agreement (among the federal and state agencies and the Indian tribe) and the Vermejo Project, both of which had been described in the 2008 determination as well. The Service explained that the parties to the Conservation Agreement had recently revised the agreement that had existed as of the 2008 Determination, but the 2014 Determination did not particularly explain how the new agreement differed from the old one. The 2014 Determination states that, via the Agreement, the parties “have committed to restoring 11 to 20 new populations” of Trout, and the Service concluded that there was “a high level of

⁵ The Service acknowledged the five factors required to be considered under 16 U.S.C. § 1533(b)(1), and noted that, traditionally, the Service would address those five factors specifically. But the Service explained that ongoing “efforts to improve the efficiency and efficacy of the Service’s implementation of the Act have led us to present this information in a different format.” 79 Fed. Reg. at 59,145. The Service insisted that it was still considering the five factors listed in the statute and pointed out how it believed the seven risk factors listed herein correspond variously to the five statutory factors.

certainty of implementation and effectiveness” of the project “because of the demonstrated ability of the participants in carrying out an effective conservation program.” As to the Vermejo Project, the Service found that the project also involved an agreement signed in 2013, again without an explanation of how that agreement differed from the project evaluated in 2008. The Service stated that, again, it had “a high level of certainty of implementation and effectiveness because of the demonstrated ability of the [participants] for carrying out effective conservation actions.” *Id.* at 59,144–45. Thus, the Service’s model factored in certain assumptions about how the number of Trout populations could *increase* in the coming years due to these conservation projects.

The Service ran the model through nine “scenarios” and simulated effects over three time periods: (1) a short-term period encompassing 10 years from the analysis date, ending in 2023; (2) a medium-term period, ending in 2040, running roughly 25 years from the analysis date; and (3) the longest-term period that the Service could characterize as the “foreseeable future,” a 65-year period ending in 2080. The Service emphasized that it based its conclusions in the 2014 Determination on the “worst-case scenario” generated by the model, which contemplated “low management and severe climate change,” because “if the subspecies does not warrant listing under our worst-case scenario, the eight remaining scenarios will also not warrant listing.” *Id.* at 59,143–44.

Consistent with the analytical framework described in the Service’s interpretation of the SPR language, it began with an analysis of whether the Trout was *endangered* throughout all of its current range. It first determined that, because it identified 55 existing populations that could be categorized as “best” or “good” condition, the species currently demonstrated sufficient resiliency, redundancy, and representation. Projecting the worst-case scenario under its model,

the Service predicted that in 2023, a total of 104 populations of Trout would remain (although the Service did not purport to quantify how many of these would fit under the “best” or “good” quality categories) and that “these populations would be distributed throughout the subspecies’ range, with multiple populations persisting in all four” of the geographic areas where the Trout are now found. *Id.* at 59, 146. Thus, the Service concluded that the Trout was not immediately in danger of extinction.

The Service then considered whether the Trout would be *threatened* with extinction throughout its range in the “foreseeable future” — that is, over a 25-year period ending in 2040 and a 65-year period ending in 2080. It chose these periods because they were far enough away to permit the Service’s models to reflect significant climate change effects that are anticipated to occur but which might not significantly manifest in the short-term future. For this analysis, the models generated a worst-case scenario showing that in 2080, 50 populations of Trout would remain, with multiple populations located in all four geographic areas. (The Service did not provide details about the 2040 model’s output.) The Service concluded that even these 50 populations would be sufficient to provide the necessary resiliency, redundancy, and representation to allow the species to continue to survive. Thus, it concluded that the Trout was not threatened with extinction throughout its range in the foreseeable future.

The Service then conducted its analysis of what portions of the Trout’s range would be *significant* under the SPR Interpretation. It concluded that there were four meaningful “portions” of the Trout’s range: the Rio Grande Headwaters area, the Lower Rio Grande area, the Canadian area, and the Pecos area. Because the Headwaters area houses 34% of the Trout populations and the Lower Rio Grande area houses almost 50% of the populations, the Service concluded that the loss of either area would pose a threat of overall extinction to the Trout, making both areas

significant for purposes of analysis. It concluded that the Pecos and Canadian areas would not be considered significant on their own, but the combination of the two, accounting for the remaining 18% of populations, would be a significant loss. Thus, the Service considered whether the Trout was presently endangered or threatened in the future with regard to the Headwaters area alone, the Lower Rio Grande area alone, and the combined Pecos-Canadian area. (The Service also considered the combination of the Headwaters and Lower Rio Grande area.) As to the Headwaters area, the Service found that 19 of the current 41 populations were in best or good condition; that in 10 years, the worst-case model projected 41 populations would remain; and that in 2080, 21 populations would remain. As to the Lower Rio Grande, the Service found that 28 of 59 populations were in best or good condition; that in 10 years, the worst-case model projected 43 populations would remain; and that in 2080, 21 populations would exist. For the combined Pecos-Canadian area, 8 of its 22 current populations are in best or good condition; in 10 years, it is estimated that 19 populations would remain; and in 2080, 8 populations would remain. The Service believed that each of these projections demonstrated sufficient resiliency, representation, and redundancy to conclude that the Trout was neither presently endangered nor threatened with extinction in the foreseeable future in any of the significant portions of its range.

Thus, the 2014 Determination concluded that the Trout was not appropriate for listing.

B. The Plaintiffs' Challenges

1. Change from the 2008 Determination

The Plaintiffs' primary challenge to the 2014 Determination is that that Service faced essentially the same factual scenario as it had for the 2008 Determination, yet reached the opposite conclusion. The Plaintiffs contend that the Service has failed to adequately explain the

reasons for the different results, warranting a conclusion that the 2014 Determination was arbitrary and capricious.

The Court agrees with the Plaintiffs that, by and large, the evidence before the Service for the 2008 and 2014 decisions was substantially identical. Both determinations acknowledge the loss of 90% of the Trout's historical habitat, the threats to the Trout posed by habitat fragmentation and intrusion by non-native species, the risks of climate change on stream flows and temperature, and so on. Both analyses were based on roughly the same number of existing Trout populations.

This Court's review of the factual basis recited in the two determinations reveals two major differences between them. First, although both determinations roughly agree on the overall number of Trout populations in existence, they disagree about the number of populations that can be considered particularly healthy. Both determinations seem to use stream length, the presence of non-native species, and the total number of Trout in the population as the indicators of a healthy population. But the 2008 Determination found that only eight populations could be considered "secure" by those criteria, with 97 others being affected by one or more risk factors. The 2014 Determination concluded that some 55 populations were in "best" or "good" condition based on, essentially, the same criteria. Although there may be subtle distinctions that explain this numerical disparity, they are not evident from the 2014 Determination. Rather, it simply appears that, between 2008 and 2014, the Service changed its criteria for determining whether a given Trout population was healthy and stable. The 2014 determination does not explain that change in criteria nor indicate why the 2008 criteria were now deprecated.

Review of documents underlying the 2014 determination only highlight the disparity between the methodologies applied in 2008 and 2014. The 2008 Determination explains that the

Service believed that a population was required to have at least 2,500 fish to be considered stable and healthy. *See* 73 Fed. Reg. at 27,904 (“there is relative certainty that populations below 2,500 are likely at risk and may not be contributing to long-term persistence of the subspecies”). The 2014 Determination’s classification of populations as “good” or “best” allowed a population to obtain that label with as few as 501 fish. (R. at D008192.) The underlying data reflects that, for example, only two of the populations in the Headwaters area exceed 2,500 fish, and only one of the populations in the Lower Rio Grande area did. (R. at D008302–04.) (A second population in the Lower Rio Grande area was reported as having 2,488 fish, almost reaching the 2,500 threshold.) It appears that, had the Service applied the same criteria it used in 2008, the 2014 Determination would have reached the same conclusions that the Service had in 2008 — that only a relative handful of populations were of a stable and healthy size, rather than the 55 that the 2014 Determination found.

Because the Service has offered no explanation for the different methodologies it used in 2008 and 2014 to calculate the number of healthy Trout populations, the Court must conclude that the change in methodology was, on the instant record, arbitrary and capricious. It may very well be that new studies, new sampling methods, or other analytical tools developed since 2008 call into question the Service’s 2008 determination that 2,500 Trout are required before a population can be declared stable. But the Service has not pointed the Court to evidence in the record that establishes the basis for such a change in methodology. *See, e.g., F.C.C. v. Fox Television Stations Inc.*, 556 U.S. 502, 515 (2009) (when a new agency policy “rests upon factual findings that contradict those which underly its prior policy,” a detailed justification will be required). Thus, the Court must reverse and remand the 2014 determination for further analysis and explanation for the criteria used to calculate healthy Trout populations.

Second, the 2008 and 2014 Determinations differ with regard to their assessment of the effectiveness of conservation measures. The Service concedes that two of the conservation projects discussed in the 2008 Determination — the Vermejo Project and the Conservation Agreement — are the “predecessors” of the specific projects the Service relied upon in the 2014 determination. In the 2008 Determination, the Service acknowledged that conservation efforts like these are “the best method for addressing fragmentation,” but acknowledged that the projects “face many challenges including negative public sentiment towards using pesticides in streams which slows or stops projects, incomplete treatment which leaves non-natives present, sabotage of the treatment area (unauthorized introduction of nonnative trout, subsequent barrier failure which allows non-natives to invade a system, and inadvertent mistakes.” 73 Fed. Reg. at 27,906. The 2014 Determination does not directly address these sorts of concerns. Rather, the Service applied its 2007 Policy for Evaluation of Conservation Efforts⁶ and found that, because the conservation projects had “high levels of certainty of implementation and effectiveness,” it was appropriate to anticipate and rely upon positive effects they might have on Trout populations. 79 Fed. Reg. at 59,144.

As an initial matter, the Plaintiffs are correct that much of the structure of these conservation projects were in place as of the time of the 2008 Determination, and indeed, the record reflects that both projects had resulted in some tangible conservation efforts prior to 2008. But the record also reflects that, for example, the Conservation Agreement project has demonstrated several additional successful implementations since 2008. (*See* R. at D003417–25.) To the extent that the Service was uncertain in 2008 about whether projects of this type

⁶ The Court does not understand the Plaintiffs to allege that this policy is problematic in and of itself, nor that the Service misapplied the policy in concluding that the conservation projects had a likelihood of completion and effectiveness.

could be effective, the record appears to reflect that, since then, they have been. *Compare* 73 Fed. Reg. at 27,906 (Service noting in 2008 that chemical treatments of the Costilla and Placer watersheds were underway as of the 2008 determination and that “[i]f successful,” these projects “would represent substantial gains” in connecting Trout habitats), *with* R. at D003417 (noting Placer Creek Reclamation project as “completed” in 2009 and that “sampling in 2008 revealed that the [T]rout survived the 2007 treatment”), *and* R. at D003420 (noting Costilla Creek project as “complete” as of 2008). Thus, it appears to the Court that the *new* information before the Service in 2014 about the effectiveness of the conservation projects was information that the Service did not have in 2008. Accordingly, the Court rejects the Plaintiffs’ argument that the existence of the conservation projects as of 2008 renders the Service’s reliance on them in 2014 to be arbitrary and capricious.

The Plaintiffs argue that the Service nevertheless erred by considering the conservation projects without considering whether the “effects of climate change may outpace [the benefits of these] management actions.” (# 80 at 11.) In the 2008 Determination, the Service did mention, in passing, that although “continued management actions to connect fragmented populations are essential,” it remained unclear whether “management actions can outpace some of the projected effects of climate change.” 73 Fed. Reg. at 27,920. But the Court does not read the 2014 Determination to suggest that the Service was concluding that management efforts *would* outpace climate change effects. *Some* versions of the Service’s analytical model discussed in the 2014 Determination concluded that the number of Trout populations might actually *increase* in the near term, rising to as many as 131 populations. *See* 79 Fed. Reg. at 59,146. But the 2014 Determination makes clear that the Service was basing its decision to delist the Trout on the *worst-case* scenarios, not the best-case ones. Those worst-case scenarios all reported some

degree of population loss, not gain, over time. Thus, the Service was not purporting to find that conservation efforts would outpace climate change and other risk factors affecting Trout populations. At most, the Service was finding that conservation efforts to create some new habitats that might *partially* offset habitat losses that would otherwise result from climate change and other effects, but that such efforts themselves would not maintain or increase population numbers. Thus, the Court rejects the Plaintiffs' arguments that the 2014 determination's reference to ongoing conservation projects renders that determination arbitrary and capricious.

In addition to these major factual differences between the 2008 and 2014 Determinations, the Plaintiffs also point to two additional alleged analytical discrepancies. The Plaintiffs contend that the 2008 Determination described habitat fragmentation as the "overarching threat" facing the Trout, but argue that the 2014 determination "did not further discuss or evaluate habitat fragmentation as a discrete threat." (**# 76 at 24.**) The Plaintiffs are correct that the Service did not discuss fragmentation as a *discrete* risk in 2014, but it is clear that the Service did consider the effect that habitat fragmentation had on other risk factors. The 2014 Determination acknowledged that "due to fragmentation, . . . if an extant population is extirpated due to a localized event, [] there is little to no opportunity for natural recolonization of that population." 79 Fed. Reg. at 59,143. And it goes on to state that the Service considered this fact, noting that it reflects a "reduction in resiliency [that] results in a lower probability of persistence for the subspecies as a whole," and that the Service addressed that by "evaluat[ing] the individual populations in detail to understand the subspecies' overall capacity to withstand stochastic events." *Id.* Thus, the record reflects that the Service *did* consider fragmentation when designing its broader methodology. And the Plaintiffs have not pointed to any particular defects

in the methodological models that the Service used in 2014, much less show that they failed to reasonably account for habitat fragmentation among the variables being considered.

Finally, the Plaintiffs argue that the 2014 Determination abandoned the 2008 Determination's finding that climate change constituted a "severe threat to the Trout that exacerbates other threats." (# 76 at 24.) The Plaintiffs concede that the 2014 Determination considered the effect of climate change on four of the seven risk factors it analyzed. But it appears that the Plaintiffs disagree with the conclusions reached by the Service in assessing the degree of effects expected due to climate change. It is undisputed that the Service attempted to estimate the effects of climate change by using both "moderate" and "severe" predictions of expected effects, and that for the severe model, it "increased the risk function over time by 20 percent for the 2040 forecast and 40 percent for the 2080 forecast." 79 Fed. Reg. at 59,147–48. The Plaintiffs take issue with the Service's observation that the differences in results from the moderate and severe climate change models were "not particularly large." Disbelieving that this could be a correct conclusion, the Plaintiffs thus suggest that the models "are driven by the Service's assumption that climate change will have relatively little influence on the threats to individual Trout populations." (# 76 at 26.)

But the Plaintiffs' argument begs its own question, assuming that the Service's models are infected by false preexisting assumptions that climate change effects will be minimal. It is essential to note that the Plaintiffs have not gotten "under the hood" of the Service's models and pointed out any methodological, programming, or data entry flaws with them. Rather, the Plaintiffs simply argue that the models *must be* flawed because they produced results with which the Plaintiffs disagree. It may be that the models are flawed, but it may also be that the Plaintiffs' (and the Service's as of 2008) expectations about climate change effects are

misplaced. Ultimately, it is the Plaintiffs' burden to demonstrate an error in the Service's actions, and simply pointing out that two different methodological approaches to calculating the effects of climate change in the far future produced two different results, one of which the Plaintiffs disagree with, does not suffice to carry that burden.

Accordingly, the Court finds that the 2014 Determination must be vacated, in part, and remanded to the Service for the limited purpose of explaining the change to the Service's method for calculating healthy Trout populations. The Court finds that the Plaintiffs' remaining challenges to the 2014 Determination are without merit.

2. Application of Incorrect Standard

The Plaintiffs also argue that the Service applied the wrong standard under the ESA in determining that the Trout is not threatened with future extinction throughout its range. The Plaintiffs contend that the Service improperly required that "all Trout populations [] be completely gone" by 2080 before listing the species as threatened would be appropriate. (**# 76 at 35.**)

The Court returns to the two components of the ESA inquiry. A species is endangered if it is "in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). A species is threatened if it is "likely to become an endangered species within the foreseeable future." 16 U.S.C. § 1532(20). In essence, then, the endangered inquiry considers what might occur in the present and immediate short-term future — *i.e.*, whether the species is in danger of becoming extinct *now*. The threatened inquiry takes a longer-term view, asking whether the species might *become* endangered in a more distant future. But the threatened inquiry is necessarily closed-ended; once the Court has reached the endpoint of the "foreseeable future" — which the parties here agree is 2080 — the Court's ability to prognosticate must also

come to an end. After 2080, nothing can be foreseen, all is simply speculation. So it is meaningless to ask whether a species will be threatened as of 2080, because it is impossible in 2080 to engage in the long-term future examination that the threatened analysis requires. By 2080, a species must have either reached the level of endangered and be at immediate risk of extinction, or it never will.

The 2014 Determination's reliance on worst-case scenarios does paint a picture of a species in decline. The Service estimates that Trout populations would decrease by a third as of 2040, and by more than half as of 2080. Moreover, as the Service has repeatedly acknowledged, fragmentation of the Trout's habitat means that extirpation of Trout from a particular population makes it unlikely that that population will ever be reestablished. As the Plaintiffs observe, it appears that the Trout is on a "slide towards extinction." (**# 76 at 35.**) But if the Service's models are correct — and in the absence of a challenge, the Court must assume that they are — that slide will not be completed as of or immediately following 2080. At that time, there will still be 50 populations of Trout remaining, a number that the Service believes (and the Plaintiffs have not disputed) is enough to ensure the species' survival through some indeterminate point in the future. What might become of those 50 populations after 2080 is beyond our ability to foresee; the curtain has come down and the movie has ended. We could attempt to speculate about what might happen thereafter — the 50 populations could persist, they could perish, new populations could be discovered, old habitats could become viable again — but speculation is all it would be. Our ability to *predict* what might happen has come to an end.

Accordingly, because the record supports the conclusion that, as of 2080, there are 50 viable populations of Trout remaining and the species will persist, the Trout is neither presently

endangered nor threatened with being so in the foreseeable future. The Plaintiffs' challenge on this point is without merit.

3. Failure to Apply the Five Statutory Factors

As mentioned above, the ESA specifically identifies five factors that the Service must consider in deciding whether to list a species. Those factors are: (1) present or threatened destruction or curtailment of habitat; (2) overutilization for commercial and recreational purposes; (3) disease or predation; (4) the adequacy of existing regulatory mechanisms, and (5) other natural and man-made factors affecting the Trout. 16 U.S.C. § 1533(a)(1)(A)–(E). The Plaintiffs contend that the Service did not consider those five factors as part of the 2014 Determination, requiring reversal.

The 2014 Determination acknowledges the mandatory nature of the five factors; it simply finds it inconvenient and unnecessary to structure its analysis to address those factors expressly and in *seriatim*. Instead, the Service stated that it would address all five factors holistically, as part of its broader analysis. 79 Fed. Reg. at 59,144–45. It went on to correlate the seven risk factors it was considering to the five factors listed under the statute. *Id.* at 59,145 (*e.g.*, explaining that the risk factor of non-native species addressed the statutory factors at 16 U.S.C. § 1533(a)(1)(A) (threatened destruction of range) and § 1533(a)(1)(C) (disease or predation); the risk factor of recreational angling addressed § 1533(a)(1)(B) (overutilization for recreational purposes)).

The Plaintiffs make only an abbreviated argument that the Service failed to consider all five factors, apparently referring only to the statutory factor of habitat destruction, 16 U.S.C. § 1533(a)(1)(A). The Plaintiffs argue that the 2014 Determination did not address issues such as

“habitat fragmentation, isolation, or lost historic range.” (# 76 at 36.) For the reasons discussed above, the Court rejects this argument. The Service clearly considered these factors and incorporated them into its analysis.

4. Failure to Consider Lost Historic Range

The Plaintiffs’ final argument purports to challenge the SPR Interpretation itself. The Plaintiffs offer two arguments on this issue. First, the Plaintiffs argue that the Court should follow the analysis of two other District Courts that have found the SPR Interpretation to conflict with the ESA. (# 76 at 37–38 (citing *Center for Biological Diversity v. Jewell*, 248 F. Supp. 3d 946 (D. Ariz. 2017); *Desert Survivors v. Dep’t of Interior*, 321 F. Supp. 3d 1011 (N.D. Cal. 2018)).) Second, the Plaintiffs argue that the SPR Interpretation violates the ESA insofar as it does not require the Service to consider a species’ loss of historic range.

Once again, the SPR language derives from the ESA’s requirement that agencies consider whether a species is “in danger of extinction throughout all or a significant portion of its range.” 16 U.S.C. § 1532(6). As noted above, the Service interprets the term *significant* to mean a portion of the species’ range whose “contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction” (or likely to become so in the foreseeable future) throughout its entire range. 79 Fed Reg. at 37,578. Thus, the Service finds a portion of a species’ range to be significant if, but for that portion, the entire population of the species would be in danger of extinction.

The Plaintiffs’ first argument — relying on *Biological Diversity* and *Desert Survivors* — is minimally developed. The Plaintiffs state simply that “two district courts have found this definition of significance unlawful because it fails to give independent meaning to the phrase ‘significant portion of range’ compared to ‘throughout all’ of a species range,” then cite to the

two District Court decisions (as well as a cite to *Defenders of Wildlife v. Norton*, 258 F.3d 1136 (9th Cir. 2001)). (# 76 at 37.) The Plaintiffs offer no separate analysis of these cases, no argument as to why (much less whether) this Court should adopt the reasoning of those courts, or any argument as to how the Service’s application of an incorrect standard in *this* case actually affected its analysis of the question of whether the Trout should be listed. The Court declines the Plaintiffs’ invitation to begin its own dialogue with *Biological Diversity*, *Desert Survivors*, or any other case. Whether those cases’ reasoning is persuasive or their outcomes correct is a question that requires far more development than the Plaintiffs have provided here. Accordingly, the Court rejects any argument by the Plaintiffs that this Court should review the Service’s SPR Interpretation on this basis as insufficiently developed.

That leaves the Plaintiffs’ argument that the Service’s SPR Interpretation fails to give adequate consideration to a species’ lost historic range. The SPR Interpretation discusses the question of historical range in some depth, explaining that the Service construes the ESA in the present and future tense — that a species “*is in danger*” of extinction — and thus, the statutory language must refer to current, not historical, range. The Service goes on to explain that it *will* “take into account . . . the effects that loss of historical range may have on the current and future viability of the species” when assessing other risk factors, such as reduced populations, changes in reproductive rates, and loss of genetic diversity. 79 Fed. Reg. at 37,583–84. And the Court is satisfied that the Service did indeed consider the loss of the Trout’s historical range in both the 2008 and 2014 Determinations. Both determinations extensively acknowledge the fact that the Trout has lost 90% of its historical range and that its current habitat fragmentation presents substantial risks to the species’ ability to recover from unexpected harmful events, and it is clear

that the Service factored those concerns into its models of Trout populations in the future.⁷ Thus, the Court rejects any contention by the Plaintiffs that the Service failed to consider the loss of historical Trout range when conducting the 2014 analysis.

VI. CONCLUSION

For the foregoing reasons, the 2014 Determination is **VACATED IN PART** and **REMANDED** to the Service for the limited purpose of explaining the Service's reason for concluding in 2014 that populations of less than 2,500 Trout can be considered stable and healthy. In all other respects, the 2014 Determination is **AFFIRMED**. Judgment shall issue in favor of the Plaintiffs and the Clerk shall close this case.

Dated this 26th day of September, 2019.

BY THE COURT:



Marcia S. Krieger
Senior United States District Judge

⁷ The Service clearly disagrees, however, with the conclusion that the Plaintiffs draw from these facts, namely that at “just 10 percent of its historic range, the Trout’s distribution and abundance cannot sustain its remaining populations.” (# 76 at 40.)