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12 **UNITED STATES DISTRICT COURT**  
 13 **CENTRAL DISTRICT OF CALIFORNIA**

14 WILDEARTH GUARDIANS, )  
 15 )  
 16 )  
 17 Plaintiff, )  
 18 )  
 19 v. )  
 20 SCOTT DE LA VEGA,<sup>1</sup> in his official )  
 capacity as U.S. Secretary of the Interior, and )  
 21 UNITED STATES FISH AND WILDLIFE )  
 SERVICE, )  
 22 )  
 23 Defendants. )  
 24 \_\_\_\_\_ )  
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 26 )  
 27 \_\_\_\_\_ )

Case No. 2:19-cv-9473

**FEDERAL DEFENDANTS’  
 COMBINED RESPONSE  
 TO PLAINTIFF’S MOTION  
 FOR SUMMARY  
 JUDGMENT AND  
 CROSS-MOTION FOR  
 SUMMARY JUDGMENT**

Date: June 7, 2021  
 Time: 1:30 PM

28 <sup>1</sup> Pursuant to Federal Rule of Civil Procedure 25(d), Scott de la Vega, Acting Secretary of the U.S. Department of the Interior, is automatically substituted for David Bernhardt.

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**INTRODUCTION**

1  
2 The record before the Court fully supports the U.S. Fish and Wildlife Service’s  
3 (“the Service”) determination pursuant to Section 4 of the Endangered Species Act  
4 (“ESA”) that listing the two species of Joshua Tree as threatened or endangered  
5 species is “not warranted.” *See* 84 Fed. Reg. 41,694, (Aug. 15, 2019). The Service  
6 thoroughly reviewed the best available scientific and commercial data on potential  
7 threats to the Joshua Tree and concluded that none of those threats, either  
8 individually or in combination, placed the species in danger of extinction, or made  
9 them likely to become in danger of extinction in the foreseeable future, throughout all  
10 or a significant portion of their ranges ("SPRs"). In doing so, the Service utilized its  
11 discretion to weigh available information and make its own informed decisions as to  
12 what constitutes the best scientific and commercial data available. Plaintiff fails to  
13 carry its high burden of showing that these determinations were arbitrary or  
14 capricious. The Court should enter summary judgment in favor of Defendants.

**BACKGROUND**

**I. Statutory and Regulatory Background**

21  
22 Congress enacted the ESA in 1973 “to provide a means whereby the  
23 ecosystems upon which endangered species and threatened species depend may be  
24 conserved, [and] to provide a program for the conservation of such endangered  
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1 species and threatened species[.]” 16 U.S.C. § 1531(b). The ESA directs the Secretary<sup>2</sup>  
2 to determine which species should be listed as threatened or endangered. *Id.* §  
3 1533(a)(1). An endangered species is one that “is in danger of extinction throughout  
4 all or a significant portion of its range.” *Id.* § 1532(6). A threatened species is one  
5 “likely to become an endangered species within the foreseeable future throughout all  
6 or a significant portion of its range.” *Id.* § 1532(20).  
7  
8

9 The “listing” of a species as endangered or threatened under ESA Section 4  
10 may occur in one of two ways—either through a “petition process” or of the Service’s  
11 own accord. In the latter scenario, the Service initiates the listing of a species as  
12 threatened or endangered. In the petition process, any interested person may petition  
13 the Service to list a species as threatened or endangered. *Id.* § 1533(b)(3)(A).  
14  
15

16 The petition process is described in detail in ESA Section 4(b)(3). *Id.* §  
17 1533(b)(3)(A). “To the maximum extent practicable, within 90 days after receiving” a  
18 petition, the Service must “make a finding as to whether the petition presents  
19 substantial scientific or commercial information indicating that the petitioned action  
20 may be warranted.” *Id.* This finding is published in the Federal Register. If the  
21 Service determines that a petition to list a species presents substantial information  
22 indicating that the listing “may be warranted,” it promptly commences a status review  
23 of the species. *Id.*  
24  
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27 \_\_\_\_\_  
28 <sup>2</sup> The Secretary of the Department of the Interior has jurisdiction over the Joshua Tree. The Secretary has delegated his ESA responsibilities to the Service. *See* 50 C.F.R. § 402.01(b).

1 After engaging in a status review, within 12 months after receipt of the listing  
2 petition, the Service must make one of three findings—that the listing is “warranted,”  
3 “not warranted,” or “warranted but precluded” by other listing activity. 16 U.S.C. §  
4 1533(b)(3)(B). If the Service finds that the listing is not warranted, the Secretary  
5 publishes the finding in the Federal Register and no further action is required.  
6

7  
8 If the Service finds that the listing is warranted, it must promptly publish in the  
9 Federal Register “a general notice and the complete text” of a proposed rule to list the  
10 species. *Id.* § 1533(b)(3)(B)(ii), (b)(5)(A)(i). Within one year of the publication of the  
11 proposed rule, the Service must publish a final regulation placing the species on the  
12 endangered or threatened list, notice that the proposed rule is being withdrawn, or  
13 notice that, due to a substantial disagreement regarding the sufficiency or accuracy of  
14 the available data the Service is extending by up to six months the timeline for making  
15 the determination. *Id.* § 1533(b)(6)(A).  
16  
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18  
19 Under ESA Section 4, a species may warrant listing because of any of the  
20 following five factors:

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

26 *Id.* § 1533(a)(1). A species warrants listing if it meets the definition of an endangered  
27 species at ESA Section 3(6) or the definition of a threatened species at section ESA  
28

1 Section 3(20)—that is, if the species is “in danger of extinction throughout all or a  
2 significant portion of its range,” or is “likely to become an endangered species within  
3 the foreseeable future throughout all or a significant portion of its range.” *Id.* §§  
4 1532(20), 1533. The Service makes this determination  
5

6 solely on the basis of the best scientific and commercial data available to  
7 him after conducting a review of the status of the species and after  
8 taking into account those efforts, if any, being made by any State or  
9 foreign nation, or any political subdivision of a State or foreign nation,  
10 to protect such species, whether by predator control, protection of  
11 habitat and food supply, or other conservation practices, within any area  
12 under its jurisdiction; or on the high seas.

13 § 1533(b)(1)(A).

## 14 **II. Statement of Facts**

15 The Joshua Tree is made up of two genetically distinct species, *Yucca brevifolia*  
16 (“*Y. brevifolia*”) and *Yucca jaegeriana* (“*Y. jaegeriana*”), each of which differs in vegetative  
17 and floral morphology and has its own yucca moth pollinator. Administrative Record  
18 (“AR”) 006930, AR006970, AR012018. The Joshua Tree habitat occurs in a diverse  
19 array of five regions where temperature, soil type, geography, rainfall and vegetation  
20 widely vary. AR006981–86. Accordingly, it generally occurs in elevations between 600  
21 to 2200 meters, AR006973, and areas that receive between 3.24 and 29.06 inches of  
22 annual rainfall, and can tolerate temperature ranges between 12 °F to 138 °F.  
23 AR006992. It occupies more than 12 million acres throughout the desert grasslands  
24 and shrub communities of the Mojave Desert, Great Basin Desert, and Sonoran  
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1 Desert, AR006973-75, AR006977-79, AR011755, approximately 78% of which is  
2 either owned or managed by federal or state agencies, which provide protections and  
3 limit habitat disturbance, AR006942-43, AR006977-79, AR007059, AR007942,  
4 AR008214.  
5

6 On August 15, 2019, the Service determined that listing the Joshua Tree as  
7 threatened or endangered under the ESA was not warranted due to the species' long  
8 lifespan, large ranges and distributions—which are mostly found on federal lands  
9 where it is protected or managed for conservation—and its ability to occupy  
10 numerous ecological settings. 84 Fed. Reg. at 41,694, 41,697. In making its 12-month  
11 findings, the Service reviewed the best available scientific and commercial data and  
12 compiled the information in a Species Status Assessment Report (“SSA”).  
13

14 AR006957-7084.  
15

16 In the SSA, the Service thoroughly analyzed potential current and future threats  
17 including wildfires, invasive plants, habitat loss, and climate change (including  
18 prolonged drought). AR007053-54 (*Y. brevifolia*), AR007066-68 (*Y. jaegeriana*). To  
19 assess the species' potential future condition, the Service ran two increased  
20 temperature scenarios and determined that species expansion north and westward  
21 could potentially counteract projected southern range contractions, AR007040, and  
22 identified areas within the predicted southern range contraction where the Joshua  
23 Tree would continue to persist. AR007014. It determined that in a majority of the  
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1 current range, where there have historically been long fire return intervals of 300 to  
2 500 years, wildfires did not pose a significant threat to the species as a whole.  
3 AR007000-01, 007012-13. While there are no standardized long-term demographic  
4 studies of the Joshua Tree range, the Service examined National Park Service surveys  
5 and other studies to determine that recent recruitment events of the Joshua Tree  
6 throughout the Mojave Desert have been documented. AR006966–007022,  
7 AR007027.

10 Taking into account the information in the SSA, the Service then assessed  
11 whether these species are likely to become endangered within the foreseeable future  
12 throughout all or a significant portion of their ranges in a Species Status Review  
13 Form. AR006927-53. For purposes of its 12-month findings, the Service used 80  
14 years as the timeframe for the “foreseeable future” based on the limitations of the  
15 existing projected climate models. AR006949, AR007032. It defined the phrase  
16 “significant portion of its range” based on the statutory text of the ESA and court  
17 opinions involving other listing decisions. AR006950-52. The Service determined  
18 that although individual trees could be impacted by threats including wildfire, climate  
19 change, and habitat loss, the threats to *Y. jaegeriana* were not likely to affect the species  
20 at a population or species level, and that there was no portion of the range where any  
21 threats were more concentrated at a “biologically meaningful” scale than in other  
22 portions of its range. AR006951. The Service did determine that the area along the  
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1 western edge of the southern population of *Y. brevifolia* would face biologically  
2 significant threats from wildfire and habitat loss from development, but that this area  
3 was not unique or biologically different from other areas supporting this population  
4 and was not significant as it was a “very small percentage” of the total area occupied  
5 by *Y. brevifolia* in its southern population. AR006951-52. Based on its review of the  
6 best available scientific and commercial information, the Service concluded that *Y.*  
7 *brevifolia* and *Y. jaegeriana* were not in danger of extinction or likely to become  
8 endangered within the foreseeable future throughout all or a significant portion of  
9 their ranges and so listing was not warranted. AR006953.

10 On November 4, 2019, Plaintiff challenged the listing decision, alleging that the  
11 Service violated the ESA by failing to use the best available science in its  
12 determination. Both parties’ motions for summary judgment are now before the  
13 Court.

### 14 **STANDARD OF REVIEW**

15 The ESA contains no internal standard or scope of review, and so the default  
16 standard and scope set forth in the Administrative Procedure Act (“APA”) applies. *See*  
17 *United States v. Carlo Bianchi & Co.*, 373 U.S. 709, 715 (1963) (“[I]n cases where  
18 Congress has simply provided for review, without setting forth the standards to be  
19 used or the procedures to be followed, this Court has held that consideration is to be  
20 confined to the administrative record and that no de novo proceeding may be held.”)

1 (citations omitted). The APA states that a court may only set aside agency action that  
2 it finds is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance  
3 with law.” 5 U.S.C. § 706(2)(A). The Court’s role “is simply to ensure that the agency  
4 has adequately considered and disclosed the environmental impact of its actions and  
5 that its decision is not arbitrary or capricious.” *Balt. Gas & Elec. Co. v. Nat. Res. Def.*  
6 *Council, Inc.* 462 U.S. 87, 97-98 (1983) (citation omitted). In addition, where, as here,  
7 an agency’s technical expertise is involved, “a reviewing court must generally be at its  
8 most deferential.” *Id.* at 103 (citations omitted). In accordance with the plain language  
9 of APA Section 706, judicial review is limited to the agency’s administrative record.  
10 “[T]he reviewing court shall ... hold unlawful and set aside agency action, findings,  
11 and conclusions found to be--(A) arbitrary, capricious, an abuse of discretion or  
12 otherwise not in accordance with law... In making the foregoing determinations, the  
13 court shall review the *whole record or those parts of it cited by a party.*” 5 U.S.C. § 706  
14 (emphasis added). *See also Camp v. Pitts*, 411 U.S. 138, 142 (1973) (“[T]he focal point  
15 for judicial review should be the administrative record already in existence, not some  
16 new record made initially in the reviewing court.”).

### 23 ARGUMENT

24 Plaintiff asks this court to second-guess the expertise of the Service in  
25 determining which methods and models to rely upon in making its 12-month findings.  
26 The Court should decline to do so. The record makes clear that, in accordance with  
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1 the ESA, the Service carefully and thoroughly considered the effects of multiple  
2 stressors independently and cumulatively in coming to its determination that listing  
3 the Joshua Tree was not warranted.  
4

5 **A. The Service properly considered how stressors including climate**  
6 **change, invasive grasses, and wildfires would affect the Joshua Tree**  
7 **in accordance with the best available science standard of the ESA**

8 The Service’s listing decision is supported by the best available science  
9 concerning threats from stressors including climate change, invasive grasses, and  
10 wildfires.  
11

12 **1. Climate Change**

13 The Service thoroughly analyzed how climate change would affect the Joshua  
14 Tree. Admittedly, the Service did not use species distribution models (“SDMs”) to  
15 evaluate extinction risk. But that is because it determined that existing models used  
16 limited Joshua Tree distribution data that could not be reliably extrapolated to predict  
17 future distribution across the entire range of the Joshua Tree and make a quantitative  
18 assessment of how suitable habitat for the Joshua Tree would change under future  
19 climate scenarios. AR007036. Additionally, range-wide demographic data to validate  
20 an SDM is not available. AR007019-20.  
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23 Furthermore, because successful establishment of new Joshua Tree seedlings  
24 happens only a few times in a century, studies make clear that short-term,  
25 demographic monitoring does not capture the time frame necessary to determine  
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1 viability of the species. AR008989 (Esque et al. (2015)); AR007986 (Comanor & Clark  
2 (2000) concluding that “[i]t appears that 20 years is not adequate time to appreciate  
3 the demographic changes of this species.”)

4  
5 The best scientific data that the Service did have showed that the Joshua Tree  
6 would not likely be adversely affected by climate change to the point that it would  
7 warrant listing. For example, the record is replete with studies that show species  
8 survival could actually be enhanced in a future with elevated carbon dioxide levels. *See*  
9 *e.g.*, AR009032-45 (Garfin et al. (2014) study demonstrating that seedlings for *Y.*  
10 *brevifolia* in elevated carbon dioxide conditions could tolerate temperatures as low as  
11 10.58 °F); AR016161-84 (Notaro et al. (2012) study using a combined dynamic  
12 modeling and bioclimatic-envelope approach to show that projected climate changes  
13 would lead to a “robust range expansion” for *Y. brevifolia*); AR016120-28 (Huxman et  
14 al. (1998); increase in carbon dioxide that mirrored increased atmospheric carbon  
15 dioxide led to increased photosynthesis in *Y. brevifolia*); AR016841 (Polley et al. 2013;  
16 finding that elevated atmospheric carbon dioxide would stimulate plant growth and  
17 reduce effects of drying in warmer climate); AR007219-25 (Archer & Predick (2008);  
18 study that increase in atmospheric carbon dioxide could promote Joshua Tree  
19 seedling survival).

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26 There are also scientific studies containing climate change modeling that show  
27 the resiliency of the Joshua Tree. For example, Blatrix et al. (2013) mentions that  
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1 paleodistribution models and paleorecords indicate that in past cycles of glaciation,  
2 the interdependent Joshua Tree and its pollinating moths responded concomitantly in  
3 terms of population expansion and migration. AR016058. Likewise, Barrows and  
4 Murphy-Mariscal (2012) utilized climate change modeling to find strong seedling  
5 recruitment occurring in Joshua Tree National Park, AR007515, contradicting  
6 Plaintiff's unidimensional argument that Joshua Trees have an inability to reproduce  
7 and recruit in the face of climate change, Plaintiff's Motion for Summary Judgment &  
8 Supporting Memo ("Pl.'s Mot.") at 23. Plaintiff also cites to Dole et al. (2003) as  
9 purported evidence that the species' slow dispersal rate will inhibit its ability to fill  
10 new habitat, Pl.'s Mot. at 6, but the study actually found possible range expansion due  
11 to projected increases in atmospheric carbon dioxide. AR019635-44; *see also*  
12 AR009161-75 (Holmgren (2009); study using radiocarbon dated middens containing  
13 plant material to determine that Joshua Tree historically had a more expansive  
14 distribution, thus contradicting Plaintiff's assertion that Joshua Tree cannot colonize  
15 new habitats). A 14-year period census on the age and population structure of *Y.*  
16 *brevifolia* in the northwestern Mojave Desert (Gilliland et al. (2006)) shows that the  
17 overall annual survival rate of the Joshua Tree was 0.992, with 50% of individuals  
18 surviving up to 89 years and 5% surviving up to 383 years. AR009051. That species  
19 census also found that the Joshua Tree had recruited young trees recently and  
20 established new trees frequently over the last century, AR009052, undermining  
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1 Plaintiff's assertion that all studies have found no new seedling establishment or  
2 recruitment. Pl.'s Mot. 2.

3  
4 Plaintiff attempts to frame Smith et al. (1983) as the sole study that the Service  
5 used as evidence for Joshua Tree temperature resilience, Pl.'s Mot. at 16-17, but the  
6 record demonstrates that the Service considered other studies related to temperature  
7 tolerance and noted that Smith et al. (1983) provided a data point indicative of the  
8 temperature range for the species. AR006981-92. Laboratory studies such as Smith  
9 et al. 1983 helped the Service paint a fuller view of the Joshua Tree's future viability.  
10  
11

12 This demonstrates the comprehensive approach that the Service took in  
13 analyzing the many scientific studies on the Joshua Tree. In contrast, Plaintiff  
14 misleadingly simplifies the studies utilizing SDMs that it relies on for the bulk of its  
15 argument.  
16

17 First, Plaintiff alleges that the Service "simply discounts" the climate modeling  
18 in Barrows and Murphy-Mariscal (2012), Pl.'s Mot. at 12, but even though the study  
19 only looks at one small portion of the Joshua Tree's range, the Service still clearly  
20 addressed the modeling in the 2012 study. At multiple points in the record the  
21 Service discusses that the model finds reduced Joshua Tree survival, recruitment, and  
22 distribution. *See* AR007001 (noting the 90% projected decline in Joshua Tree  
23 distribution under the most extreme climate scenario modeled in Barrows and  
24 Murphy-Mariscal (2012), AR007014, AR007037. Barrows and Murphy-Mariscal  
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1 (2012) also identified the climate refugia where Joshua Trees would persist and  
2 observed there was no climate-related mortality found among the Joshua Trees and  
3 considerable tree seedling recruitment. AR007002, AR007507, AR007509,  
4 AR007515. Notably, in his review of the SSA during the peer review process, Dr.  
5 Barrows himself described the SSA as a “comprehensive review of the known  
6 biology/ecology” of the Joshua Tree, and encouraged the Service to give greater  
7 consideration to data that ran contrary to Plaintiff’s position that Dr. Barrows’  
8 modeling supports finding a greater level of threat to the species. Dr. Barrows noted  
9 that the SSA omitted data from his 2012 paper showing that Joshua Trees could  
10 persist in the southern portion of its range, and explained that recent research in that  
11 southern range corroborated his 2012 findings. AR007507, AR021521.

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16 Second, Plaintiff points to Notaro et al. (2012) as an example of a study that  
17 shows the “myriad ways” that climate change detrimentally affects the Joshua Tree.  
18 Pl.’s Mot. 5. But climate change projections in Notaro’s study actually led to a  
19 “robust range expansion” for *Y. brevifolia*. AR016174. Similarly, Plaintiff relies on  
20 Shafer et al. (2001) as a study that uses climate change models that assume a 1%  
21 annual increase in greenhouse gases as one that shows complete extirpation of the  
22 Joshua Tree in its range. Pl.’s Mot. at 11. But a closer look demonstrates that the  
23 study shows significant expansion north and westward with increasing temperatures,  
24 and contraction only in the southern and central range. AR016600-16.  
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1 Third, Plaintiff discusses at some length the Service's decision to omit from the  
2 SSA a non-peer-reviewed abstract Cornett presented at a 2014 symposium. Pl.'s Mot.  
3 at 23. But in the final SSA the Service cited Cornett (2017), a draft paper by that same  
4 author, to indicate that adult Joshua Trees are more likely to withstand drought  
5 periods than non-reproducing Joshua Trees. AR006991. Notably, the Cornett (2017)  
6 study looks at 10 one-hectare sites across the Joshua Tree range and *includes* the  
7 information presented in the Cornett (2014) symposium paper, which was confined to  
8 a one-hectare site in the Lost Horse Valley of Joshua Tree National Park. AR008170.  
9 Also notable is that the Cornett (2017) study discusses the use of SDMs and states  
10 clearly that "to date no empirical data has been presented supporting or rejecting the  
11 efficacy of the models," *id.*, further supporting the Service's decision not to rely on  
12 these models.  
13

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17 Throughout its brief, Plaintiff seizes upon the comments by peer reviewer Dr.  
18 Smith to argue that the Service ignored the effects of climate change on successful  
19 germination and recruitment. Pl.'s Mot. at 21-22. Plaintiff's argument is unavailing.  
20 As a threshold matter, Dr. Smith is an evolutionary biologist who has not constructed  
21 his own SDM for Joshua Tree, but criticized the Service for not incorporating other  
22 researchers' SDMs. AR021813. Scientists who are experts in SDMs such as Dr. Loik,  
23 AR005217-21, and Dr. Barrows, AR005128, were also peer reviewers on the SSA but  
24 did not voice the same concerns as Dr. Smith about the predictive distribution models  
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1 used. Therefore, to the extent the Service disagreed with Dr. Smith's comments  
2 regarding the appropriateness of using SDMs, it was entirely reasonable.

## 3 **2. Wildfires**

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5 Regarding the threat of wildfires, Plaintiff states that, "The record evidence  
6 shows fire has already burned large swaths of Joshua tree habitat," and that this  
7 "negative" trend would "continue throughout a significant portion of the Joshua  
8 Tree's range." Pl.'s Mot. at 18. But studies do not support this argument that Joshua  
9 Tree populations are currently in decline, or will be, because of an increase in fire size  
10 and frequency.<sup>3</sup> For example, Defalco and Esque 2010, which Plaintiff relies on to  
11 argue that the Service "dismissed and downplayed" threats from wildfire, concludes  
12 that adult trees showed fire resiliency by resprouting in burned areas and that, as a  
13 result, the Joshua Tree could "quickly re-establish as productive adults." AR008197-  
14 98. Plaintiff also uses Defalco and Esque 2010 to argue that wildfires will kill all size  
15 classes of *Y. brevifolia*, Pl.'s Mot. at 18. However, that study examined fire resiliency  
16 only in adult Joshua Trees. AR008197-98. It therefore cannot be used, as Plaintiff  
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23 <sup>3</sup> Plaintiff paints as "very troubling" the "inexplicabl[e]" and "dramati[c]" decrease from the  
24 draft SSA to the final SSA of the amount of Joshua Tree habitat that the Service classified as  
25 moderate to high risk of invasive grass cover. Pl.'s Mot. at 20. In the SSA, the Service used  
26 data from the Bureau of Land Management's Mojave Basin and Range Rapid Ecoregional  
27 Assessment that models the potential abundance of invasive grass within Joshua Tree  
28 populations to assist in projecting future habitat conditions associated with future fire frequencies  
for Joshua Tree. AR007034. While there was an error in the process used to calculate the  
percentage of Joshua Tree population acres within each invasive grass cover in the initial SSA,  
the final SSA includes the correct numbers. See AR003022.

1 attempts to, as support for the assertion that wildfires mean that the Joshua Tree  
2 population as a whole will shift to older, taller trees with reduced recruitment, Pl.'s  
3 Mot. at 22-23. Similarly, Brooks and Matchett (2006), which Plaintiff uses as evidence  
4 of a new fire regime, only made predictions of wildfire based on available data from  
5 1980–2004, a period of high drought and frequent wildfires. AR007845-61. Brooks  
6 and Matchett (2006) is also an example of the conflicting scientific information that  
7 the Service delved into in making its 12-month findings: while Cornett (2014) found  
8 that there was no new recruitment in its one-hectare study area, AR016091-94, Brooks  
9 and Matchett (2006) found evidence of recruitment, AR007845-61.

13 By the same token, Plaintiff relies on the assessment in Comer et al. 2013 to  
14 argue that the Service made an “about face” on the threat of invasive grasses and  
15 wildfire, Pl.'s Mot. at 19, but fail to note the study's own acknowledgement of the  
16 high unreliability of fire projections and that fire projections do not predict dramatic  
17 changes in current fire regimes from now to 2060. AR008116. The models in Comer  
18 et al. (2013) also project a range expansion in the north and western range of the  
19 Joshua Tree, AR008136, belying Plaintiff's reliance on it to show only range  
20 contractions, Pl.'s Mot. at 5.

24 Plaintiff's argument that the Service “dismissed critical feedback from . . . sister  
25 federal agencies,” *see* Pl.'s Mot. at 1, is belied by the reports themselves. For example,  
26 a 2003 U.S. Geological Survey study used repeat photography of burned and  
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1 unburned study areas in a Nevada test site to demonstrate that Joshua Trees are a  
2 relatively fast-growing and medium-lived species, thereby showing that wildfires do  
3 not necessarily lead to widespread mortality of Joshua Trees. AR014359; *see also*  
4 AR014298-307 (United States Air Force study on Joshua Tree survivorship using light  
5 detection and ranging data, photogrammetry analysis, and geographic information  
6 system analysis indicated that over a 25-year period, severe burn stressors did not  
7 diminish the Joshua Tree populations on Edwards Air Force Base).

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9  
10 The preceding discussion is but a smattering of the thousands of pages of  
11 complex, often conflicting, scientific studies, peer review comments, and public input  
12 from other state and federal agencies that the Service sifted through in making its 12-  
13 month findings. Instead of acknowledging this complexity, Plaintiff advances  
14 misleading generalizations in its argument about those studies. *See e.g.* Pl's Mot. at 22  
15 (citing to Esque et al. (2015) as evidence that using current distribution to identify  
16 suitable habitat for the species is inappropriate because long-lived as Joshua Tree  
17 adults may mask climate change effects, but the study had a sample size of 53 pre-  
18 reproductive *Y. brevifolia* in one study area of Yucca Flat, Nevada); *Id.* at 14  
19 (contending that the SDMs, ecological niche models, and finer scale data all reached  
20 similar results, even though one study found that fine scale climate refugia remained  
21 in Joshua Tree National Park (Barrows and Murphy-Mariscal (2012)), another study  
22 found that there was a large contraction in Joshua Tree National Park (Cole et al.  
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1 2011), and still another study found that there was robust range expansion with  
2 increased atmospheric carbon dioxide (Dole et al. 2003)).

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4 Ultimately, while the varying types of modeling that the Service analyzed in  
5 making its 12-month findings are complex, the record makes clear that the Service  
6 evaluated the impacts from the many threats facing the Joshua Tree as well as the  
7 synergistic impacts of those threats whenever there was sufficient data available to  
8 draw conclusions. *See* AR007049 (table outlining examples of potential synergistic  
9 effects including habitat loss, climate change, and invasive grass cover and altered fire  
10 return interval). It is when the agency is “choosing between various scientific  
11 models” that “deference to agency determinations is at its greatest.” *San Luis & Delta-*  
12 *Mendota Water Auth. v. Jewell*, 747 F.3d 581, 610 (9th Cir. 2014) (citing *Nw. Coal for Alts.*  
13 *to Pesticides (NCAP) v. EPA*, 544 F.3d 1043, 1050 (9th Cir. 2008)).

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17 *Center for Biological Diversity v. Zinke*, 868 F.3d 1054 (9th Cir. 2017) is instructive.  
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19 There, the Court rejected the plaintiff’s allegation that the Service had “ignored  
20 climate change as a factor,” and held that the Service had “directly addressed climate  
21 change” in finding that climate change was not a “significant threat” to the Sonoran  
22 Desert Area Bald Eagle due to its high adaptability, which the Service concluded  
23 would allow the eagle to “continue to exist even under some of the possible effects  
24 from climate change.” *Id.* at 1062 (citation omitted). In *Zinke*, the Ninth Circuit  
25 made clear that it “must defer to the [Service’s] interpretation of complex scientific  
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1 data.” *Id.* at 1061 (citing *Nw. Ecosystem All. v. U.S. Fish & Wildlife Serv.*, 475 F.3d 1136,  
2 1150 (9th Cir. 2007)).

3 Here, the Service clearly explains why it chose to rely on certain climate change  
4 studies rather than those containing the SDMs that Plaintiff favors. “Because analysis  
5 of the relevant documents ‘requires a high level of technical expertise,’ [the Court]  
6 must defer to ‘the informed discretion of the responsible federal agencies.’” *Marsh v.*  
7 *Or. Nat. Res. Council*, 490 U.S. 360, 377 (1989) (quoting *Kleppe v. Sierra Club*, 427 U.S.  
8 390, 412 (1976)); *see also San Luis*, 747 F.3d at 618 (the Fish and Wildlife Service’s  
9 choice of which water flow model to use where “no superior set of models have been  
10 identified” was a ‘scientific determination’ . . . that ‘requires a high level of technical  
11 expertise,’ and so the court “must be at [its] most deferential in reviewing” the agency  
12 decision based on the models) (citations omitted). What is before the Court is the  
13 Service’s expert interpretation of multiple methodologies to determine the effects of  
14 climate change to the Joshua Tree. Plaintiff refuses to defer to the Service’s  
15 determination of which studies and models to use, even though such a decision is  
16 “well within [the Service’s] discretion.” *San Luis*, 747 F.3d at 610. Indeed, this is  
17 exactly the type of case where a high degree of deference is afforded to the agency.  
18 *See Alaska Oil & Gas Ass’n v. Pritzker*, 840 F.3d 671, 679 (9th Cir. 2016) (Ninth Circuit  
19 stressing that the court “‘must defer to the agency’s interpretation of complex  
20 scientific data’ so long as the agency provides a reasonable explanation for adopting  
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1 its approach and discloses the limitations of that approach.”); *San Luis*, 747 F.3d at  
2 619 (finding that Fish and Wildlife Service adequately explained why it chose certain  
3 models and their possible limitations) (citation omitted); *Trout Unlimited v. Lohn*, 559  
4 F.3d 946, 959 (9th Cir. 2009) (“[a]ssessing a species’ likelihood of extinction involves a  
5 great deal of predictive judgment . . . entitled to particularly deferential review,” and  
6 an agency is “entitled to decide between conflicting scientific evidence.”) (citations  
7 omitted). In *Kern County Farm Bureau v. Allen*, 450 F.3d 1072, 1080 (9th Cir. 2006), the  
8 Ninth Circuit made clear that the “best available data requirement ‘merely prohibits  
9 [an agency] from disregarding available scientific evidence that is in some way better  
10 than the evidence [it] relies on’” and that the Service satisfied its duty under the best  
11 available science standard where it “thoroughly evaluated and incorporated the data”  
12 from contrary studies in “making its listing decision.” *Id.* at 1080-81 (alterations in  
13 original) (citation omitted). That is what the Service did in making these 12-month  
14 findings, and the Court should uphold its determinations.

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20 The Court should reject Plaintiff’s improper attempt to transform this case into  
21 a “battle of the experts,” and uphold the Service’s listing decision as one that  
22 articulates a rational connection between the facts found and the choice made and is  
23 supported by best available science.  
24

25  
26 **B. The Service’s consideration of existing regulatory mechanisms was**  
27 **rational**  
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1 The Service rationally determined the Joshua Tree did not warrant listing due  
2 to the inadequacy of existing regulatory mechanisms surrounding climate change. The  
3 ESA requires the Service to determine whether a species is threatened or endangered  
4 based, in part, on “the inadequacy of existing regulatory mechanisms.” 16 U.S.C. §  
5 1533(a)(1)(D). The inadequacy of existing regulations cannot be determined in  
6 isolation, but must be evaluated against the extent and nature of threats facing the  
7 species. *Greater Yellowstone Coal, Inc. v. Servheen*, 672 F. Supp. 2d 1105, 1113 (D. Mont.  
8 2009) (“When considering the inadequacy of existing regulatory mechanisms in the  
9 context of a petition to list a species, the question is whether the existing regulatory  
10 mechanisms are inadequate to prevent a species that is presumably decreasing in  
11 population from becoming threatened, endangered, or even extinct”) *aff'd in part, rev'd*  
12 *in part and remanded* 665 F.3d 1015 (9th Cir. 2011).

17 Here, the Service discussed the regulatory mechanisms affecting the Joshua  
18 Tree, evaluating those mechanisms across multiple states as well as federal and state  
19 agencies. AR006942-43. The Service concluded that regulatory mechanisms exist and  
20 provide substantial regulatory protections and some conservation benefits to the  
21 Joshua Tree and its habitat range wide. *Id.* Plaintiff’s only attack on the Service’s  
22 consideration of regulatory mechanisms is that the Service allegedly failed to address  
23 regulations pertaining to climate change. *See* Pl.’s Mot. at 25. But existing regulations  
24 can only be inadequate where they are insufficient to militate a species’ slide to  
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1 extinction. Here, the Service concluded in its individual evaluation of each factor, and  
2 in its evaluation of the cumulative impacts of all potential threats, that no data  
3 indicated such a slide was occurring for the Joshua Tree. AR006927-54. Since that  
4 conclusion is rational and supported by the record—and Plaintiff has offered no  
5 persuasive arguments to the contrary—the regulatory mechanisms at issue cannot be  
6 “inadequate” to prevent the species from sliding towards extinction. The Service’s  
7  
8 consideration of regulatory mechanisms was therefore lawful.  
9

10 **C. The Service’s finding that *Y. brevifolia* is not threatened throughout a**  
11 **significant portion of its range is reasonable and supported by the**  
12 **record.**

13 After determining that *Y. brevifolia* is not endangered or threatened throughout  
14 its range, the Service then considered whether *Y. brevifolia* may be endangered or  
15 threatened in a significant portion of its range (“SPR”). To determine if the species  
16 faced a greater level of imperilment in any portion of its range, the Service considered  
17 whether the threats analyzed and addressed in its range-wide analysis, including  
18 climate change, reduced recruitment, wildfires, and habitat loss, are geographically  
19 concentrated in any portions of the species’ range at a biologically meaningful scale.  
20 AR06951-52. The Service identified only one portion along the western edge of the  
21 southern population of *Y. brevifolia* that may be experiencing a concentration of  
22 threats related to wildfire and urban development and evaluated whether listing *Y.*  
23 *brevifolia* is warranted based on threats to that portion of its range. Ultimately, the  
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1 Service concluded that this area was not significant to *Y. brevifolia*'s range as it was not  
2 unique or biologically different than other areas supporting the southern population  
3 and it constitutes a "very small percentage" of the total area occupied by *Y. brevifolia* in  
4 its southern population. *Id.* The Service did not specifically address other threats in  
5 the SPR analysis, such as climate change and reduced recruitment, because it found  
6 that other threats are impacting *Y. brevifolia* in an essentially uniform manner  
7 throughout the remainder of the range, including in the rest of the range of the  
8 southern population. *Id.* Plaintiff's contentions that the Service failed to adequately  
9 consider threats of habitat loss, reduced recruitment, wildfire, and urban development  
10 in this area, as well as in the range of the southern population and the species' entire  
11 range, Pl.'s Mot. at 24-25, are meritless.

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16 At bottom, Plaintiff's primary argument is that because the Service allegedly  
17 failed to consider these threats in its range-wide determination, the Service necessarily  
18 failed to consider them in its SPR determination. This is what occurred in the case  
19 upon which Plaintiff primarily relies, *Defenders of Wildlife v. Jewell*, 176 F.Supp.3d 975  
20 (D. Mont. 2016). Pl.'s Mot. at 24. In that case, the court held the Service's treatment  
21 of denning-scale effects of climate change on the wolverine was arbitrary and  
22 capricious. 176 F.Supp.3d at 1005. In later evaluating the plaintiffs' SPR analysis, the  
23 court said this same error "compels the agency to revisit its SPR analysis" because the  
24 analysis "proceeded from a flawed premise." *Id.* at 1007. Here, in contrast, for all the  
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1 reasons provided above, *supra* Sec. A, the Service more than adequately considered the  
2 identified threats to *Y. brevifolia* both range-wide and with respect to the species the  
3 southern population, including along the western edge. Therefore, the Service's SPR  
4 analysis for *Y. brevifolia* is based on a thorough and reasonable consideration of the  
5 threats to *Y. brevifolia*.  
6

7  
8 Plaintiffs also allege that the predicted habitat loss within the southern  
9 population of *Y. brevifolia*, by itself, may represent an SPR for the species, Pl.'s Mot.  
10 25, and in doing so overstate the impact of potential habitat loss for *Y. brevifolia*.  
11

12 While the potential habitat loss in the southern population of *Y. brevifolia* is projected  
13 at 21.7% (Scenario I) and 41.6% (Scenario II), those numbers represent projected  
14 potential losses of approximately 13% and 26%, respectively, of *Y. brevifolia*'s total  
15 range. AR007047. Furthermore, while Scenario II projects an up to 41.6% loss of  
16 habitat in the southern population of *Y. brevifolia*, that loss would occur *throughout* that  
17 area (totaling approximately 3.7 million acres)—and the Service determined that the  
18 concentration of threats related to wildfire and urban development was only in the  
19 perimeter of the current mapped distribution along the urban-wildland interface of  
20 the western edge of the southern population. AR007001, AR007050. Thus, the  
21 Service's conclusion that the portion of the species' range facing a concentration of  
22 threats from wildfire and habitat loss is "a very small percentage" of the area occupied  
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1 by *Y. brevifolia* within its southern population is reasonable and supported by the  
2 record. AR006952.

3 For all these reasons, Plaintiff's SPR argument fails.  
4

5 **CONCLUSION**

6 Plaintiff fails to demonstrate that the Service's determination is arbitrary and  
7 capricious as required under the applicable deferential standard of review. *Motor*  
8 *Vehicle Mfrs. Ass'n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).  
9 The Court should defer to the Service's expertise with respect to the methodology it  
10 used to predict the effects of stressors including climate change, wildfires, and habitat  
11 loss on the species, uphold the Service's determination that listing the Joshua Tree  
12 under the ESA is not warranted, and grant summary judgment in favor of Federal  
13 Defendants and deny Plaintiff's cross-motion for summary judgment.  
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16

17 Dated: March 12, 2021

18 Respectfully submitted,

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