FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

DEFENDERS OF WILDLIFE, *Plaintiff-Appellant*, v. RYAN ZINKE, Secretary, Department of the Interior; JAMES W. KURTH, Acting Director, U.S. Fish and Wildlife Service; MICHAEL D. NEDD, Acting Director, Bureau of Land Management,[*] *Defendants-Appellees*, and SILVER STATE SOUTH SOLAR, LLC; SILVER STATE SOLAR POWER SOUTH LLC, *Intervenor-Defendants-Appellees*, and FIRST SOLAR, INC.; DESERT STATELINE, LLC, *Intervenor-Defendants*.	No. 15-55806 D.C. No. 2:14-cv-01656-MWF-RZ OPINION

[*] We substitute Ryan Zinke for Sally Jewell, James W. Kurth for Daniel M. Ashe, and Michael D. Nedd for Neil Kornze as Defendants-Appellees pursuant to Fed. R. App. P. 43(c)(2).

Appeal from the United States District Court
for the Central District of California
Michael W. Fitzgerald, District Judge, Presiding

Submitted February 17, 2017
Pasadena, California

Filed May 18, 2017

Before: MILAN D. SMITH, JR. and JOHN B. OWENS, Circuit Judges, and EDWARD R. KORMAN,[**] District Judge.

Opinion by Judge Milan D. Smith, Jr.

SUMMARY[***]

Endangered Species Act

The panel affirmed the district court's summary judgment in favor of the Secretary of the Department of the Interior and other federal officials in an action brought by the Defenders of Wildlife concerning the possible impacts of the Silver State South solar project on the desert tortoise.

Plaintiff alleged that defendants violated the requirements of the Endangered Species Act and the

[**] The Honorable Edward R. Korman, United States District Judge for the Eastern District of New York, sitting by designation.

[***] This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

Administrative Procedures Act by issuing a Biological Opinion analyzing the effect of the Silver State South solar project on the desert tortoise that was, among other things, arbitrary and capricious.

The panel first rejected plaintiff's contention that the Biological Opinion's determination that Silver State South would not result in jeopardy to the desert tortoise impermissibly relied upon unspecified remedial measures. The panel held that: (1) the Biological Opinion did not rely on mitigation measures to make its no jeopardy determination; and (2) this Circuit's precedents do not require mitigation measures to be identified or guaranteed when the mitigation measures themselves may be unnecessary.

The panel held that the Biological Opinion's determination that Silver State South was "not likely to adversely affect the critical habitat of the desert tortoise," which permitted the United States Fish and Wildlife Service to forego an adverse modification analysis, was neither arbitrary nor capricious.

The panel held that the Biological Opinion's failure to address the Fish and Wildlife Service's comments to a Supplemental Environmental Impact Statement was not arbitrary or capricious because the Supplemental Environmental Impact Statement and the Biological Opinion evaluated substantially different plans.

The panel held that because it could discern the Biological Opinion's reasoning in concluding that Silver State South would not have significant edge effects and the record supports this conclusion, the Biological Opinion's consideration of Silver State South's edge effects was not

arbitrary or capricious. The panel further held that the Biological Opinion did not establish an impermissibly vague trigger for reinitiating formal consultation over Silver State South.

The panel concluded that because the Biological Opinion was neither legally nor factually flawed, the Bureau of Land Management permissibly relied upon the Biological Opinion in approving of the right-of-way for Silver State South.

COUNSEL

Eric R. Giltzenstein (argued) and William N. Lawton, Meyer Glitzenstein & Eubanks, Washington, D.C., for Plaintiff-Appellant.

Varu Chilakamarri (argued), J. David Gunter II, and Andrew C. Mergen; John C. Cruden, Assistant Attorney General; Environment and Natural Resources Division, United States Department of Justice, Washington, D.C., for Defendants-Appellees.

George T. Caplan (argued), Los Angeles, California, for Intervenor-Defendants-Appellees.

Lori Potter and Nicholas Clabbers, Kaplan Kirsch & Rockwell LLP, Denver, Colorado, for Amicus Curiae Clark County.

OPINION

M. SMITH, Circuit Judge:

This case arises from the Bureau of Land Management (BLM)'s approval of a right-of-way on federal lands in Nevada for the construction of an industrial solar project, known as Silver State South, and the project's possible impact on the desert tortoise. Plaintiff Defenders of Wildlife (DOW) contends that the Department of the Interior, the U.S. Fish and Wildlife Service (FWS), and the BLM (collectively, the Federal Defendants) violated the requirements of the Endangered Species Act (ESA), 16 U.S.C. § 1531, *et seq.*, and the Administrative Procedures Act (APA), 5 U.S.C. § 706, by issuing a Biological Opinion (BiOp) analyzing the effect of Silver State South on the desert tortoise that was arbitrary, capricious, and an abuse of discretion, and subsequently relying on the BiOp to grant the right-of-way. The district court concluded that the BiOp fully complied with both the ESA and APA, and granted summary judgment for the Federal Defendants and Intervenor-Defendants Silver State Solar Power South, LLC and Silver State South Solar, LLC (collectively, Defendants). We affirm.

BACKGROUND

I. Statutory Framework

"The Endangered Species Act of 1973, 16 U.S.C. § 1531, *et seq.*, 'is a comprehensive scheme with the broad purpose of protecting endangered and threatened species.'" *Conservation Cong. v. U.S. Forest Serv.*, 720 F.3d 1048, 1050–51 (9th Cir. 2013) (quoting *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1106 (9th Cir. 2012)). The ESA tasks the Secretary of the

Interior and the Secretary of Commerce with identifying and maintaining a list of endangered and threatened species. 16 U.S.C. § 1533(a)(1)–(2). Endangered species are those "in danger of extinction throughout all or a significant portion of its range." *Id.* at § 1532(6). Threatened species are those "likely to become an endangered species within the foreseeable future." *Id.* at § 1532(20). The Secretary of the Interior is additionally charged with designating "critical habitat" for each listed species. *Id.* at § 1533(a)(3)(A)(i). Critical habitat is defined as (a) "specific areas within the geographical area occupied by the [endangered] species . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection," *id.* at § 1532(5)(A)(i), and (b) "specific areas outside the geographical area occupied by the species . . . [that] are essential for the conservation of the species," *id.* at § 1532(5)(A)(ii). However, critical habitat generally does "not include the entire geographical area which can be occupied by the threatened or endangered species." *Id.* at § 1532(5)(C).

Section 7(a)(2) of the ESA "affirmatively commands each federal agency to 'insure that any action authorized, funded, or carried out' by the agency 'is not likely to jeopardize the continued existence of any endangered species . . . or result in the destruction or adverse modification of habitat of such species.'" *Or. Nat. Res. Council v. Allen*, 476 F.3d 1031, 1033 (9th Cir. 2007) (quoting 16 U.S.C. § 1536(a)(2)). To comply with Section 7(a)(2), an agency proposing an action (the action agency) must first determine whether the action "may affect" an endangered or threatened species or its critical habitat. 50 C.F.R. § 402.14(a) (2016). If the action agency determines that its proposed action "may affect" an

endangered species or its critical habitat, the action agency must initiate formal consultation with either the FWS or the National Marine Fisheries Service (NMFS), as appropriate (collectively, the consulting agency). *Id.* Under certain circumstances, an action agency may bypass formal consultation. For example, the ESA's implementing regulations allow for informal consultation, "an optional process that includes all discussions, correspondence, etc., between [the action agency and the consulting agency], designed to assist the [action] agency in determining whether formal consultation . . . is required." *Id.* at § 402.13(a). "If during informal consultation it is determined by the [action] agency, with the written concurrence of the [consulting agency], that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary." *Id.*

But if formal consultation is required, "the consulting agency must prepare a biological opinion that advises the action agency as to whether the proposed action, alone or 'taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.'" *Conservation Cong.*, 720 F.3d at 1051 (quoting 50 C.F.R. § 402.14(g)(4)). Jeopardy to the continued existence of a listed species (jeopardy) "means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02. Destruction or adverse modification of critical habitat (adverse modification) "means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival

and recovery of a listed species." *Id.* (2014).[1] "Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." *Id.* In making these determinations, the biological opinion "must state a rational connection between the facts found and the decision made," *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1065 (9th Cir. 2004), and also rely on "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2).

If the consulting agency determines that a proposed action *is* likely to result in jeopardy or adverse modification, the consulting agency must suggest "reasonable and prudent alternatives, if any" that avoid jeopardy or adverse modification. 50 C.F.R. § 402.14(h)(3). If there are no alternatives, then any "take" of the listed species resulting from the proposed action will violate Section 9 of the ESA, which prohibits the taking of any member of an endangered or threatened species. *Ctr. for Biological Diversity*, 698 F.3d at 1106–07 (citing 16 U.S.C. § 1538(a)(1)(B)). Violations of Section 9 can result in "substantial civil and criminal penalties, including imprisonment." *Id.* at 1107 (internal quotation marks omitted).

If the consulting agency concludes that the proposed action is *not* likely to result in jeopardy or adverse modification, but the project nevertheless results in takings of a listed species that "result from, but are not the purpose of, carrying out" the requested agency action, the consulting agency must include an incidental take statement in the

[1] This definition of adverse modification governed at the time the BiOp was issued. For the current governing definition and a discussion of the change, see *infra* Section II.b.

biological opinion. 50 C.F.R. § 402.02. The incidental take statement "(1) specif[ies] the impact of the incidental taking on the species; (2) specif[ies] the 'reasonable and prudent measures' that the FWS considers necessary or appropriate to minimize such impact; (3) set[s] forth 'terms and conditions' with which the action agency must comply to implement the reasonable and prudent measures . . . ; and (4) specif[ies] the procedures to be used to handle or dispose of any animals actually taken." *Or. Nat. Res. Council*, 476 F.3d at 1034 (citing 16 U.S.C. § 1536(b)(4) and 50 C.F.R. § 402.14(i)). Compliance with the terms of an incidental take statement "exempts the action agency from the prohibition on takings found in Section 9 of the ESA." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 924–25 (9th Cir. 2008) (footnote omitted) (citing 16 U.S.C. § 1536(b)(4) and *ALCOA v. BPA*, 175 F.3d 1156, 1159 (9th Cir. 1999)).

II. The Desert Tortoise

The desert tortoise is a reptile native to the Mojave and Sonoran deserts in southern California, southern Nevada, Arizona, and the southwestern tip of Utah. In 1990, the FWS listed the desert tortoise as "threatened." *See* 55 Fed. Reg. 12,178-01, 12,179-80 (Apr. 2, 1990). In 1994, the FWS divided the entire range of the desert tortoise into six recovery units to "conserve the genetic, behavioral, morphological, and ecological diversity necessary for long-term sustainability of the entire [desert tortoise] population." The FWS then designated a total of 6.4 million acres of land within the six recovery units as the desert tortoise's critical habitat. 59 Fed. Reg. 5,820-01, 5,827 (Feb. 8, 1994). One of the six recovery units, the Eastern Mojave Recovery Unit, is at issue here.

III. The Silver State South Project

In 2008, NextLight Renewable Power, LLC submitted right-of-way applications to the BLM for the construction of two solar power facilities, Silver State North and Silver State South. It proposed to locate both project sites on unincorporated public lands in the Ivanpah Valley. Although the proposed project sites fell within the Eastern Mojave Recovery Unit, both were outside the designated critical habitat for the desert tortoise within this recovery unit. However, Silver State South would be located within a corridor between Silver State North and the Lucy Gray Mountains, which is currently the geographical linkage that provides "the most reliable potential for continued population connectivity [of the desert tortoise] throughout the Ivanpah Valley." Connectivity is the "degree to which population growth and vital rates are affected by dispersal" and "the flow of genetic material between two populations." Connectivity promotes stability in a species by "providing an immigrant subsidy that compensates for low survival or birth rates of residents" and "increasing colonization of unoccupied" habitat.

In October 2010, the BLM approved the application for Silver State North but deferred approval of the application for Silver State South. The BLM explained that the deferral of Silver State South was in part due to the "higher density of [desert] tortoise that reside in that portion of the project area," which "requires additional wildlife consideration and potentially further consultation with the [FWS]."

In October 2012, the BLM issued a draft Supplemental Environmental Impact Statement (SEIS) that evaluated three alternative layouts for Silver State South. In response to the SEIS, the Nevada field office of the FWS recommended that the BLM reject all three layouts and choose a "No Action"

alternative. The FWS expressed concern over Silver State South's potential impact on habitat fragmentation and genetic isolation of the desert tortoise and noted that the proposed layouts would reduce the existing width of the corridor between Silver State North and the Lucy Gray Mountains to .02 miles, .03 miles, or 1 mile. In the alternative, the FWS recommended that the BLM create a new proposal that would keep the corridor "wide enough to accommodate multiple desert tortoise ranges, spanning up to several times the desert tortoise lifetime utilization area." The FWS also recommended the adoption of additional mitigation measures to offset any reductions in the linkage and monitoring studies to track impact on population demographics and genetic stability.

On February 11, 2013, the BLM initiated formal consultation under the ESA for Silver State South. The consultation process among the BLM, the FWS, and Silver State Solar Power South, LLC, a wholly owned subsidiary of the original applicant for the Silver State South project, resulted in a new proposal (the BLM-preferred alternative) that was authorized by the BLM in 2014. The BLM-preferred alternative reduced the size of the project from 3,881 acres to 2,427 acres, and left a 3.65 mile long corridor between Silver State South and the Lucy Gray Mountains with a width ranging from 1.39 to 2 miles. The BLM-preferred alternative also incorporated measures to minimize adverse effects on the desert tortoise, such as the translocation of desert tortoises found within the project site, and measures to offset the loss of the desert tortoise habitat, primarily consisting of the Silver State South applicants funding the BLM's conservation activities.

Of particular importance to this case, the Silver State South applicants agreed to fund a monitoring program

jointly developed by the U.S. Geological Survey and the BLM (the USGS monitoring study) that would track the regional desert tortoise populations for changes in demographic and genetic stability. The study would monitor the effects of Silver State South on connectivity by taking an initial set of measurements that would establish baseline conditions that could then be compared to subsequent data over time and across sites. Changes "that rise to the level of significance (alpha = 0.05) would likely indicate changes in demographic and genetic stability," which could require the BLM to re-initiate formal consultation under the ESA.

IV. The Biological Opinion

On September 30, 2013, the FWS issued the BiOp, which formally reviewed the BLM-preferred alternative. The BiOp selected the entire Ivanpah Valley as the "action area"[2] for Silver State South, because of the "potential effects . . . on connectivity for the desert tortoise within the entire valley."

The BiOp first concluded that Silver State South would be "not likely to adversely affect the critical habitat of the desert tortoise," because "the proposed actions would not occur within the boundaries of critical habitat of the desert tortoise or directly or indirectly affect the primary constituent elements of critical habitat" ("no adverse modification" determination).

The BiOp next concluded that Silver State South was unlikely to appreciably diminish the reproduction, numbers,

[2] "Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 C.F.R. § 402.02.

or distribution of the desert tortoise in the action area ("no jeopardy" determination). The BiOp found no long term effects on the reproductive rates of tortoises that live adjacent to the project site or of tortoises that would be translocated. It estimated that few tortoises would be harmed or killed because of the proposed translocation of tortoises found in the project site and fencing to be built around Silver State South. It also acknowledged that the habitat loss of 2,388 acres "will reduce connectivity between the southern and northern ends of Ivanpah Valley," but explained that the proposed mitigation measures would "offset, to some degree, the decrease in the width of the linkage." The BiOp therefore expressed "uncertain[ty] as to whether the reduced width of the corridor between the Silver State South Project and the Lucy Gray Mountains would cause demographic or genetic instability." But, the BiOp reasoned, should Silver State South ultimately degrade connectivity, the USGS monitory survey would be able to detect any change and "the long generation time [of the tortoise] and re-initiation requirements of section 7(a)(2) would enable [the BLM] to undertake correction actions on the ground to bolster connectivity."

The BiOp also concluded that Silver State South would not appreciably impede the long-term recovery of the desert tortoise, but acknowledged that the project was likely to reduce connectivity within the Ivanpah Valley, which would temporarily impede recovery. However, the BiOp concluded that the project was "not likely to appreciably diminish the likelihood of recovery" because "at least one desert tortoise's lifetime utilization area would remain in the corridor after construction of the product." In addition, "[t]his corridor, combined with the increased level of management proposed by the [BLM] . . . has the potential to increase the density of desert tortoises in the region to a

degree that may mitigate the loss of habitat." The BiOp again noted that the USGS monitoring study would detect any changes to connectivity, which would allow for imposition of remedial measures.

V. The BLM Approval of the Right-of-Way for Silver State South

In February 2014, the BLM issued a Record of Decision, and granted the requested right-of-way for Silver State South. The Record of Decision specifically approved the BLM-preferred alternative for Silver State South and noted that the "reasonable and prudent measures contained in the [BiOp] significantly minimize and/or mitigate environmental damage and protect resources." Construction of Silver State South has now been completed.

VI. Procedural History

On March 6, 2014, DOW sued the Federal Defendants to enjoin construction of Silver State South. Silver State Solar Power South, LLC and Silver State South Solar, LLC, another subsidiary of the original project applicant, subsequently intervened as defendants. The district court denied DOW's request for a preliminary injunction, concluding that DOW could not show a likelihood of success on the merits of their claim that the BiOp's "no jeopardy" determination was arbitrary or capricious. *Defs. of Wildlife v. Jewell*, No. CV 14-1656-MWF, 2014 WL 1364452, at *14 (C.D. Cal. Apr. 2, 2014).

The parties subsequently cross-moved for summary judgment. The district court denied DOW's motion and granted summary judgment for the various Defendants. In doing so, the district court first concluded that the BiOp's "no adverse modification" determination was neither

arbitrary nor capricious because (1) adverse modification is an alteration to a critical habitat's primary constituent elements, and "gene flow" is not a primary constituent element of the desert tortoise's critical habitat, (2) mere inclusion of critical habitat in the identified "action area" for Silver Lake South is not a finding of adverse modification, and (3) adverse effects on connectivity are not modifications to *critical habitat* and should instead be analyzed under the jeopardy-to-the-species analysis. The district court next concluded that the BiOp's "no jeopardy" determination was neither arbitrary nor capricious, because (1) the BiOp permissibly made a "no jeopardy" determination based on equivocal evidence that the reduced corridor was unlikely to jeopardize the desert tortoise's recovery, (2) the USGS monitoring study was a sufficiently specific and certain mitigation measure, and (3) the USGS monitoring study provided a sufficiently clear trigger for reinitiating formal consultation under Section 7(a)(2) of the ESA. The district court therefore concluded that the BiOp fully complied with both the ESA and the APA, and that the BLM permissibly relied upon the BiOp in authorizing Silver State South. DOW timely appealed on May 28, 2015.

STANDARD OF REVIEW

We review de novo a district court's grant of summary judgment. *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 601 (9th Cir. 2014).

"Agency decisions under ESA are governed by the Administrative Procedure Act, which requires an agency action to be upheld unless it is found to be 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'" *Pac. Coast Fed'n of Fishermen's Ass'ns, Inc. v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1034 (9th Cir. 2001) (quoting 5 U.S.C. § 706(2)(A)). An

agency action is arbitrary and capricious "only if the agency relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, or offered an explanation that runs counter to the evidence before the agency or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Conservation Cong*, 720 F.3d at 1054 (internal quotation marks omitted).

ANALYSIS

I. Jeopardy Analysis

DOW first argues that the BiOp's determination that Silver State South would not result in jeopardy to the desert tortoise impermissibly relied upon unspecified remedial measures. DOW cites the BiOp's conclusion, which states:

> To summarize, we concluded that the proposed actions are not likely to appreciably diminish reproduction, numbers, or distribution of the desert tortoise in the action area, or to appreciably impede long-term recovery of the desert tortoise. *Integral to that conclusion* is our expectation that the reduction in the width of habitat east of the Silver State South Project is *either* unlikely to degrade demographic or genetic stability in Ivanpah Valley *or* that we will be able to detect degradation of those values and implement remedial actions, if necessary.

(Emphasis added). DOW interprets this second sentence to indicate that the BiOp's "no jeopardy" determination was dependent on the ability to detect future demographic or genetic degradation and implement remedial measures.

And, because the BiOp did not identify specific remedial actions to combat these future effects, DOW argues that BiOp's "no jeopardy" determination was arbitrary and capricious.

DOW's objection to the BiOp's "no jeopardy" determination fails for two reasons. First, the BiOp did not rely on mitigation measures to make its "no jeopardy" determination. Throughout the BiOp, the FWS expressly stated that it was uncertain if the reduced width of the corridor between Silver State South and the Lucy Gray Mountains would cause genetic or demographic instability. This uncertainty reflected the lack of a scientific consensus regarding the requisite corridor width necessary to support connectivity for the desert tortoise. In the face of such uncertainty, the FWS permissibly concluded that the reduced width of the corridor would not result in jeopardy. Although the ESA requires the FWS to make its determinations with the "best scientific data . . . available," 16 U.S.C. § 1533(b)(2), "the ESA accepts agency decisions in the face of uncertainty." *Ariz. Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160, 1164 (9th Cir. 2010); *see also San Luis & Delta-Mendota Water Auth.*, 747 F.3d at 633 ("It is not our job to task the FWS with filling the gaps in the scientific evidence. We must respect the agency's judgment even in the face of uncertainty." (internal quotation marks omitted)). "This standard does not require that the FWS act only when it can justify its decision with absolute confidence." *Ariz. Cattle Growers*, 606 F.3d at 1164. The FWS therefore permissibly concluded that the proposed action would not result in jeopardy to the desert tortoise in spite of the uncertainty of the effect of Silver State South on the connectivity within the corridor.

Second, our precedents do not require mitigation measures to be identified or guaranteed when the mitigation measures themselves may be unnecessary. We have held that an action agency may consider the impact of mitigation measures on a proposed action only when the measures are the result of "specific and binding plans" and show "a clear, definite commitment of resources," *Nat'l Wildlife Fed'n*, 524 F.3d at 936, but our precedents imposing this requirement all involve mitigation measures aimed at "certain immediate negative effects," *id.*; *see also Sierra Club v. Marsh*, 816 F.2d 1376, 1388 (9th Cir. 1987) (requiring the FWS to reinitiate formal consultation after the FWS concluded that a highway construction project would adversely affect bird habitat and the county's preservation of marshland was "necessary to mitigate" the "effects of the project," but the county subsequently failed to acquire the marshland), *abrogated on other grounds as recognized in Cottonwood Envtl. Law Ctr. v. U.S. Forest Serv.*, 789 F.3d 1075, 1088–91 (9th Cir. 2015). Thus, our precedents require an agency to identify and guarantee mitigation measures that target certain or existing negative effects. However, DOW cites no authority for the proposition that an agency must similarly identify and guarantee mitigation measures that target uncertain future negative effects. As aptly noted by the district court, "[t]he FWS cannot be expected to respond to data that is not yet available to surmise potential mitigation actions that are not needed under the agency's current interpretation of the data."

Here, although the BiOp repeatedly emphasized that monitoring would allow the FWS to detect any future genetic or demographic degradation and implement responsive mitigation measures, the BiOp ultimately found these potential harms to be uncertain. As such, even the sentence of the BiOp upon which DOW relies acknowledges

that the need for future mitigation measures is similarly uncertain, by explaining that the implementation of remedial actions will only be done "if necessary." Because the BiOp did not rely upon these potential remedial measures to target a certain or existing harm that would be caused by Silver State South, the BiOp was not obligated to identify or guarantee these future remedial measures. Accordingly, the BiOp's "no jeopardy" determination was neither arbitrary nor capricious.

II. Adverse Modification Analysis

The BiOp concluded that Silver State South would be "not likely to adversely affect critical habitat of the desert tortoise," because "the proposed actions would not occur within the boundaries of critical habitat of the desert tortoise or directly or indirectly affect the primary constituent elements of critical habitat." The BiOp therefore did not analyze whether Silver State South would adversely modify the critical habitat within the Ivanpah Valley. DOW challenges the failure to do so on two grounds.

a. Inclusion of Critical Habitat in the "Action Area"

DOW first contends that the BiOp's inclusion of critical habitat within Silver State South's "action area" expressly conceded that there would be an effect on critical habitat, which should have obligated the FWS to conduct an adverse modification analysis in the BiOp. The ESA's implementing regulations require biological opinions to analyze "effects of the [proposed] action on listed species or critical habitat," 50 C.F.R. § 402.14(h)(2), and "[e]ffects of the action refers to the direct and indirect effects of an action on the species or critical habitat" within the relevant "action area," *id*. at § 402.02. The regulations then define "action area" as "all

areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." *Id.* The BiOp selected the Ivanpah Valley as the "action area" for Silver State South, and DOW notes that the Ivanpah Valley Critical Habitat Unit (CHU) is within the Ivanpah Valley. DOW insists that the BiOp's inclusion of Ivanpah Valley CHU in the action area is a finding that critical habitat would be affected by Silver State South.

We rejected a similar argument in *Friends of the Wild Swan v. Weber*, 767 F.3d 936 (9th Cir. 2014). There, we concluded that the consulting agency need not conduct an adverse modification analysis in spite of the biological opinion's inclusion of critical habitat within the action area. *Id.* at 950. Because both the consulting and action agencies had agreed that the projects at issue were unlikely to affect the critical habitat, "[t]his informal consultation satisfied the requirements of the ESA and no formal consolation was thus required." *Id.* (citing 50 C.F.R. § 402.13). *Friends of the Wild Swan* illustrates the proposition that the inclusion of critical habitat in a biological opinion's action area does not automatically trigger the duty to conduct an adverse modification analysis; the relevant inquiry remains whether the proposed action is "likely to adversely affect" critical habitat. 50 C.F.R. § 402.14(b)(1); *see also id.* § 402.14(g)(4).

Here, both the BLM and the FWS concluded that Silver State South would be unlikely to adversely affect any critical habitat through informal consultation. As mentioned above, no formal consultation is required if both the action agency and the consulting agency determine, the latter in writing, through informal consultation that the action is "not likely to adversely affect listed species or critical habitat." *Id.* § 402.13(a). The BLM made this determination in a

biological assessment dated February 11, 2013. The FWS reached an identical conclusion in the BiOp itself. Because the BLM and the FWS were in agreement, the FWS had no obligation to conduct an adverse modification analysis pursuant to formal consultation in the BiOp. In any event, the BiOp also explained that its inclusion of the entire Ivanpah Valley in the action area was due to the potential effect of Silver State South "on connectivity for the desert tortoise within the entire valley," not any potential effect on the Ivanpah Valley CHU.

b. Reduced Connectivity as an "Adverse Modification" of Critical Habitat

Although the construction of Silver State South was not to occur on any critical habitat, DOW argues that the BiOp was obligated to perform an adverse modification analysis because evidence in the record indicated that the construction of Silver State South would narrow the corridor between two critical habitats, and thus adversely affect the connectivity of the desert tortoise. DOW contends that this reduction in connectivity constitutes adverse modification of critical habitat because it is an impact to the critical habitat's recovery value.

During the period of time in which the BLM, the FWS, and Silver State South applicants engaged in the Section 7 consultation process that resulted in the BiOp, the ESA's implementing regulations defined "destruction or adverse modification of critical habitat" as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species" (the 1986 regulation). 50 C.F.R. § 402.02 (2014). The 1986 regulation further explained that "[s]uch alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for

determining the habitat to be critical." *Id.* However, on February 11, 2016, the FWS and the NMSF published a final rule amending the definition of adverse modification (the 2016 regulation) that became effective on March 14, 2016. 81 Fed. Reg. 7,214-01, 7,225-26 (Feb. 11, 2016). The 2016 regulation now defines adverse modification as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species." 50 C.F.R. § 402.02 (2016). And "[s]uch alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features." *Id.* This amendment was a direct result of our decision in *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Service*, 378 F.3d 1059 (9th Cir. 2004). 81 Fed. Reg. 7,214-01, 7,215. There, we found the 1986 regulation to be invalid insofar as it limited adverse modifications to actions that "appreciably diminish[] the value of critical habitat for *both* the survival *and* recovery" of habitat. *Gifford Pinchot Task Force*, 378 F.3d at 1069 (quoting 50 C.F.R. § 402.02). We explained that this definition "read[] the 'recovery' goal out of the adverse modification inquiry" altogether, "[b]ecause it is logical and inevitable that a species requires more critical habitat for recovery than is necessary for the species survival, the regulation's singular focus becomes 'survival.'" *Id.* We emphasized that the text of the ESA evinced congressional intent to view "conservation," which incorporates "recovery," and "survival" as "distinct, though complementary, goals, and the requirement to preserve critical habitat is designed to promote both conservation and survival." *Id.* at 1070. We therefore concluded that "[w]here Congress in its statutory language required 'or,' the agency in its regulatory definition substituted 'and.'" *Id.*

The parties each rely on different versions of the regulation to argue whether reduced connectivity can constitute adverse modification. Defendants first emphasize that the plain language of Section 7 of the ESA requires agencies to ensure that none of their actions "result in the destruction or adverse modification of habitat." 16 U.S.C. § 1536(a)(2). Defendants argue that the phrase "adverse modification of habitat" itself imposes two requirements: there must be (1) a "modification *of* habitat," which Defendants interpret to mean "some change to the habitat itself," that is (2) "adverse." Second, Defendants insist that a change in the desert tortoise's connectivity is an effect on the "species" and not a change to the "habitat." Third, Defendants cite our precedents and other ESA implementing regulations that frame adverse modification inquiry as one based on alterations to the "primary constituent elements" of the critical habitat. *See e.g.*, *Butte Envtl. Council v. U.S. Army Corps of Eng'rs*, 620 F.3d 936, 948 (9th Cir. 2010) (characterizing adverse modification as "[a]dverse effects on . . . constituent elements or segments of critical habitat" (quoting U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act* 4-43 (1998)); 50 C.F.R. § 17.94 ("All Federal agencies must insure that any action authorized, funded, or carried out by them is not likely to result in the destruction or adverse modification of the constituent elements essential to the conservation of the listed species within these defined Critical Habitats."). Critical habitats are comprised of primary constituent elements, which are listed in the critical habitat designations. 50 C.F.R. § 424.12(b). Defendants argue that reducing connectivity would not affect any of the desert tortoise's primary constituent elements, which includes "[s]ufficient space to . . . provide for . . . gene

flow," but not connectivity as a whole. 59 Fed Reg. 5,820, 5,822. Finally, Defendants contend that the 2016 regulation does not alter the requirement that adverse modification requires some modification to the habitat itself.

In contrast, DOW argues that any action that adversely impacts the "recovery" value of critical habitat can constitute an adverse modification. DOW also cites to the language of Section 7 of the ESA, but instead argues that the ESA's use of the phrase "result in" indicates "clear congressional intent to require FWS to focus on the *consequences* of federal actions." Next, DOW contends that Defendants' interpretation of adverse modification cannot be squared with the FWS's interpretation of adverse modification as embodied by the 2016 regulation. First, DOW argues that the 2016 regulation's definition of adverse modification as an alteration "that appreciably diminishes the value of critical habitat for the conservation of a listed species" supports DOW's argument that the adverse modification inquiry must focus on the impact of the proposed agency's action on critical habitat's recovery value as opposed to whether there was an alteration to the habitat itself. Second, DOW argues that the 2016 regulation's interpretation of the phrase "may include, but not limited to" supports a broad conception of what constitutes an alteration of critical habitat. In the supplementary information accompanying the publication of the 2016 regulation (2016 regulation commentary), the FWS and the NMFS explained that this phrase "emphasizes that the types of direct or indirect alterations that appreciably diminish the value of critical habitat for listed species include not only those that affect physical or biological features, but also those that affect the value of critical habitat itself." 81 Fed. Reg. 7,214, 7,219. This phrase therefore encapsulates "impacts to an area of critical habitat itself that are not impacts to features," such

as "those that would impede access to or the use of the habitat." *Id.*

We agree with Defendants that the plain language of the ESA requires that an adverse modification of critical habitat consists of two elements: (1) a "modification" of the habitat that is (2) "adverse." 16 U.S.C. § 1536(a)(2). Both the 1986 and 2016 definitions reflect that understanding by defining adverse modification as a "direct or indirect *alteration*" that "appreciably diminishes the value of the critical habitat." 50 C.F.R. § 402.02 (2014) (emphasis added); 50 C.F.R. § 402.02 (2016) (same). This interpretation of adverse modification is further confirmed by the 2016 regulation commentary, which describes the adverse modification analysis as follows:

> [The FWS] will generally conclude that a Federal action is likely to "destroy or adversely modify" designated critical habitat *if the action results in an alteration* of the quantity or quality of the essential physical or biological features of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, *and if the effect of the alteration is to appreciably diminish the value of critical habitat for the conservation of the species*.

81 Fed. Reg. 7214-01, 7216 (emphasis added). DOW's interpretation of "adverse modification" focuses solely on the effect of the proposed agency action, and thus improperly reads the "alteration" requirement out of the ESA's implementing regulations altogether. Furthermore, DOW's reliance on the 2016 regulation commentary's explanation

of the phrase "may include, but are not limited to" is misplaced. This phrase merely clarifies the types of impacts on the critical habitat that can result in adverse modification; it does not speak to the threshold requirement that there must be an alteration to the critical habitat that creates these impacts to begin with. *See* 81 Fed. Reg. 7,214, 7,219.

With this proper understanding of "adverse modification" in mind, we conclude that reduced connectivity resulting from the narrowing of the corridor between Silver State South and the Lucy Gray Mountains cannot constitute adverse modification because the construction of Silver State South would not have resulted in any alteration to the critical habitat of the desert tortoise. It is undisputed that the corridor itself is not critical habitat and the construction of Silver State South would not have taken place on any critical habitat within the Ivanpah Valley. Nor can reduced connectivity itself serve as the alteration; reduced connectivity can lead to a change in the desert tortoise's genetic health, which is an alteration to the species, not its critical habitat. Accordingly, the BiOp's determination that Silver State South was "not likely to adversely affect the critical habitat of the desert tortoise," which permitted the FWS to forego an adverse modification analysis, was neither arbitrary nor capricious.

III. Inconsistent Positions in the BiOp

a. The FWS's SEIS Comments

DOW next contends that the BiOp was arbitrary and capricious because it failed to address the FWS Nevada field office's comments on the BLM's draft SEIS pertaining to adverse impacts on recovery, connectivity of critical habitat, and recommended corridor-width. DOW notes that the FWS's comments on the SEIS specifically recommended

that the corridor between Silver State South and the Lucy Gray Mountains "should be wide enough to accommodate multiple desert tortoise ranges, spanning up to several times the desert tortoise lifetime utilization area." DOW argues that because the FWS also authored the BiOp, which permitted the corridor's narrowest point to be slightly less than a single lifetime utilization area, the FWS was obligated to address this inconsistency in the BiOp.

"Agencies are entitled to change their minds." *Butte Envtl. Council*, 620 F.3d at 946. Thus, "the fact that a preliminary determination by a local agency representative is later overruled at a higher level within the agency does not render the decisionmaking process arbitrary and capricious." *Nat'l Ass'n of Home Builders v. Defs. of Wildlife*, 551 U.S. 644, 659 (2007); *see also Friends of the Earth v. Hintz*, 800 F.2d 822, 834 (9th Cir. 1986) (finding that agency's approval of a permit despite earlier criticism because "[the agency's] ultimate decision was not a reversal but simply the culmination of over a year and a half of investigations, meetings, and reports"). However, an agency also "must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." *Humane Soc'y of U.S. v. Locke*, 626 F.3d 1040, 1051 (9th Cir. 2010) (emphases and internal quotation marks omitted). Under certain circumstances, an agency's prior factual findings or conclusions may be "relevant data" such that an agency must "articulate a satisfactory explanation" when it changes its mind. *See id.*

Humane Society of the United States v. Locke illustrates this principle. There, we held that the NMFS did not adequately explain its finding that a sea lion predation rate of 1 percent would have a significant negative impact on the

decline or recovery of salmon "given earlier factual findings by NMFS that fisheries that cause similar or greater mortality among [the salmon population] are *not* having significant negative impacts." *Id.* at 1048. We noted that the fishery environmental assessments were "in apparent conflict with NMFS's finding in this case . . . yet the agency has not offered a rationale to explain the disparate findings." *Id.* at 1049. We acknowledged that agencies do not have a "duty to identify and any potential tensions between current and earlier factual determinations in marginally related administrative actions," but explained that the impact of fisheries compared to that of sea lion predation "ha[d] occupied the center of this controversy from the start." *Id.* at 1051. The prior fishery environmental assessments were therefore "relevant data" which required a "satisfactory explanation." *Id.*

Locke is distinguishable from the circumstances here in two ways. First, the FWS comments on the SEIS did not make any factual or scientific findings. Although the FWS recommended that any alternative plan preserve a corridor between Silver State South and the Lucy Gray Mounts "spanning up to several times the desert tortoise lifetime utilization area," the FWS did not conclude that anything less would affirmatively result in a loss of connectivity, jeopardy, or adverse modification. The FWS comments on the SEIS therefore made no findings with respect to Silver State South, let alone any "[d]ivergent" findings that required a response in the BiOp. *Id.* at 1049. Second, the SEIS (and by extension, the FWS's comments on the SEIS) evaluated three proposed plans for Silver State South that differed significantly from the BLM-preferred alternative analyzed in the BiOp. The BLM-preferred alternative reduced the size of the project from 3,881 acres to 2,427 acres, increased the width of the corridor between Silver

State South and the Lucy Gray Mountains at its narrowest point from 100 feet to 1.39 miles (with the corridor maintaining an average width of 1.4 miles), and also incorporated mitigation measures recommended by the FWS in their comments on the SEIS to minimize adverse effects to the desert tortoise and offset the loss of desert tortoise habitat. Thus, even if the FWS's comments on the SEIS were construed to have made factual or scientific findings, they would not be inconsistent with the FWS's conclusions regarding Silver State South in the BiOp because the SEIS and the BiOp evaluated substantially different plans. Accordingly, the BiOp's failure to address the FWS comments to the SEIS was not arbitrary or capricious.

b. Edge Effects

DOW additionally contends that the BiOp contained an internal inconsistency regarding the necessary width of the corridor: The BiOp recognized that the corridor "would need to be at least 1.4 miles wide to accommodate the width of a single desert tortoise's lifetime utilization area," and subsequently acknowledged that because of edge effects "the effective width of the corridor to the east of the project site is likely less than the measured distance," but never reconciled these two findings. DOW argues that the BiOp's failure to quantify the extent of the edge effects or make an express finding that edge effects would not be significant to this corridor was arbitrary and capricious.

As an initial matter, DOW misconstrues the BiOp as concluding that a corridor width of at least 1.4 miles is necessary to maintain connectivity in the Ivanpah Valley. The BiOp acknowledged that the 1.4 miles estimation "provides a means for characterizing the potential minimum width of a linkage" required to maintain connectivity, but explained that "the actual linkage-width needed will be

highly dependent on the actual site-specific configuration and size of desert tortoise home ranges in that area, the terrain within the linkage, and the degree to which threats, other constrictions, and edge effect will disrupt the linkage." That edge effects may have reduced the width of the corridor below 1.4 miles at a single point thus does not create an internal inconsistency with the BiOp's conclusion that the corridor width of the approved plan for Silver State South would not disrupt the connectivity of the corridor.

Furthermore, the record supports the BiOp's conclusion that edge effects created by Silver State South were unlikely to be significant because the "edge effects of a solar plant likely extend less into adjacent habitat . . . and [] edge effects likely do not emanate from the Lucy Gray Mountains." Although the BiOp's explanation of this issue is conclusory, there is sufficient evidence in the record from we can "discern [the FWS's] reasoning." *San Luis & Delta-Mendota Water Auth.*, 747 F.3d at 604–06 (even an "unpolished" or "largely unintelligible" biological opinion should be upheld if it is "adequately supported by the record" and the court can "discern the agency's reasoning"). The record included evidence that desert tortoises were burrowing near Silver State North and other existing solar projects in the Ivanpah Valley, which corroborates the BiOp's explanation that solar plants result in minimal edge effects. The mitigation measures incorporated by the BiOp also included measures to minimize edge effects, such as the use of "[a]uthorized biologists or desert tortoise monitors [to] flag all desert tortoise burrows for avoidance in areas adjacent to work areas." Because we can discern the BiOp's reasoning in concluding that Silver State South would not have significant edge effects and the record supports the BiOp's conclusion, the BiOp's consideration of Silver State South's edge effects was not arbitrary or capricious.

IV. Trigger for Reinitiation of Formal Consultation

Lastly, DOW alleges that the BiOp established an impermissibly vague trigger for reinitiating formal consultation over Silver State South. DOW contends that reinitiation triggers must provide "clear criteria" that do not give "unfettered discretion" to federal agencies. Although the BiOp explained that the FWS would reinitiate formal consultation with the BLM if the USGS monitoring survey found "changes in demographic and genetic stability [that] are related to the Silver State South," DOW claims that this is insufficient because the BiOp does not identify criteria for determining whether changes are "related" to Silver State South.

We disagree. The ESA's implementing regulations require an action agency to reinitiate formal consultation with the consulting agency when "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered" (the "new information" reinitation trigger). 50 C.F.R. § 402.16(b). Neither the ESA nor its implementing regulations require the action agency to identify *ex-ante* standards for determining whether information is "new" or explaining how "new information" will be evaluated.[3] In the absence of such authority, the

[3] The cases that DOW cites for the proposition that reinitiation triggers must provide "clear standard[s]" involve reinitiation in the "incidental take" context. *E.g.*, *Ariz. Cattle Growers*, 273 F.3d at 1249–51. Incidental take statements must "set forth a 'trigger' that, when reached, results in an unacceptable level of incidental take, invalidating the safe harbor provision [of the ESA], and requiring the parties to re-initiate consultation." *Id.* at 1249. The requirement that an "incidental take" trigger provide clear standards for determining when it has been met thus reflects a consequence that is not implicated by the "new

BLM instead exceeded its obligations under the ESA by explaining how it would determine when results from the USGS monitoring survey would require reinitiation of formal consultation.

Moreover, the BiOp provided clear criteria for determining whether any future demographic or genetic changes identified by the USGS monitoring survey are "related" to Silver State South. The USGS monitoring survey will first conduct initial sampling to establish baseline conditions from different monitoring plots and will then compare this information to subsequent data over time and across plots. The BiOp also explained that changes "that rise to the level of significance (alpha = 0.05) would likely indicate changes in demographic and genetic stability," which would then constitute new information if related to Silver State South. The BiOp therefore does not rely on an impermissibly vague "new information" reinitiation trigger.

V. The BLM's Reliance on the BiOp

Because the BiOp was neither legally nor factually flawed, the BLM permissibly relied upon the BiOp in approving of the right-of-way for Silver State South. *See Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415–16 (9th Cir. 1990).

---

information" trigger: The "new information" trigger merely requires reinitiation of formal consultation, while the "incidental take" trigger requires not only reinitiation of formal consultation, but also revokes an action agency's or project applicant's immunity from penalties under Section 9 of the ESA. *See id*. To the extent that DOW asks us to import the "clear standard" requirement from "incidental take" triggers into the "new information" trigger context, we decline to do so because of this substantive difference.

CONCLUSION

For the foregoing reasons, the district court's grant of summary judgment to the Defendants is AFFIRMED. Plaintiff shall bear costs on appeal. Fed. R. App. P. 39(a)(2).