

No. 20-2159

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

APPALACHIAN VOICES, et al.,
Petitioners,

v.

UNITED STATES DEPARTMENT OF THE INTERIOR, et al.,
Respondents,

and

MOUNTAIN VALLEY PIPELINE, LLC,
Intervenor-Respondent.

On Petition for Review of Action of the U.S. Fish and Wildlife Service

**FINAL RESPONSE BRIEF FOR
THE FEDERAL RESPONDENTS**

Of Counsel:

S. AMANDA BOSSIE
Attorney
U.S. Department of the Interior

JEAN E. WILLIAMS
Acting Assistant Attorney General
KEVIN W. McARDLE
Attorney
Environment and Natural Resources Division
U.S. Department of Justice
Post Office Box 7415
Washington, D.C. 20044
(202) 305-0219
kevin.mcardle@usdoj.gov

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INTRODUCTION

Petitioners seek review of the revised Biological Opinion (BiOp) prepared by the U.S. Fish and Wildlife Service for the Mountain Valley Pipeline (Project). The Service drafted the BiOp in consultation with the Federal Energy Regulatory Commission (FERC), which authorized the Project, and Mountain Valley Pipeline LLC (MVP), the project proponent, under Section 7 of the Endangered Species Act (ESA). The BiOp contains a rigorous analysis of the Project's effects on the Roanoke logperch and candy darter, the two endangered fish species primarily at issue in this dispute. The Service used the best available data in developing the analysis, considered input from experts both within and outside of the federal government, and adhered to this Court's guidance in prior ESA cases.

Petitioners oppose the Project. They seek to have the BiOp set aside in order to prevent MVP from completing construction. But Petitioners' criticisms of the BiOp largely amount to disagreements with the Service's methodological choices and expert judgments. Because such disagreements are not a valid basis for setting aside agency action under the deferential Administrative Procedure Act (APA) standard of review, the petition for review should be denied.

STATEMENT OF JURISDICTION

Petitioners seek review of the BiOp issued to FERC on September 4, 2020. Petitioners timely filed a petition for review on October 27, 2020. This Court has original jurisdiction under the Natural Gas Act, 15 U.S.C. § 717r(d)(1).

STATEMENT OF THE ISSUES

1. Whether the Service's discussion of the environmental baseline and cumulative effects complies with the ESA.
2. Whether the Service's discussion of the Project's effects on logperch and candy darter complies with the ESA.
3. Whether the Service reasonably analyzed the Project's potential effects on logperch and candy darter recovery.
4. Whether the incidental take statement for the logperch, candy darter, and Indiana bat complies with the ESA.

STATEMENT OF THE CASE

A. The Endangered Species Act

Section 7 of the ESA directs each federal agency to insure, in consultation with the Service, that "any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of" a species listed as threatened or endangered. 16 U.S.C. § 1536(a)(2). When formal consultation is required, the Service issues a BiOp addressing whether the action is likely "to

jeopardize the continued existence of a listed species.” 50 C.F.R. § 402.14(h)(1). To “jeopardize the continued existence of” 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.” *Id.* § 402.02.

Section 9 of the ESA prohibits the unauthorized “take” of members of an endangered species. 16 U.S.C. § 1538(a)(1)(B); *see id.* § 1532(19) (defining “take”). If the Service concludes that the proposed action is not likely to cause jeopardy but will take listed species, the Service provides an incidental take statement with the BiOp. *Id.* § 1536(b)(4). The take statement must specify the impact (amount or extent) of anticipated take, measures to minimize such impact, and terms and conditions (including monitoring and reporting) to implement those measures. 50 C.F.R. § 402.14(i)(1). Any taking in compliance with the terms and conditions is exempt from Section 9’s take prohibition. *Id.* § 402.14(i)(5). If, during the course of the action, the amount or extent of anticipated take is exceeded, the action agency must reinitiate consultation. *Id.* § 402.14(i)(4).

B. Factual background

In October 2017, FERC authorized construction of the Project, which consists of a 304-mile underground pipeline and related facilities designed to transport natural gas from West Virginia to Virginia. JA0008-11. FERC’s

proposed authorization triggered formal consultation with the Service. JA0215. In November 2017, the Service issued a BiOp concluding that the Project is not likely to jeopardize the existence of any listed species. JA0002.

In August 2019, FERC requested reinitiation of consultation to address new information regarding the Project's effects on listed species. JA0217, 1057-58. The Service accepted FERC's request on September 11, 2019, and spent the next 358 days developing the new BiOp.

1. Overview of the analysis of effects on logperch and candy darter

A key focus of the new BiOp (and of this dispute) is the Project's effects on two endangered fish, the Roanoke logperch and candy darter. The logperch is a small darter found in Virginia and North Carolina that prefers warmwater streams. JA0045. The candy darter is a small fish found in Virginia and West Virginia that prefers coldwater streams. JA0050. Project construction will adversely affect logperch and candy darter primarily by contributing sediment to waterbodies occupied by those species. JA0169, 173.

To reevaluate the Project's effects, the Service first redefined the aquatic *action area*—the stream reaches that may be affected by the Project. JA0036-37. The Service relied on MVP's Hydrologic Analysis of Sedimentation, which used modeling to identify streams in which Project-related sediment is likely to be detectable. JA0037-40. The Hydrologic Analysis was reviewed by experts at

multiple federal agencies who concluded that it provides an appropriate means of delineating the aquatic action area. JA0037.

The Service then identified the aquatic *impact areas* for the logperch and candy darter, which are the stream reaches that are: (1) occupied or presumed-occupied by the species; and (2) likely to receive Project-related sediment at levels that could cause harm. JA0101. To define the impact areas, the Service first had to identify the sediment concentration “thresholds” at which harm may occur. JA0101, 112. The Service ultimately used conservative thresholds derived from a study referenced in the BiOp as Newcombe and Jensen (1996), and an analytical framework developed by the Service’s Washington Field Office for analyzing the effects of sedimentation on bull trout. JA0101-03, 249-305, 1798-1832.

The Service directed MVP to use the Hydrologic Analysis to identify the occupied stream reaches in which Project-related sediment will exceed the lowest harm threshold (20 mg/L). JA0100, 104, 692. MVP objected and proposed an alternative approach, stating that its modeling used conservative assumptions and would overstate the Project’s impacts. JA0694-99, 560-65. The Service rejected MVP’s proposal and used the conservative modeling results to initially identify the impact areas. JA0100-01, 104, 111-12, 114, 169-70, 173-74.

The Service then expanded the impact areas to include two additional components: (1) stream segments around the Project’s crossing of certain

logperch-occupied streams; and (2) “mixing zones” in occupied streams. JA0103-05, 114. MVP’s modeling identified tributaries to occupied streams in which Project-related sediment will exceed the lowest harm threshold of 20 mg/L. JA0104-05, 114, 329, 331. The modeling indicated that the flow of the occupied stream would immediately dilute sediment concentrations below that threshold. JA0331 n.6. The Service conservatively assumed, however, that the tributary would create a “mixing zone” in the occupied stream in which Project-related sediment would remain above 20 mg/L before diluting. JA0039, 104, 107, 114. The one-kilometer dimensions of the mixing zone and stream-crossing impact areas are based on multiple studies discussed in the BiOp. JA0103-04.

With the impact areas established, the Service could identify the specific logperch and candy darter populations affected by the Project. *See* JA0104-06, 114-15. To assess the baseline condition of each population (the condition without the Project’s effects), the Service relied on current scientific literature, including Roberts (2016) for the logperch, JA1612-30 (cited in the BiOp as “Roberts et al. (2016b)”), and the Service’s Species Status Assessment for the candy darter, JA1400-93 (cited in the BiOp as “Service 2018a”). As discussed in the BiOp, those studies provide an accurate assessment of the current condition of each population and data-based projections of how each population may respond over

time if existing stressors continue or worsen. JA0048-50, 105-06, 147-148 (logperch); JA0051-54, 75, 91–92, 115, 151-53 (candy darter).

With the baseline conditions established, the Service could assess the extent to which each population will be affected by the Project. The Service analyzed the likely effects on individuals within each population and on the population as a whole. JA0096-106, 107-09, 146-48 (logperch); JA0109-12, 114-16, 150-52 (candy darter). The Service then separately analyzed the Project’s potential impact on each species’ likelihood of *survival* and *recovery*, ultimately concluding that the Project is not likely to jeopardize the continued existence of either species. JA0148-50 (logperch); JA0152-54 (candy darter). The Service reached the same conclusion for the other affected listed species. JA0165-66.

2. Overview of the incidental take statement for logperch and candy darter

Because the Project will incidentally take logperch and candy darter, the BiOp includes a take statement for each species. JA0167-84. The Service used the aquatic impact areas as a surrogate measure of take in part because take of individuals cannot be monitored. JA0167-73; *see* 50 C.F.R. § 402.14(i)(1)(i) (conditions for use of surrogate). The surrogate will be exceeded, and reinitiation of consultation required, if Project-related sediment exceeds any take threshold “at the downstream limit of any of the impact areas.” JA0169, 173.

The take statement requires comprehensive monitoring and reporting to insure that FERC and the Service are promptly notified of any exceedance and given the information they need to determine if the exceedance is attributable to the Project. JA0328-52. The Service arranged for a water quality expert at the United States Geological Survey to review the draft monitoring plan. JA0369-72. MVP substantially revised the plan to address the expert's concerns. JA0331, 370. The expert reviewed the final plan and concluded that it would achieve the key objectives of "detecting project-related increases in suspended sediment in streams occupied by the [logperch] or [candy darter]," and "differentiat[ing] suspended sediment load due to project activities from suspended-sediment loads due to other factors." JA0377. The Service concurred and concluded that the plan will allow the agency "to independently determine whether any such exceedance is attributable to the project, and, if so, to request that FERC immediately reinstate Section 7 consultation." JA0371-72.

The Service issued the new BiOp on September 4, 2020. The Court denied Petitioners' motion for a stay pending review on November 18, 2020.

SUMMARY OF ARGUMENT

1. The Service's discussion of the baseline and cumulative effects complies with the ESA. Roberts (2016) provides a science-based assessment of the baseline condition of the specific logperch populations that will be affected by

the Project. The Service's 2018 Species Status Assessment provides similar analyses of the affected candy darter populations. Those assessments include forward-looking risk projections that account for the impacts of ongoing stressors in the action area. By incorporating the assessments into the BiOp, the Service provided appropriate context for its jeopardy analysis. And the Service rationally determined that no specific future projects are planned in the action area that will give rise to additional cumulative effects.

2. The Service reasonably analyzed the effects of the action. The Service conservatively defined the stream crossing and mixing zone impact areas using the best available data. And the Service reasonably concluded that stream crossings in the Blackwater River drainage are unlikely to affect logperch because all of the available data indicates that logperch are not present.

3. The Service's analysis of recovery impacts complies with the ESA. After analyzing the Project's potential short-term and long-term effects on logperch and candy darter, the Service rationally explained that the Project is unlikely to have adverse population-level impacts that could reduce the likelihood of species recovery. The Service also reasonably concluded no habitat will be rendered permanently unsuitable or unavailable for recovery. Petitioners disagree, but they have not shown that the Service's predictive judgments are arbitrary.

4. The incidental take statement complies with the ESA. The Service used appropriate take thresholds for logperch and candy darter derived from Newcombe and Jensen (1996), which synthesizes the best available data. The conservatively-defined aquatic impact areas serve as an appropriate surrogate measure of take, and the BiOp clearly provides that anticipated take is exceeded if Project-related sediment exceeds any take threshold at the downstream boundary of any impact area. The monitoring plan is reasonably designed to isolate and measure Project-related sediment. It also requires MVP to promptly notify FERC and the Service of any exceedance and to give the agencies the information they need to determine if the Project caused the exceedance. Finally, clearing of unoccupied Indiana bat habitat is not a take; the Service properly analyzed the potential impact of such clearing on species recovery.

For all of these reasons, the petition for review should be denied.

STANDARD OF REVIEW

The Court reviews the BiOp under the deferential standard contained in the APA. Under that standard, a court may set aside agency action only if it is found to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). The scope of review “is limited to the administrative record before the agency when it makes its decision.” *Trinity American Corp. v. EPA*, 150 F.3d 389, 401 n.4 (4th Cir. 1998). “Review under

this standard is highly deferential, with a presumption in favor of finding the agency action valid.” *Ohio Valley Environmental Coalition v. Aracoma Coal Co.*, 556 F.3d 177, 192 (4th Cir. 2009). The reviewing court “is not empowered to substitute its judgment for that of the agency”; it evaluates only “whether the agency considered the relevant factors and whether a clear error of judgment was made.” *Id.* The “demanding burden” of showing that agency action is arbitrary falls on Petitioners. *Almy v. Sebelius*, 679 F.3d 297, 307 (4th Cir. 2012).

ARGUMENT

I. The Service’s discussion of the baseline and potential cumulative effects complies with the ESA.

The ESA directs the Service to render an opinion on whether the “action” under consultation is likely to cause jeopardy. 16 U.S.C. § 1536(a)(2), (b)(3)(A). Although the “action” is the subject of the jeopardy inquiry, the effects of the action can only be understood in context. Under the regulations, this context includes “the current status of the listed species,” the “environmental baseline,” and “cumulative effects.” 50 C.F.R. §§ 402.02, 402.14(g)(2)-(4), (h)(1)(ii-iv).

The baseline “refers to the condition of the listed species ... in the action area, without the consequences to the listed species ... caused by the proposed action,” and “includes the past and present impacts of all ... human activities in the action area.” *Id.* § 402.02. “Cumulative effects” are effects of future nonfederal actions “that are reasonably certain to occur within the action area of the Federal

action subject to consultation.” *Id.* The Service must add “the effects of the action and cumulative effects to the environmental baseline and in light of the status of the species ..., formulate [its] opinion as to whether the action is likely to jeopardize the continued existence of listed species.” *Id.* § 402.14(g)(4).

Like the rest of the BiOp, the Service’s discussion of the baseline and cumulative effects must “use the best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2). “This standard does not require the agency to conduct new tests or make decisions on data that does not yet exist. Rather, the best available data requirement merely prohibits an agency from disregarding available scientific evidence that is in some way better than the evidence it relies on.” *Center for Biological Diversity v. U.S. Fish & Wildlife Service*, 807 F.3d 1031, 1047 (9th Cir. 2015) (cleaned up).

Petitioners criticize the Service’s discussion of the baseline for the logperch and candy darter and the agency’s analysis of potential cumulative effects. Opening Brief 16-28.¹ But Petitioners’ arguments all lack merit. The Service used the best available data to accurately describe the “present and future human and natural contexts” in which the Project will occur. *Pacific Coast Federation of*

¹ Because Petitioners’ brief does not address the Service’s separate baseline analyses for the Virginia spiraea, the Indiana bat, and the northern long-eared bat, Petitioners have waived any objections to those analyses. *See Grayson O Company v. Agadir International LLC*, 856 F.3d 307, 316 (4th Cir. 2017).

Fishermen's Associations v. U.S. Bureau of Reclamation, 426 F.3d 1082, 1093 (9th Cir. 2005). Nothing more is required.

A. The “action” is the subject of the jeopardy inquiry.

Petitioners advance a threshold legal argument that the Service must analyze whether the baseline, the proposed action, and cumulative effects *collectively* will cause jeopardy. Opening Brief 15-16, 20-21. That is incorrect. The proposed “action” is the subject of the jeopardy inquiry. 16 U.S.C. § 1536(a)(2). The regulations make clear that the Service must consider the effects of the action “within the context of other existing human activities that impact the listed species,” *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 930 (9th Cir. 2008), but that “does not require [the Service] to include the entire environmental baseline in the ‘agency action’ subject to review,” *id.* See also *Center for Biological Diversity*, 807 F.3d at 1052 (it would be inconsistent “with the statutory scheme that jeopardy caused by cumulative effects could obviate the requirement *that the federal action itself* must cause some incremental deterioration in the species’ pre-action condition”) (emphasis added).

Petitioners cite *Defenders of Wildlife v. Babbitt*, 130 F. Supp. 2d 121 (D.D.C. 2001), in support of their contrary argument, but fail to mention that the same court properly rejected the same flawed reading of the regulations in a later order issued in the same case. See *Defenders of Wildlife v. Norton*, No. 99-927,

2003 WL 24122459, at *5-6 (D.D.C. Jan. 7, 2003). As the court explained, the baseline is the “starting point for assessing the impact of the action at issue,” but it is “only the impact of that proposed action which must be the subject of [the Service’s] ultimate jeopardy finding.” *Id.* at *5. “Ultimately, the environmental baseline is used to understand the consequences of an action by providing the *context or background* against which the action’s effects will occur.” 84 Fed. Reg. 44,976, 44,994 (Aug. 27, 2019) (emphasis added). As demonstrated below, the BiOp provides the requisite context.

B. The Service accurately described the baseline condition of the two affected logperch populations.

The logperch consists of seven geographically separate populations. JA0)47-49. The baseline discussion focuses on “the condition of the portion of the listed species ... that will be exposed to the effects of the action.” 84 Fed. Reg. at 44,994. Two logperch populations will be exposed to the Project’s effects: the Roanoke River and Pigg River populations. JA0103-06. The BiOp discusses the current condition of those populations, JA0046-50; the ongoing threats, including urbanization, chemical spills, and loss of sediment-free habitat, *id.*; the biological functions of the Roanoke River and Pigg River systems, JA0072-73; and the primary causes of logperch decline in the action area, which include chemical spills, runoff, channelization, impoundments, impediments, and siltation, *id.* To

determine how those ongoing stressors have affected the two populations, the Service relied on Roberts (2016). JA0048-50, 73, 105-06, 148.²

As discussed in the BiOp, Roberts (2016) conducted a population viability analysis for five logperch populations, including the Roanoke River and Pigg River populations. JA0048, 1612. The study estimates that the Roanoke River population consists of 16,875 adults and the Pigg River population consists of 9,281 adults. JA0049, 1621. The study also calculates a “minimum viable population” size, defined as a population that has a less than five percent probability of extinction over the next 100 years. JA0048, 1618-19. The minimum viable population size is 4,200 adults. JA0048, 50, 1626. Thus, despite the ongoing stressors discussed in the BiOp, JA0047, 49, 72-73, and repeated in Petitioners’ brief (at 18–19), the Roanoke River and Pigg River populations are well above the viable population threshold.

As discussed in the BiOp, Roberts (2016) also projects 100-year extinction risks for each population using certain variables, including “catastrophe” regimes. JA0048, 148. Catastrophes are anthropogenic events that reduce population size

² As Petitioners note (at 17), the BiOp appropriately contains limited discussion of certain *stream crossings* in the Roanoke and Pigg River watersheds that will not affect logperch. JA0069-71. But because other crossings and upland construction *will* affect the Roanoke and Pigg River populations, the BiOp properly discusses the baseline condition of each population as a whole. JA0046-50, 72-73, 105-06, 148. And contrary to Petitioners’ assertions (at 17 n.2), trenchless crossings are unlikely to have significant impacts on waterways. JA0025-27.

below the range of variability resulting from year-to-year environmental changes. JA1617. The risk projections include a “severe catastrophe” scenario in which a severe fish kill (e.g., a kill that eliminates 19.1 percent of the entire population) occurs on average once every five years. JA0048, 1617, 1619-20, 1625. Under all scenarios, the 100-year extinction probability for the Roanoke River population is almost always near zero. JA0048, 1620-21. Both the Roanoke River and the Pigg River populations remain viable in 100 years even under the pessimistic “severe catastrophe” scenario. JA0048, 148, 1626.

The Service incorporated the population estimates and risk projections into its jeopardy analysis, JA0105-06, 147-48, thus ensuring that it considered the Project’s effects on logperch “within the context of other existing human activities that impact the listed species.” *National Wildlife Federation*, 524 F.3d at 930.

1. The Service’s discussion of the baseline accounts for the impacts of ongoing stressors.

Petitioners contend that the Service’s discussion of the baseline condition of the affected logperch populations does not address “the stresses the species is already under,” the impacts of “past or present activities” in the action area, and ongoing stressors such as “urbanization, waters withdrawals, and chemical spills.” Opening Brief 16, 17, 19. That is incorrect. The results of the viability analyses developed in Roberts (2016) and used in the BiOp *reflect* the impacts of past and

ongoing stressors in the action area because the action area is within the watersheds occupied by those populations. *See* JA0071-73.

Consistent with the BiOp, Roberts (2016) found that loss “of silt-free habitat, habitat fragmentation by dams, and catastrophic fish kills from chemical spills are among the most serious ongoing threats to logperch populations.”

JA1613. The “Roanoke watershed is more urbanized, industrialized, and bisected by roads than other watersheds and may therefore be more susceptible to chemical spills.” JA1625. But “threats and risks to Roanoke logperch populations have not been quantified.” JA1613. The point of the analysis was to develop population estimates and risk projections that *account* for those threats to the extent possible using reliable data so that wildlife managers can “identify populations with the greatest relative extinction risk, as well as management strategies that might reduce this risk the most.” JA1612, 1627.

Petitioners also have not shown that existing stressors have changed significantly since the study was published in 2016. Simply noting some ongoing activities in the watersheds, Opening Brief 18-19, 26-27, does not suffice because human activities in those areas is nothing new; the consequences of such activities (e.g., loss of silt-free habitat) are discussed both in the study, *see* JA1613, 1625, and in the BiOp, JA0046-50, 72-73. A more recent study (cited in the BiOp as Roberts (2018)) also confirms that the Roanoke River and Pigg River populations

remain stable and at low risk despite ongoing threats. JA0049, 1237-38, 1247.

And in 2019, the lead author of both studies, who has recent rangewide experience, informed the Service that he was unaware of any new, changed, or increasing threats to any logperch population, JA1204, 1274-75 (cited in the BiOp at JA0050, 149). Petitioners cite no contrary evidence.

The Service therefore reasonably relied on the population estimates and risk projections developed in Roberts (2016) to account for the impacts of ongoing stressors on the logperch populations affected by the Project.

2. The Service was not required to provide an inventory of all past and ongoing activities in the action area.

Contrary to Petitioners' assertions, Opening Brief 16, 18, 20, 26-27, the Service was not also required to list and discuss each activity that has occurred or is occurring in the action area. The regulation requires a description of the "condition" of the listed species in the action area that reflects the "impacts" of all past and ongoing activities. 50 C.F.R. § 402.02. It does not require a detailed inventory of all activities that have led to the species' current condition. *See id.* And courts do not "impose procedural requirements" on agencies that are "not explicitly enumerated in the pertinent statutes." *San Luis & Delta-Mendota Water Authority v. Jewell*, 747 F.3d 581, 636 (9th Cir. 2014).

Nor would such an inventory serve any substantive purpose. What matters for purposes of the jeopardy analysis is that the proposed action "is viewed against

the aggregate effects of everything that has led to the species' current status.” *Consultation Handbook* at 4-37, JA1796. The viability analyses developed in Roberts (2016) and used in the BiOp *reflect* the aggregate effects of everything that has led to the current status of the affected populations. A detailed inventory of each past and ongoing activity that has contributed to those aggregate effects or that has led the species' current condition would add no value and is not required.

3. The risk projections account for potential climate impacts.

Petitioners next argue that the Service failed to consider “climate impacts” on logperch. Opening Brief 27-28. That argument fails because the risk projections developed in Roberts (2016) and used in the BiOp account for environmental stochasticity (unpredictable fluctuations in environmental conditions) using the best available data.

The Service recognized that climate change is an increasing threat to the logperch because of “storm events increasing in frequency and intensity, resulting in increased periods of higher water volume, flow rates, and turbidity.” JA0049. The Service also noted, however, that Roberts (2016) found that climate-related events such as floods and droughts already occur frequently and do not significantly affect logperch populations. JA0048, 1617. The authors based their conclusion on a review of 17 years of logperch survey data. JA1617.

Using the same 17-year dataset, the authors included a term in their modeling to account for environmental stochasticity. *Id.* The authors explained that the dataset was sufficient to capture “the *full range* of population variability due to environmental stochasticity” because it “encompassed some of the highest and lowest streamflow events on record.” *Id.* (emphasis added). The modeling terms for environmental conditions were kept constant because “obtainable data ... indicate no temporal trends in these features.” JA1614.

The Service thus reasonably relied on the risk projections in Roberts (2016) to account for fluctuations in environmental conditions, whether due to climate change or other environmental factors, and properly incorporated those projections into its jeopardy analysis. JA0148. Petitioners cite no “available scientific evidence” that the study fails to address, *Center for Biological Diversity*, 807 F.3d at 1047, or that contradicts the study’s finding that environmental events do not significantly affect logperch populations, JA0048, 1617. Petitioners thus have not shown that the Service’s reliance on those risk projections was arbitrary.

That the discussion of the available data primarily appears in Roberts (2016) rather than in the BiOp itself is immaterial because the Service relied on Roberts (2016) throughout the BiOp, JA0048-50, 73, 105-06, 148, and because judicial review is based on the “whole record,” 5 U.S.C. § 706. There “is no requirement that every detail of the agency’s decision be stated expressly in the ... BiOp. The

rationale is present in the administrative record underlying the document, and this is all that is required.” *In re Operation of Missouri River System Litig.*, 421 F.3d 618, 634 (8th Cir. 2005); *Miller v. Lehman*, 801 F.2d 492, 497 (D.C. Cir. 1986).

The BiOp thus adequately describes the current and future baseline condition of the affected logperch populations, providing the requisite “context or background” for the Service’s jeopardy analysis. 84 Fed. Reg. at 44,994.

C. The Service accurately described the baseline condition of the two affected candy darter populations.

The Project affects two candy darter populations: the Gauley River and Stony Creek populations. JA0074, 75. The Service used the information in its 2018 Species Status Assessment to describe how ongoing stressors in the action area are affecting each population. JA0051-54, 63-65, 75, 90-92.

“After identifying the factors (i.e., stressors) likely to affect the candy darter, [the Species Status Assessment] developed a semiquantitative model to estimate the condition of each candy darter population.” JA1432. As the BiOp explains, the model indicates that the Gauley River and Stony Creek populations are abundant, in good condition, and relatively free from hybridization with the variegate darter, which is the primary threat to the species. JA0051, 75, 115, 1448, 1469. The habitat also is in good condition, with good water quality and forest cover. JA0090-92, 1448. “Total forest cover is used to infer instream habitat conditions (specifically sedimentation, stream bottom embeddedness, and water

temperature), which are associated with the distribution and abundance of the candy darter.” JA1478. The habitat in Gauley River and Stony Creek is more than 90 percent forested. JA1484. “Forest cover and human population trends do not suggest candy darter habitat will change sufficiently enough to affect the species’ viability within the next 25 years,” JA1454, which is the period for which reasonable predictions can be made about “the potential significant effects of stressors within the range of the candy darter,” JA1411.

Nevertheless, the Species Status Assessment modeled a hypothetical “negative” habitat scenario in which ten percent of forest cover within certain ownership categories is lost over the next 25 years, representing “a high degree of land cover alteration that would likely produce marked changes in stream habitat quality.” JA1454-55. Even under that hypothetical negative scenario, the Stony Creek habitat remains in good/high condition and Gauley River habitat remains in moderate condition. JA1481, 1486.

The Service incorporated the results of the modeling into its jeopardy analysis, JA0151-54, thus providing an accurate description of the baseline conditions of the affected candy darter populations.

- 1. The modeling results used in the BiOp account for the impacts of all significant stressors.**

Petitioners contend that the Service analysis is “flawed” because it does not address the impact of a limestone mine adjacent to Stony Creek. Opening Brief

20. This argument fails for two reasons. *First*, the Service is not required to provide an inventory of each past or ongoing project in the action area. *Supra* pp. 18-19. *Second*, the modeling in the Species Status Assessment accounts for all “potential stressors (negative influences) and the contributing sources of those stressors,” JA1434, including the mine, JA1443. Because the Service incorporated the results of the modeling into the BiOp, JA0151-54, the BiOp also accounts for all potential stressors, including the mine.

2. The modeling results used in the BiOp account for potential climate impacts.

Petitioners assert that the Service failed to address potential impacts of climate change. Opening Brief 28. That is also incorrect. The Species Status Assessment explains that vulnerability of candy darter populations to climate change may be linked to forest cover: “populations within the higher elevation, more forested watersheds in the Upper Gauley and upper Greenbrier watersheds ... may be at low risk of the effects of climate change over the next 25 years,” but “isolated ... populations in less forested areas in the Middle and Upper New River watersheds may be increasingly stressed as warming trends continue.” JA1442. The Gauley River population is in the Upper Gauley watershed and the habitat is 92 percent forested. JA1484. The Stony Creek population is in Middle New River watershed, but the habitat is 97 percent forested. *Id.* Forest cover trends do not suggest that candy darter habitat “will change sufficiently enough to affect the

species' viability within the next 25 years." JA1454. Therefore, the Species Status Assessment indicates that the affected populations likely are at "low risk of the effects of climate change," JA1442, during the period for which reasonable predictions can be made, JA1411.

The BiOp, which incorporates the results of the modeling, thus provides an accurate description of current and future baseline condition of the affected candy darter populations using the best available data.

D. The Service reasonably concluded that additional cumulative effects are not anticipated.

Because the population assessments and risk projections for the logperch and candy darter already reflect the impacts of past and ongoing stressors, the Service's discussion of cumulative effects properly focused on whether there were specific future nonfederal projects in the action area that might require additional analysis. As the Service explained, while "there are numerous state and private activities currently occurring within the action area, these activities are ongoing and the effects created by those activities are considered in the Status of the Species ... and Environmental Baseline sections of this Opinion." JA0141.

MVP and FERC identified several nonfederal projects that could give rise to cumulative effects. *See id.* The Service determined that all but two had been completed or were ongoing at the time the BiOp was prepared and thus were accounted for in the discussion of baseline conditions. *See id.* For one remaining

project, no information was available. *Id.* And the sole remaining project was unlikely to adversely affect listed species. *Id.* The Service thus reasonably concluded that additional cumulative effects are not anticipated. *Id.* Petitioners attack the Service's conclusion, but their arguments lack merit.

Petitioners criticize the Service for relying on FERC and MVP to identify projects that could give rise to cumulative effects. Opening Brief 23-24, 27. The criticism is unfounded. The ESA provides for "Interagency consultation," 16 U.S.C. § 1536(a)(2), and the regulations divide responsibilities between the Service and the action agency. The action agency (or applicant) must provide "an analysis of any cumulative effects," 50 C.F.R. § 402.14(c)(1)(iv); *see also id.* §§ 402.12(a), 402.12(f)(4), and the Service may rely on that information in formulating its BiOp, *see id.* § 402.12(k)(2)(ii).

Petitioners contend that the Service's discussion of cumulative effects is insufficient because it does not address ongoing activities in the region. Opening Brief 26-27. This argument also lacks merit. To the extent ongoing activities are impacting the relevant populations, the population assessments and risk projections discussed in the BiOp adequately account for those impacts. *Supra* pp. 14-23.

Petitioners assert that in other BiOps, the Service addressed ongoing activities and continuing threats in its discussion of cumulative effects. Opening Brief 22. Perhaps so; the Service often tailors its analysis to the specifics of each

consultation. But the Service certainly has discretion to address the impacts of ongoing activities in its discussion of the baseline, which is defined to include “the past *and present* impacts of all ... human activities in the action area.” 50 C.F.R. § 402.02 (emphasis added).

Regardless, what matters is not *where* ongoing impacts are addressed, but *whether* they are addressed—and they were addressed here, because the BiOp’s description of the current and future condition of the affected populations reasonably accounts for ongoing stressors. *Supra* pp. 14-23. Indeed, the science-based risk projections used in the BiOp provide precisely the kind of “forward-looking analysis based on past trends” that Petitioners claim is required. Opening Brief 24. The Service rarely has the benefit of such current, peer-reviewed risk projections for the specific populations that will be affected by the action under consultation—and Petitioners have completely failed to demonstrate that the Service’s reliance on those projections as a means of accounting for ongoing impacts was somehow “arbitrary” or “capricious.” 5 U.S.C. § 706(2)(A).

Petitioners argue that FERC’s cumulative impact analysis under the National Environmental Policy Act (NEPA) identifies projects that the Service failed to consider in its discussion of cumulative effects. Opening Brief, 24 n.10, 26-27. But FERC’s thorough analysis cuts the other way and supports the Service’s determination that cumulative effects are unlikely.

The NEPA and ESA analyses are not directly comparable because the NEPA analysis is broader. At the time FERC prepared its analysis, NEPA regulations defined cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added *to other past, present, and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” 40 C.F.R. § 1508.7 (2018) (emphasis added); *see also* JA1572. The NEPA cumulative impact analysis thus covered a far broader class of activities than the ESA cumulative effects analysis, which is limited to future nonfederal actions. 50 C.F.R. § 402.02. FERC also used a large, 4.5-million acre analysis area for the two covered projects, JA1568, whereas the ESA action area is limited to a corridor along the pipeline right-of-way consisting of 1,002,628 acres and the specific stream reaches in which the Project may cause a detectable increase in sedimentation, JA0040, 75.

Despite its far broader analysis, FERC concluded that the actions that could give rise to cumulative impacts fell within a mere 1.8 percent of its 4.5 million-acre analysis area. JA1568. That hardly undermines the Service’s determination that a far narrower class of activities are not reasonably certain to occur within the much smaller ESA action area. And despite repeatedly citing FERC’s “thorough” analysis, Opening Brief 26, Petitioners do not actually identify *a single future nonfederal project* referenced in that analysis (or elsewhere in the record) that falls

within the smaller ESA action area, that is reasonably certain to occur, and that is not already addressed in the BiOp.

The Service's cumulative effects determination was reasonable.

II. The Service reasonably analyzed the effects of the action.

After discussing the baseline, the Service analyzed the “effects of the action,” 50 C.F.R. § 402.14(h)(1)(iii), which are the “consequences to listed species ... that are caused by the proposed action,” *id.* § 402.02. The BiOp contains a comprehensive discussion of the Project's effects on logperch and candy darter. JA0095-116. Petitioners challenge two aspects of that discussion. *First*, they assert that the Service arbitrarily “adopted a blanket 200 m upstream/800 m downstream” definition of the stream crossing and mixing zone impact areas. Opening Brief 50-51. *Second*, Petitioners assert that the Service arbitrarily excluded stream crossings in the Blackwater River drainage from its effects analysis. *Id.* at 51-55. Neither argument has merit.

A. The Service reasonably defined the crossing and mixing zone impact areas.

The Service conservatively defined the crossing and mixing zone impact areas using the findings of multiple studies discussed in the BiOp. JA0103. Those studies document the effects of numerous pipeline crossings on aquatic habitat. *Id.* In all cases, the “downstream impacts due to increases in [sediment] concentrations and sediment deposition occurred within 500 m of pipeline crossings,” *id.*, even

when sediment concentrations far exceeded the mean concentrations (25 mg/L above background) associated with the dam-and-pump crossing technique that MVP will employ, JA0103, 830-33, 837, 845, 850-53, 1751-52, 1762-65. To be conservative, the Service defined the impact area as *twice* the maximum 500-meter area documented in the studies, extending from 200 meters above the crossing to 800 meters below. JA0103.

For mixing zones, the actual point in an occupied stream at which Project-related sediment from a tributary will dilute below the lowest take threshold cannot be calculated. JA0039, 104. Therefore, the Service again properly relied on the scientific literature to define the appropriate impact area.

For tributaries to logperch-occupied streams, the highest predicted Project-related sediment concentration is 702 mg/L. JA0104. For tributaries to candy darter-occupied streams, the highest predicted concentration is 159 mg/L. JA0114. In the studies of pipeline crossings cited in the BiOp, sediment concentrations were as high as 1,500 mg/L, yet in all cases, the impact area was limited to 500 meters downstream of the crossing. JA0103-04, 107. The Service therefore reasonably and conservatively defined the mixing zone impact areas as twice that size, extending from 200 meters above to 800 meters below the tributary's confluence with the occupied stream. JA0104.

Petitioners cite “anecdotal” information suggesting that sediment from crossings may be detectable farther downstream. Opening Brief 51. But that information is in no way better than the multiple published studies that the Service used in its analysis—all of which show that the *impact area* is limited to 500 meters downstream. *See Center for Biological Diversity*, 807 F.3d at 1050 (rejecting claim that agency ignored “concerns” where plaintiffs did not show that “the ‘concerns’ ... were supported by better science than used in the Biop”).

The Service reasonably and conservatively defined the stream crossing and mixing zone impact areas using the best available data.

B. The Service reasonably concluded that logperch are unlikely to be present in the Blackwater River drainage.

The pipeline will cross five waterbodies in the Blackwater River drainage that contain suitable logperch habitat. JA0069. Although the Service assumed logperch presence in certain waterbodies containing suitable habitat, JA0069-71, the Service did not assume presence in the Blackwater drainage for two reasons: (1) traditional survey efforts (unrelated to the Project) have not documented logperch presence, JA0069, 1378, 1662, 1688, 1699; and (2) recent environmental DNA (eDNA) sampling by independent scientists and by MVP did not detect logperch, JA0070, 1382-83, 1388.

The eDNA approach relies on the fact that fish release DNA molecules into the water that can be captured by filtration. JA1378-79. MVP conducted

extensive eDNA sampling in 2020 in the specific streams that will be crossed, all with negative results. “A total of 180 sites were analyzed within the Blackwater River drainage yielding zero positive results for [logperch].” JA725-26. The Service therefore concluded that logperch are unlikely to be present in the drainage or affected by the stream crossings. JA0069.

Petitioners argue that the universally negative survey and eDNA sampling results do not conclusively “demonstrate absence of logperch.” Opening Brief 52-53. Perhaps so, but the Service is not required to prove a negative. The Service is required to analyze the “effects of the action,” which include those consequences on listed species that “are reasonably certain to occur.” 50 C.F.R. § 402.02. “A conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available.” *Id.* § 402.17(a)-(b). Here, *all* of the available data indicates that construction activities in the Blackwater drainage are *not* reasonably certain to affect logperch because logperch are unlikely to be present.

The negative results of the recent and extensive eDNA sampling are particularly informative because studies indicate that eDNA sampling may be more reliable than traditional surveys. Scientists have found that eDNA sampling has “a higher detection rate and lower sensitivity to sampling conditions” than traditional surveys. JA1378, 1386. “In side-by-side comparisons, eDNA surveys typically

outperform traditional survey methods, by detecting a species in more locations and/or with less required sampling effort.” JA1378.

The eDNA approach is not perfect, *see id.*, but the universally negative survey and eDNA sampling results constitute the best available data and provide a rational basis for the Service’s judgment that logperch are unlikely to be present in the Blackwater River drainage or affected by construction in the drainage.

III. The Service’s recovery analysis complies with the ESA.

The jeopardy standard required the Service to address whether the Project will “reduce appreciably the likelihood of both the survival and recovery” of the affected species “by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. The word “both” emphasizes “that, except in exceptional circumstances, injury to recovery alone would not warrant the issuance of a ‘jeopardy’ biological opinion.” 51 Fed. Reg. 19,926, 19,934 (June 3, 1986). “The ‘continued existence’ of the species is the key to the jeopardy standard, placing an emphasis on injury to a species’ ‘survival.’” *Id.* But “recovery impacts, ‘like survival impacts, should be assessed.’” *Defenders of Wildlife v. U.S. Dep’t of the Interior*, 931 F.3d 339, 354 (4th Cir. 2019) (citation omitted).

The Service need not conclude that the proposed action will “boost the [species]’s chances of recovery; [the Service] must only determine those chances are not ‘appreciably’ diminished by the [action].” *Salmon Spawning & Recovery*

Alliance v. National Marine Fisheries Service, No. 08-35439, 342 Fed. Appx. 336, 338 (9th Cir. Aug. 14, 2009). A reduction is “appreciable” if it “impacts the species in a biologically meaningful and consequentially negative way.” JA0145; *see also Oceana, Inc. v. Pritzker*, 75 F. Supp. 3d 469, 481-87 (D.D.C. 2014).

“Deciding how to assess, and indeed the assessment of, the impact of a [proposed action] on [a species]’s potential for recovery ‘involves a great deal of predictive judgment. Such judgments are entitled to particularly deferential review.’” *Salmon Spawning*, 342 Fed. Appx. at 339 (citation omitted).

Here, the Service determined that the Project is unlikely to “reduce appreciably the suitable habitat available for recovery or the recovery potential” of the logperch and candy darter. JA0149-50, 154. Although Petitioners disagree, Opening Brief 29-40, the Service’s expert judgment is reasonable, supported by the record, and entitled to deference.

A. The Service reasonably analyzed potential impacts on logperch recovery.

Survival and recovery are closely related concepts, 51 Fed. Reg. at 19,934, and here, the Service’s analysis of impacts on logperch recovery properly builds on its discussion of the Project’s effects on survival. *See* JA0101-08, 146-50.

As the BiOp explains, the logperch impact area consists of 17.6 kilometers of waterways in the Roanoke River system and 6.7 kilometers in the Pigg River system. JA0101-06. This 24.3-kilometer area represents 0.9 percent of the 2,795

kilometers of available suitable habitat. JA0106. Using the population estimates developed in Roberts (2016), the Service estimated that 2,517 adults from the Roanoke River population (14.9 percent of the population) and 622 adults from the Pigg River population (6.7 percent of the population) may be present in the impact areas. JA0105-06. The total number of potentially affected individuals represents five percent of the rangewide adult population. JA0049.

Within the impact areas, increases in Project-related turbidity will be short-term and episodic, resulting from stream crossings and from storms that transport sediment from disturbed upland areas. JA0102. Such temporary increases in turbidity are predicted to be well below levels that could cause mortality.

Compare JA0694, 698-99, 716 (predicted sediment concentrations) *with* JA1799, 1804 (severity-level 10 lethal concentrations). In response to sediment plumes, “most logperch are anticipated to cease feeding and move to clearer water until sediment levels return to background,” JA0147, and such habitat shifts are not unusual, JA0100-01, 108. Increased sediment deposition may temporarily degrade spawning habitat, but studies indicate that egg and larval mortality is negligible. JA0097, 1645, 1770. Sediment deposition also may reduce the logperch’s prey base, and reductions may persist for up to four years. JA0097. But the habitat will remain functional in the interim, and logperch are expected to continue to use the affected waterways after the initial sediment plumes dissipate. JA0101, 148-49.

Although effects on logperch are expected to be temporary and sublethal, the Service also recognized that in a small number of cases, the combined effects of increased sedimentation, decreased dissolved oxygen, and increased temperature could cause mortality. JA0147.

After explaining the basis for its opinion that the Project's effects will not appreciably reduce the likelihood of species *survival* (which Petitioners do not contest), the Service gave three primary reasons in support of its opinion that the Project also will not appreciably reduce the likelihood of species *recovery*: (1) the Project will affect a small number of individuals relative to the rangewide population, and most effects will be temporary and nonlethal; (2) the quantity of affected habitat is minor compared to the amount of suitable habitat available rangewide, and none of the affected habitat will be rendered permanently unsuitable; and (3) the affected logperch populations are stable or increasing, and the rangewide status of the species appears to be improving. JA0149-150.

Petitioners assert that the Service did not consider the importance of the Roanoke River and Pigg River populations for species recovery or explain how the number of affected individuals might impact each population. Opening Brief 31-33. Both assertions are wrong.

The Service recognized that the Roanoke and Pigg River populations "are expected to underpin the recovery of the species." JA0073. The Service therefore

appropriately analyzed whether the effects on individuals within each population are likely to cause a decline in the population as a whole, JA0143, which depends on “the current and future baseline condition of that population,” JA0147.

As the Service explained, Roberts (2016) calculated that “all populations had a greater than 95% probability of persisting for the next 100 years under a less severe catastrophe scenario,” and even “under a severe catastrophe scenario, such as a total fish kill in a stretch of the Roanoke or Pigg Rivers, the authors determined that the Roanoke and Pigg River populations would remain viable.” JA0148. The Project’s primarily temporary, nonlethal effects are unlikely to “cause significant reductions in short-term fitness or any reduction in long-term fitness of these [logperch] populations, let alone rise to the level that would be categorized as a catastrophe.” *Id.* The Service thus concluded that the Project’s effects “do not pose a significant risk to the Roanoke or Pigg River populations and will not result in permanent population declines.” *Id.*

Because each population is predicted to remain viable in 100 years even under a pessimistic catastrophe scenario in which a severe fish kill (e.g., a kill eliminating 19.1 percent of the entire population) occurs once every five years, JA0048, 1617, 1619-20, 1625, the Service could reasonably conclude that the Project’s primarily *nonlethal* effects on a smaller percentage of each population are unlikely to cause long-term population declines that could hinder species recovery.

Petitioners do not address the risk projections developed in Roberts (2016) and used in the BiOp. Instead, they cite an outdated Service “factsheet” for the proposition that both populations have a “low density and limited range” and “could go extinct with minor habitat degradation.” Opening Brief 32; JA1096. But that document does not reflect the best data *currently* available and properly used in the BiOp, which indicates that both populations are “numerically large and geographically extensive,” and at low risk of extinction from both environmental and anthropogenic factors. JA1627; *see also* JA0073, 1247.

Petitioners quibble with the Service’s calculation of the amount of suitable habitat that will be impacted, Opening Brief 31 n.16, but this misses the more substantive point: regardless of whether the Project will impact 0.9 percent of suitable habitat or 3.7 percent of known occupied habitat, *no habitat* will be rendered permanently unsuitable or unavailable for recovery. JA0109.

As the Service explained, any Project-related increases in turbidity are expected to be short-term and episodic. JA0104. Sediment may deposit on the stream floor and reduce benthic invertebrate communities (organisms that live in the substrate), and those conditions could persist for longer periods. JA0097-98. But “[m]ost studies documented recovery of the affected stream reach within 1 to 3 years after construction.” JA0098. “Seven studies ... indicated recovery of the benthic invertebrate communities occurred within 6 months to 1 year after pipeline

construction.” JA0097, 830-31, 837, 848, 1760-72. The Service therefore conservatively assumed that reductions in benthic invertebrates could persist for up to four years, but that *no* habitat would be rendered permanently unsuitable or unavailable for recovery. JA0109. Petitioners have not demonstrated that the Service’s conclusion is arbitrary.

Moreover, even during the impact period, the affected areas still will function as suitable habitat, only at a reduced level because of sediment deposition and reductions in (*not* elimination of) benthic invertebrates. *See* JA0139-40, 837, 851, 853, 1769. Logperch thus are expected to return to the impact areas after initial sediment plumes dissipate and to use the areas as benthic invertebrate populations gradually return to baseline levels. *See* JA0149.

Petitioners criticize the Service for allegedly asserting that the Project “will not increase threats” listed in the recovery plan and ignoring that sedimentation is a threat. Opening Brief 35. That is a distortion of the BiOp. What the Service actually said is that the Project “will not increase threats listed in the [logperch] recovery plan (Service 1992b) *such as building dams or other impediments to movement; increase channelization; remove woody debris; or create a long-term water withdrawal project.*” JA0149 (emphasis added). The Service obviously recognized that another significant threat is the risk posed by “increased sediment and deposition.” JA0049; *see also* JA0072-73, 149. That is why the agency

devoted a substantial portion of the BiOp to analyzing the potential effects of Project-related sedimentation. JA0095-109, 146-150.

This is not a case where the BiOp “says nothing” about recovery, or where the Service “entirely failed to consider an important aspect of the problem.” *Defenders*, 931 F.3d at 354-55. The Service considered the relevant factors and articulated a rational basis for its conclusion that the Project will not appreciably reduce the logperch’s recovery potential. JA0095-109, 146-150. Nothing more is required. *See Rock Creek Alliance v. U.S. Fish and Wildlife Service*, 663 F.3d 439, 443 (9th Cir. 2011) (upholding recovery analysis where a “fair reading” of the BiOp, “coupled with the deference due to the agency, leads to the conclusion that ... Service adequately considered the impact that the [project] could have on the habitat’s value for [species] recovery”). Courts do not “second-guess an agency’s well-reasoned decision simply because a party disagrees with the outcome.” *American Whitewater v. Tidwell*, 770 F.3d 1108, 1116 (4th Cir. 2014).³

B. The Service reasonably analyzed potential impacts on candy darter recovery.

The BiOp provides a detailed analysis of the Project’s effects on candy darter survival and recovery, incorporating the baseline data from the Species

³ Petitioners also incorrectly assert (at 34 n.18) that the Service modified a draft habitat monitoring plan to accommodate MVP’s schedule. *See* JA0373 (explaining modification).

Status Assessment for the two affected populations (which Petitioners do not address). JA0114-116, 139-40, 150-153. As discussed, both populations are in good condition; the habitat is in good condition with more than 90 percent forest cover and good water quality; and “[f]orest cover and human population trends do not suggest candy darter habitat will change sufficiently enough to affect the species’ viability within the next 25 years.” JA1454; *supra* pp. 21-24.

The entire impact area for the candy darter is limited to two conservatively-defined mixing zones in the Gauley River and one in Stony Creek. JA0114, 312. This three-kilometer impact area represents 0.50 percent of the total amount of rangewide suitable habitat (595 stream kilometers) for the species. JA0153. The Service provided a detailed explanation for its conclusion that the Project’s effects are unlikely to appreciably reduce the candy darter’s recovery potential. *See* JA0153-54. Petitioners offer two criticisms, but neither has merit.

Petitioners first assert that the Service’s analysis “arbitrarily ‘ignores the life cycle’ of the darter.” Opening Brief 38 (quoting *Pacific Coast Federation of Fishermen’s Associations v. National Marine Fisheries Service*, 265 F.3d 1028, 1037 (9th Cir 2001)). That is incorrect. An agency arbitrarily ignores a species’ life cycle when it only considers habitat impacts that persist beyond that life cycle, because in the interim, short-term impacts could cause significant harm. *See Pacific Coast*, 265 F.3d at 1037-38 (agency erred by only considering impacts

“that persist more than a decade and are measurable at the watershed scale,” when the affected species had a short life cycle and could be extirpated in the interim); *Miccosukee Tribe v. United States*, 566 F.3d 1257, 1270-71 (11th Cir. 2009) (“It is not enough that the habitat will recover in the future if there is a serious risk that when that future arrives the species will be history”).

The Service did not commit that error here. The Service properly analyzed both the short-term and long-term effects of the Project, without limiting its analysis to effects that persist only for a prolonged period:

In the short-term, the [candy darter] population within the action area will likely persist, but with decreased survival and reproductive rates due to increased physiological stress, decreased foraging efficiency, and decreased spawning success. In the long-term, these [candy darter] populations are expected to recover to previous abundances as stream conditions return to previous baseline levels following restoration of the action area.

JA0116; *see also* JA0150-53 (analyzing short-term impacts on individuals and potential long-term impacts on affected populations as a whole). The Service also explained that although some habitat impacts may persist for several years, the habitat “will still function as required by the species, but at a reduced level,” as deposited sediment is flushed through the system and benthic invertebrate communities gradually return to baseline levels. JA0139-40; *see also* JA0837, 851, 853, 1769. Petitioners do not identify any flaw in the Service’s analysis or any significant short-term impact that the agency entirely failed to consider.

Petitioners next contend that the Project will hinder recovery because the pipeline crosses a creek that might one day be selected for darter reintroductions, assuming reintroductions are “determined to be a feasible conservation tool.” JA1441; Opening Brief 39-40. This speculative argument fails for two reasons. *First*, project-related sediment will not render any currently suitable habitat permanently unsuitable or unavailable for future reintroductions. JA0116. *Second*, even if the Project did temporarily delay future reintroductions in one waterway, such a temporary delay in the species’ *expansion* would not “*reduce* appreciably the likelihood of ... recovery ... by *reducing* the reproduction, numbers, or distribution of th[e] species.” 50 C.F.R. § 402.02 (emphasis added); *see also Rock Creek Alliance*, 663 F.3d at 443 (upholding recovery analysis and “no jeopardy” conclusion despite the finding that the “rate of recovery of the core area population may slow slightly”).

The Service’s analysis of the Project’s potential impacts on logperch and candy darter recovery is reasonable and entitled to deference.

IV. The incidental take statement complies with the ESA.

Because the project will cause take, the Service provided a take statement with the BiOp. JA0166-86. Petitioners allege three defects in the take statement for logperch and candy darter. They contend that: (1) the take thresholds are arbitrary; (2) there is no clear standard for determining when anticipated take is

exceeded; and (3) the monitoring plan is inadequate. Opening Brief 40-50.

Petitioners also argue that the take statement for the Indiana bat improperly omits tree clearing in unoccupied habitat. *Id.* at 55-58. All four arguments fail.

A. The Service used appropriate take thresholds for logperch and candy darter.

To determine the extent of anticipated logperch and candy darter take, the Service first had to define the sediment concentration “thresholds” at which take will occur. JA0101. As a starting point, the Virginia Field Office (responsible for drafting the relevant sections of the BiOp) used guidance from the Washington Field Office for evaluating sediment effects on bull trout, a west coast salmonid (“Bull Trout Guidance” or “Guidance”). JA0249-305. The Guidance uses harm thresholds derived from Newcombe and Jensen (1996). JA0276, 1798-1832.

The Bull Trout Guidance has never been applied to any species other than bull trout; the BiOps cited in Petitioners’ brief (at 42) all involved that species. The Guidance also contains an inconsistency as to how its thresholds are applied. All four thresholds at issue ostensibly are derived from Newcombe and Jensen. JA0101, 276-77, 293, 1803. Yet in one instance, the Guidance refers to exposure above the specified sediment concentration “for more than 1 hour *continuously*,” while in two other instances, it refers to exposure above the specified concentration for a period of time “*cumulatively*.” JA0102, 276-77. The Guidance does not

explain the basis for the disparate approach or identify the time period during which cumulative exposures would be measured.

To resolve the discrepancy, and to determine how best to adapt the Guidance to logperch and candy darter at issue here, the Virginia Field Office relied directly on Newcombe and Jensen to identify appropriate take thresholds: “Newcombe and Jensen (1996) provided the basis for analyzing sediment effects to bull trout in [the Guidance] and is being applied in this [BiOp] as the basis for analyzing sediment effects to [logperch and candy darter] and their habitat.” JA0101, 112.

Newcombe and Jensen used models to correlate severity of effects on fish to sediment exposure. JA0836. The severity-of-effect level is a function of the sediment “dose” (sediment concentration and exposure duration). JA0836, 1798. The authors used different models to correlate severity-of-effect scores to sediment doses for salmonids and nonsalmonids. JA0101. The Virginia Field Office used the salmonid model (Model 1) because it is data-rich and because salmonids and darter species appear likely to respond similarly to sediment. JA0101-02, 111-12.⁴ The BiOp then explains that the severity-of-effect scores in Model 1 are based on *duration* of exposure, which generally refers to continuous—not cumulative—

⁴ Petitioners incorrectly assert (at 45 n.23) that darter species are more sensitive to sediment than salmonids. *See* JA0101-02, 900. Regardless, the Service rationally explained that it would be inappropriate to use the non-salmonid model (Model 6) because it is data-poor and does not address juveniles or sublethal effects. JA0101. Petitioners do not challenge that explanation.

exposure. JA0102. To ensure consistency with Newcombe and Jensen, the Virginia Field Office consistently measured *continuous* exposure duration, resulting in the following conservative take thresholds:

- a. Any time sediment concentrations exceed 148 mg/L over background.
- b. When sediment concentrations exceed 99 mg/L over background for more than 1 hour continuously.
- c. When sediment concentrations exceed 40 mg/L over background for more than 3 hours continuously.
- d. When sediment concentrations exceed 20 mg/L over background for over 7 hours continuously.

JA0102.

Petitioners first mount a procedural challenge to the Virginia Field Office's approach. They contend that the use of "continuously" for items (c)-(d) represents an unexplained change in agency policy because the Guidance uses "cumulatively" for those items (while using "continuously" for item (b)). Opening Brief 43, 46; JA0276-77. Petitioners assert that the Virginia Field Office "initially adopted the bull trout thresholds" but then "abruptly changed course" without explanation, Opening Brief 43, using "continuously" for thresholds (c)-(d) in "last-minute edits to the BiOp," *id.* at 41. This argument fails for three reasons.

First, the Service does not "adopt" anything until it makes a final decision. And the record shows that the agency tentatively planned to measure *continuous*

exposures for thresholds (c) and (d) weeks before the final BiOp was issued. *See* JA0539-40 (July 15, 2020 draft BiOp). That was not a “last-minute” decision.

Second, there is no agency-wide policy or practice of using the Bull Trout Guidance to analyze sediment effects on other aquatic species. The Guidance was developed by a single field office to analyze effects on one species. It is not a nationwide policy, and it has never been applied to any species other than bull trout. In fact, to the best of the Service’s knowledge, this consultation is the first instance in which *anyone* has attempted to identify appropriate sediment-related harm thresholds for logperch or candy darter. *See* JA0101, 112. The Virginia Field Office thus could not have “changed course” from established agency policy or practice because there was no applicable policy or practice.

Third, and most importantly, the Service gave a reasoned explanation for its decision to depart from the Guidance in one limited respect, and to measure *continuous* exposures for thresholds (c) and (d) as well as for threshold (b): that approach is consistent with Newcombe and Jensen (1996), JA0102, which was “applied in this [BiOp] as the basis for analyzing sediment effects to [logperch and candy darter] and their habitat,” JA0101, 112. *Cf. Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) (“Agencies are free to change their existing policies as long as they provide a reasoned explanation for the change.”).

Substantively, Petitioners have not shown that the Service’s explanation is arbitrary. Petitioners contend that in the “scientific literature,” the term “exposure duration” refers to the “cumulative” sum of intermittent exposures over some undefined time period. Opening Brief 44. That contention is both unsupported and irrelevant because that is not how “exposure duration” is used in Newcombe and Jensen (1996).

In that study, the severity of effect on fish is a function of the dose, which is the sediment concentration and the duration of exposure. JA1798; *see also* JA963-73 (explaining dose/response approach). That straightforward formula assumes a single, continuous period (measured in hours) during which the fish is exposed to the specified sediment concentration. *See* JA1803, 1825-32; *see also* JA0900 (independent expert noting that the modeled equations in Newcombe and Jensen used “[s]ustained 24-hour sediment concentration”) (emphasis added). If the dose referred to the sum total of “intermittent” exposures, as Petitioners incorrectly assert, the authors could not have correlated the dose to a particular severity-of-effect level without first identifying the time period over which the intermittent exposures occurred—which the study does not do. Exposure duration in Newcombe and Jensen (1996) thus refers to *continuous* exposure for the specified number of hours at the specified concentration; that is the “dose.” Petitioners’ contrary reading of the study is simply wrong.

Nor have Petitioners identified any study that is “in some way better than” Newcombe and Jensen. *Center for Biological Diversity*, 807 F.3d at 1050. Petitioners quote another study (that the Service considered) for the proposition that “it is the sum effect of all disturbances which is of critical interest.” Opening Brief 44. But that study goes on to state that “there is no manner by which the cumulative nature of small events can be assessed.” JA0978. It also states that Newcombe and Jensen’s severity-of-effects tables “provide a method by which threshold criteria can be assigned for periods of various duration” and “a means by which sediment criteria can be assigned in a justifiable manner for the protection of aquatic habitat.” JA0985. The study therefore *supports* the Service’s use of Newcombe and Jensen to identify approach take thresholds.

Petitioners next cite another BiOp’s statement that “multiple [sediment] pulses in one area increase the total duration of exposure.” JA1038. But the quoted BiOp goes no further than that: it does not undermine the conclusion that the model results in Newcombe and Jensen are based on “[s]ustained” exposures, JA0900, or identify any superior methodology for developing appropriate take thresholds (because none exists).

Petitioners cite an EPA guidance document that defines “exposure duration” as a time interval during which exposure occurs “either continuously *or* *intermittently*.” Opening Brief 44. Petitioners neglect to mention that the

document (which is not part of the administrative record) is irrelevant on its face—it states (at page 2) that it deals with “human exposure to chemical substances” and warns that its definitions may not apply in other contexts.

A court reviewing a BiOp does “not sit as a panel of referees on a professional [scientific] journal, but as a panel of generalist judges obliged to defer to a reasonable judgment by an agency acting pursuant to congressionally delegated authority.” *San Luis*, 747 F.3d at 621. And here, the Service reasonably explained its decision to consistently measure *continuous* exposure duration: that approach is consistent with Newcombe and Jensen (1996), JA0102, which the Service appropriately used “as the basis for analyzing sediment effects to” logperch and candy darter, JA0101, 112. The Court should decline Petitioners’ invitation to “second guess [the] agency’s reasonable choice of methodology.” *American Whitewater*, 770 F.3d at 1116.

Petitioners also incorrectly assert that measuring “continuous” rather than “cumulative” exposures results in a “weaker standard.” Opening Brief 41. No comparison is possible without first identifying the period over which cumulative exposures would be measured. The Bull Trout Guidance and the underlying scientific literature do not provide that information—precisely because the sediment concentration thresholds developed in Newcombe and Jensen (1996) and applied in the Guidance are based on *continuous*, not cumulative, exposures.

Nor are the approaches taken in the bull trout BiOps cited by Petitioners superior to the Service's approach here. For example, the Galena Road Relocation Project BiOp states (at pages 51 and 76) that take will occur if the sediment concentration threshold is exceeded "for more than 7 hours, cumulatively, over a 10-hour workday." The 10-hour period was selected not for any scientific reason, but because that was the daily period during which in-water work would occur. Because measurements are limited to the 10-hour workday, an exceedance of the take threshold (whether measured cumulatively *or* continuously) could go undetected if sediment continues to enter the stream by (for example) stormwater runoff from upland construction work, which that project also entailed. *See id.* at 50. Other bull trout biological opinions cited by Petitioners took a similar approach. *See* JA0956, 959-60, 1181.

No similar result is possible under the Service's approach here. The monitoring plan prescribed in the take statement is comprehensive and unprecedented. It requires frequent and rigorous monitoring, and it requires MVP to take preventative action long before any effects threshold is exceeded at the relevant monitoring stations. *See* JA0335-36, 341-43. No valid basis exists for concluding that this comprehensive monitoring regime, in combination with the Service's science-based take thresholds, is "weaker" than the approach taken in any of the bull trout BiOps.

B. The take statement provides a clear standard for determining when anticipated take is exceeded.

The take statement must specify “the impact, i.e., the amount or extent, of such incidental taking on the species.” 50 C.F.R. § 402.14(i)(1)(i). Where (as here) a surrogate is used, the Service must set “a clear standard for determining when the level of anticipated take has been exceeded.” *Id.* The term “clear” is intended “to ensure the standard is understandable to the holder of the incidental take statement” (normally the action agency), 80 Fed. Reg. 26,832, 26,841 (May 11, 2015), because “if the extent of take is exceeded, the regulations require the action agency to immediately reinitiate consultation,” *id.* at 26,842.

The take statement for logperch and candy darter provides the required clear standard. The surrogate is the “impact areas in which project-related [sediment] levels are expected to exceed one or more of the take thresholds” specified above. JA0169, 173. The surrogate is exceeded when project-related sediment causes an exceedance of one of those take thresholds “at the downstream limit of any of the impact areas.” *Id.*

Petitioners argue that the standard is ambiguous as to whether MVP must be “solely responsible” for an exceedance. Opening Brief 46. The standard is not ambiguous. “Project-related” sediment must exceed one of the specified sediment concentrations “above background.” JA0169. The “background” sediment levels reflect other, preexisting sources of sediment. *See* JA0169, 276-77.

The monitoring plan is designed to “isolate and measure sediment originating from the Project,” JA0331, which should make determining whether the Project caused an exceedance straightforward. The federal water quality expert who independently reviewed the plan agreed that it is reasonably designed to “differentiate suspended-sediment load due to project activities from suspended-sediment loads due to other factors.” JA0377; *see also* JA0370-72.

But even if determining whether the Project caused an exceedance proves difficult in a particular case, that would be due to the facts on the ground, not an ambiguity in the take statement. The requirement that project-related sediment exceed a certain level above background is clearly “understandable to the holder of the incidental take statement,” 80 Fed. Reg. at 26,841, and provides a “method by which the applicant or the action agency can gauge their performance,” *Arizona Cattle Growers’ Association v. U.S. Fish and Wildlife Service*, 273 F.3d 1229, 1250 (9th Cir. 2001). Nothing more is required.

Petitioners complain that there are no additional standards governing *how* FERC and the Service will determine whether an exceedance is attributable to the Project. Opening Brief 47. But the Service addressed that issue the only way it can be addressed: by requiring robust monitoring to “isolate and measure sediment originating from the Project,” JA0331, and by mandating that MVP provide the Service and FERC with the facts surrounding an exceedance as quickly as possible,

JA0343-45. Because the facts alone will dictate whether the Project caused an exceedance, there are no additional standards that the Service could have prescribed. *Cf. Center for Biological Diversity v. Salazar*, 695 F.3d 893, 914 (9th Cir. 2012) (upholding surrogate in part because there was no “feasible, alternative surrogate measure of take”).

C. The monitoring plan is reasonable.

The take statement must include requirements to “monitor the impacts of incidental take.” 50 C.F.R. § 402.14(i)(3). When a surrogate is used, “the monitoring and reporting requirements ... will be structured to ensure timely reporting of project impacts to [the] surrogate.” 80 Fed. Reg. at 26,841; *see also id.* at 26,834, 26,837. Because the aquatic impact areas serve as the surrogate here, the Service properly required monitoring at the boundaries of the impact areas to insure that they are no greater than anticipated. JA0329-32.

Petitioners argue that additional monitoring is needed because of the “high degree of uncertainty associated with MVP’s modeling.” Opening Brief 48-50. But Petitioners’ description of the modeling is based on cherry-picked quotes taken out of context. To be sure, there is uncertainty in the modeling—because it likely *overstates* the Project’s impacts. *See* JA0038, 100, 104.

The Service directed MVP to use its modeling to identify the aquatic impact areas (the stream areas in which project-related sediment is expected to exceed the

lowest take threshold of 20 mg/L for seven hours). JA0692. MVP objected because the results would overstate the Project's impacts. JA0699. MVP explained that although it could conservatively identify the stream segments that will exhibit a temporary exceedance of 20 mg/L, JA0657, the modeling cannot estimate "the duration that any such concentrations might persist in those areas," JA0654. In other words, the modeling shows where project-related sediment may temporarily exceed 20 mg/L above baseline, but not necessarily for the minimum duration required to cause take. *See id.*⁵

MVP also explained that its approach used "a combination of assumed conservative physical conditions that are not likely to ever occur concurrently." JA0656-57. For example, the modeling assumes that "all sediment loads from the entire Project will be delivered to the stream segments within the watershed at the same time," which "is conservative and overestimates the expected increased sediment concentrations as a result of the Project." JA0657. MVP therefore emphasized that if it "were possible to dynamically model sediment delivery under real-world conditions, we would expect such a model to show that the number and

⁵ Because the impact areas are stream reaches in which Project-related sediment will exceed 20 mg/L regardless of duration, the dispute over whether exposure duration should be measured continuously or cumulatively for take thresholds (c) and (d) is not relevant to the delineation of the impact areas.

extent of streams showing any increase in sediment concentration greater than 20 mg/L *would be substantially lower.*” JA0658 (emphasis added).

Thus, the uncertainty (conservatism) in MVP’s modeling means that the results likely overstate the extent of the aquatic impact area. *Id.*; *see also* JA0104. And the Service did not rely solely on MVP’s modeling. The Service added another layer of conservatism by expanding the impact areas to include the (conservatively-defined) stream crossing and mixing zone areas. *Supra* pp. 28-30.

Because the resulting impact areas are already conservatively defined, the Service was not required to prescribe additional monitoring in other areas where take is not reasonably certain to occur. *See* 50 C.F.R. § 402.14(i)(3) (purpose of monitoring is to “monitor the impacts of incidental take”). Mere speculation that impacts “could” occur elsewhere, Opening Brief 50, which is always true, does not render the monitoring plan arbitrary. And if “new information reveals effects of the action that may affect listed species ... in a manner or to an extent not previously considered,” 50 C.F.R. § 402.16(a)(2), that would independently require reinitiation of consultation, adding another layer of protection beyond that provided by the comprehensive monitoring plan.

D. Tree-clearing in unoccupied bat habitat is not a take.

Petitioners contend that the take statement for the Indiana bat arbitrarily fails to account for tree-clearing in suitable but unoccupied summer habitat. Opening

Brief 55–58. This argument fails because bats do not use the relevant areas, and clearing areas that bats do not use is not a take.

The Project involves clearing 1,252 acres of suitable summer habitat that has been surveyed and is not occupied by Indiana bats. JA0081-83; *see also id.* (noting that all but 18 acres had been cleared at the time that the BiOp was issued).⁶ Because the data indicates that bats do not use the relevant areas, JA0012, 81-82, tree clearing categorically will not take bats: habitat modification causes take only when it “actually kills or injures wildlife.” 50 C.F.R. § 17.3; *see also Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 700 n.13 (1995); *Arizona Cattle Growers*, 273 F.3d at 1244–45, 1247. Bats cannot be killed or injured by tree-clearing in areas that bats do not use.

Clearing unoccupied habitat could impact species *recovery* by reducing the habitat available for expansion, and the Service appropriately addressed that possibility. Because Indiana bats are unlikely to expand into unoccupied habitat in the near future, and because the project will remove only 0.03 percent of the available habitat in the Appalachian Mountain Recovery Unit (AMRU), the Service reasonably concluded that the Project will not appreciably reduce the amount of habitat available for recovery. JA0159-60. The Service also addressed

⁶ Contrary to Petitioners’ assertions (at 56 n.24), the Service reasonably explained why the negative survey results are still valid. JA0082.

the potential impact of climate change, JA0060, 156, which is not anticipated to limit the availability of habitat in the AMRU, JA1053-56.

Petitioners incorrectly assert that the Service's analysis runs afoul of this Court's decision in *Defenders*. There, the Court held that the Service failed to adequately explain an inconsistency between its original and updated BiOps for another project. "Whereas the 2017 BiOp indicated that a 'majority' of the impacts to [Indiana bats] would be caused by the clearing of the suitable unoccupied summer habitat, ... the 2018 BiOp concludes that no adverse impacts will result." 931 F.3d at 362. The potential impacts described in the 2017 BiOp assumed that bats used the relevant areas as a travel corridor and that clearing those areas would require bats to expend additional travel energy. *Id.* The 2018 BiOp did not explain why the predicted impacts were no longer anticipated. *Id.*

There is no similar inconsistency here. JA0082. The Service instead unequivocally determined that "no [Indiana bats] are expected to use these areas *for any purpose.*" JA0012 (emphasis added). The Service also properly analyzed how clearing the relevant areas might impact recovery, JA0159-60, and the BiOps in *Defenders* contained no similar analysis. *Defenders* is therefore inapposite.

The incidental take statement complies with the ESA.

CONCLUSION

For the foregoing reasons, the petition for review should be denied.

Respectfully submitted,

/s/ Kevin W. McArdle

JEAN E. WILLIAMS

Acting Assistant Attorney General

KEVIN W. McARDLE

Attorney

Environment and Natural Resources Division

U.S. Department of Justice

Of Counsel:

S. Amanda Bossie

Attorney

U.S. Department of the Interior

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UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT
Effective 12/01/2016

No. 20-2159 **Caption:** Appalachian Voices v. U.S. Department of the Interior

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