UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

In the Matter of

MOUNTAIN VALLEY PIPELINE, LLC **Docket No. CP16-10-000**
EQUITRANS, LP

APPALACHIAN VOICES, CHESAPEAKE CLIMATE ACTION NETWORK, INDIAN CREEK WATERSHED ASSOCIATION, PRESERVE BENT MOUNTAIN (a chapter of Blue Rudge Environmental Defense League), PRESERVE CRAIG, PRESERVE GILES COUNTY, SAVE MONROE, SIERRA CLUB, WEST VIRGINIA HIGHLANDS CONSERVANCY, WEST VIRGINIA RIVERS COALITION, and WILD VIRGINIA'S MOTION FOR STOP-WORK ORDER DUE TO MOUNTAIN VALLEY PIPLINE, LLC'S LOSS OF NECESSARY FEDERAL AUTHORIZATIONS

Pursuant to Rule 212 of the Federal Regulatory Energy Commission's ("FERC" or "the Commission") Rules of Practice and Procedure, 18 C.F.R. § 385.212, Appalachian Voices, Chesapeake Climate Action Network, Indian Creek Watershed Association, Preserve Bent Mountain (a chapter of Blue Rudge Environmental Defense League), Preserve Craig, Preserve Giles County, Save Monroe, Sierra Club, West Virginia Highlands Conservancy, West Virginia Rivers Coalition, and Wild Virginia[1] move the Commission to issue a stop-work order halting all construction activity authorized by Mountain Valley Pipeline, LLC's ("Mountain Valley") Natural Gas Act Section 7[2] Certificate of Public Convenience and Necessity for the Mountain Valley Pipeline

[1] Movants are petitioners in the federal court challenges at issue in this Motion and intervenors in the Commission proceeding below. Their members would be adversely affected by continued construction of the Pipeline.

[2] 15 U.S.C. § 717f.

("MVP" or "the Pipeline"). The stop-work order is required because of two recent decisions of the United States Court of Appeals for the Fourth Circuit vacating critical authorizations for the MVP from the United States Forest Service ("Forest Service"), the Bureau of Land Management ("BLM"), and the United States Fish and Wildlife Service ("FWS").[3] For the same reasons that the Commission previously issued stop-work orders when earlier versions of these same authorizations were vacated or stayed by the Court, FERC must once again order Mountain Valley to cease all construction activity, with the limited exception of stabilization and restoration work necessary to protect the environment.[4]

[3] *See* 18 C.F.R. § 375.308(x)(7) (authorizing the Director of the Office of Energy Projects or the Director's designee to "[t]ake whatever steps are necessary to ensure the protection of all environmental resources during the construction … of natural gas facilities, including … stop work authority"). Issuance of a stop-work order under this authority does not require the Commission to relitigate any of the issues decided in the certificate proceeding for the MVP. *Cf. Algonquin Gas Transmission, LLC*, 178 FERC ¶ 61,029, ¶16 (Jan. 20, 2022).

[4] Such activity must be strictly limited to that necessary to stabilize or restore existing disturbed areas and must not include any new clearing or trenching. *See, e.g.*, Letter from Terry L. Turpin, Fed. Energy Regul. Comm'n to Matthew Eggerding, Mountain Valley Pipeline, LLC Re: Cessation of Certain Activities (Oct. 15, 2019) (Accession No. 20191015-3030) (prohibiting "new ground-disturbing activities" in the absence of valid Endangered Species Act authorizations and explaining that "Mountain Valley is hereby notified that construction activity along all portions of the Project and in all work areas must cease immediately, with the exception of restoration and stabilization of the right-of-way and work areas, which Commission staff believes will be more protective of the environment, including listed species, than leaving these areas in an unstable condition. Specifically, Mountain Valley may complete work … necessary to stabilize and restore previously-disturbed areas along the entire route, provided that these activities do not impact listed species."). Mountain Valley and FERC's previous claims that allowing full construction to proceed is most protective of the environment do not apply in this context and, furthermore, are not supported by the record. Resuming construction activities—including removing felled trees from the right-of-way, using heavy machinery to level the right-of-way, and disturbing massive amounts of soil by excavating trenches and bore pits—would result in further damage to environmental resources. *See, e.g.*, Final Environmental Impact Statement for the Mountain Valley Pipeline at 4-28 (trenching "may increase the potential for slope failure"); *id*. at 4-52 (construction "could alter the surface and near surface drainage along

On January 25, 2022, the Fourth Circuit vacated the Forest Service's authorization for the MVP to cross the Jefferson National Forest, finding that it violated the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA).[5] The Court found that the Forest Service unreasonably relied on modelling to predict minimal sedimentation impacts from the pipeline to the exclusion of real-world monitoring data showing that MVP construction had led to significantly elevated levels of suspended sediment.[6] It further found that the Forest Service failed to adequately analyze impacts from boring under streams in the National Forest.[7] Finally, and critically, the Court held that the Forest Service failed to demonstrate that the amendments to the Forest Plan for the Jefferson National Forest necessary to accommodate the MVP complied with the substantive requirements of the Forest Service's Planning Rule.[8] The Court found that the Pipeline's sedimentation impacts may be incompatible with the Planning Rule's directive that Forest Plan amendments "maintain" and "restore" the

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the pipeline trench, which could increase pre-existing landslide hazard potential"); *id*. (cut slopes created by pipeline trenches and fill slopes composed of excavated material "could be a source of debris flow in the project area triggered by intense and/or prolonged rainfall events"); *id*. at 4-81 ("equipment traffic can compact soil[,] reducing porosity and increasing runoff potential"); *id*. ("backfilling, contouring, and the movement of construction equipment along the right-of-way" affects soil resources); *id*. at 4-85 ("impacts on compaction prone soils would be minimized by limiting construction traffic along the right-of-way"); *id*. at 4-160–61 (discharge of trench water "could increase the potential for sediment-laden water to enter wetlands").

[5] *Wild Virginia v. United States Forest Service*, No. 21-1039, ECF# 89 (4th Cir. Jan. 25, 2022), attached as Exhibit 1.

[6] *Id.* at 20–22.

[7] *Id.* at 22-24.

[8] *Id.* at 27–29.

Forest's soil and riparian resources.[9] The Court thus remanded to the Forest Service to determine whether these standards could be met taking into account full consideration of the MVP's erosion and sedimentation impacts.[10]

On February 3, 2022, the Fourth Circuit vacated the FWS's biological opinion ("BiOp") and Incidental Take Statement for the MVP issued pursuant to the Endangered Species Act ("ESA").[11] The Court held that the FWS "failed to adequately evaluate the 'environmental baseline' and 'cumulative effects' for … the Roanoke logperch and the candy darter" and "that the agency neglected to fully consider the impacts of climate change."[12] The Court also concluded that FWS "failed to incorporate its environmental-baseline and cumulative-effects findings into its jeopardy determinations for the logperch and darter."[13] Although the Court vacated the BiOp based on the errors in the FWS's analysis of impacts to the Roanoke logperch and candy darter, it made clear that there may be additional errors in regard to other species that the FWS should reevaluate on remand.[14]

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[9] *Id.* at 28.

[10] *Id.* at 29.

[11] *Appalachian Voices v. U.S. Dep't of the Interior*, ___ F.4th ___, 2022 WL 320320, at *1 (4th Cir. Feb. 3, 2022), attached as Exhibit 2.

[12] *Id.* at *7.

[13] *Id.* at *13.

[14] *See, e.g., id.* at *3 n.4 (finding it unnecessary to reach question of legal error regarding analysis of impacts to Indiana bat, but identifying several areas where FWS should further support or reevaluate its conclusions on remand).

In concluding that the BiOp must be vacated and remanded, the Court cautioned the FWS

> that when the baseline conditions or cumulative effects *are* already jeopardize[ing] a species, an agency may not take actions that *deepens* the jeopardy by causing additional harm. … Put differently, if a species is already speeding toward the extinction cliff, an agency may not press on the gas. We urge the Fish and Wildlife Service to consider this directive carefully while reassessing impacts to the two endangered fish at issue, especially the apparently not-long-for-this-world candy darter.[15]

The Court concluded its opinion with a recognition "that this decision will further delay the completion of an already mostly finished Pipeline, but the Endangered Species Act's directive to federal agencies could not be clearer: halt and reverse the trend toward species extinction, whatever the cost."[16]

The errors identified in those opinions involve substantive requirements going to the heart of the necessary authorizations. On remand, the agencies are tasked not with simply "dotting the I's and crossing the T's,"[17] but with fundamentally reevaluating whether the Pipeline can be authorized in compliance with substantive statutory and regulatory directives. Even if the Pipeline can proceed, route alterations may be necessary to avoid sensitive National Forest soil and riparian resources (including potentially

[15] *Id.* at *14 (cleaned up; emphasis original).

[16] *Id.* at *17 (cleaned up).

[17] *See Mountain Valley Pipeline, LLC,* 174 FERC ¶ 61,192, Glick, Chairman, and Clements, Comm'r, dissenting, ¶5 ("Assuming that the relevant agency will essentially reissue the same document on remand, this time dotting the I's and crossing the T's, is wholly inconsistent with the purpose of judicial review or the idea that the agency should seriously consider the flaws that precipitated the vacatur.").

avoiding the Forest entirely) or to avoid impacts to imperiled species such as the candy darter. Under these circumstances, a stop-work order is necessary to prevent potentially unnecessary impacts to landowners and the environment.

As the Commission explained the last time the Fourth Circuit vacated Mountain Valley's authorization to cross the Jefferson National Forest:

> Commission staff cannot predict when these agencies may act or whether these agencies will ultimately approve the same route. Should the agencies authorize alternative routes, [Mountain Valley] may need to revise substantial portions of the Project route across non-federal lands, possibly requiring further authorizations and environmental review. Accordingly, allowing continued construction poses the risk of expending substantial resources and substantially disturbing the environment by constructing facilities that ultimately might have to be relocated or abandoned.[18]

Given the lack of the critical federal authorizations from the Forest Service and FWS, the Commission's duty to protect the public interest requires that it promptly issue a stop-work order.[19]

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[18] Letter from Terry L. Turpin, Fed. Energy Regul. Comm'n to Matthew Eggerding, Mountain Valley Pipeline, LLC Re: Notification of Stop Work Order (Aug. 3, 2018) (Accession No. 20180803-3076). Contrary to the Commission's assertion in that letter that "[t]here is no reason to believe that [relevant agencies] will not be able to comply with the Court's instructions and to ultimately issue new right-of-way grants that satisfy the Court's requirements," here, as explained above, the Court's opinions call into question whether further Pipeline construction activities, as currently proposed, can be authorized in compliance with the substantive requirements of the National Forest Management Act and the Endangered Species Act.

[19] *Mountain Valley Pipeline, LLC*, 173 FERC ¶ 61,252, Glick, Comm'r, dissenting, ¶6 ("It is the Commission's job to protect the public interest throughout construction of a new pipeline and we are not taking that responsibility seriously if we brush aside concerns about the invalidated permits and treat the absence of conclusive evidence that the pipeline route will change as a basis to assume that a project will go forward as planned, even while key permits remain outstanding. Once again, that approach is exactly what earns this Commission its unfortunate reputation as a rubber stamp."); *id.*, Glick, Comm'r, dissenting, ¶4 ("If the public interest requires a pipeline to have its ducks in a row when it first begins construction, I see no reason why it is not equally important to require the pipeline to meet the same condition every time it recommences construction, especially after having a necessary permit invalidated by court order."). *See also*

Moreover, allowing construction to proceed in the absence of a valid BiOp and Incidental Take Statement would constitute a clear violation of the ESA. Section 7(a)(2) of the ESA requires that "[e]ach Federal agency … insure that any action authorized … by such agency … is not likely to jeopardize the continued existence of any endangered species …."[20] For purposes of the ESA, "action" includes "all activities … of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies" specifically including "the granting of … easements, rights-of-way, [and] permits."[21] If FWS finds that a project is likely to jeopardize a species, the affected agency "must either terminate the action, implement [a] proposed alternative, or seek an exemption from the Cabinet-level Endangered Species Committee."[22] The Commission's authorization of construction of the MVP is conditioned on a determination by FWS that the project will not jeopardize the continued existence of endangered or threatened species.[23] The Fourth Circuit has now found arbitrary and capricious FWS's conclusion that the MVP would not jeopardize endangered species and, in particular, cautioned FWS to look carefully at whether the Pipeline would cause jeopardy to the candy darter.[24] Without assurance that the MVP will

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Fed. Power Comm'n v. Transcontinental Gas Pipe Line Corp., 365 U.S. 1, 7 (1961) (explaining that FERC is the "guardian of the public interest").

[20] 16 U.S.C. § 1536(a)(2).

[21] 50 C.F.R. § 402.02.

[22] *Nat'l Ass'n of Home Builders v. Defs. of Wildlife*, 551 U.S. 644, 652 (2007).

[23] *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043, at ¶213 & App. C ¶28.

[24] *Appalachian* Voices, 2022 WL 320320, at *14.

not jeopardize those species, ESA Section 7(a)(2) outright bars the project from moving forward.

Section 9 of the ESA similarly prohibits the "take" of endangered and threatened species.[25] To "take" a species "means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."[26] Although FWS may allow the incidental take of a limited number of animals in connection with a no-jeopardy biological opinion for that species and an incidental take statement, those authorizations for the MVP have now been vacated. Therefore, the Commission can no longer rely on FWS's biological opinion and incidental take statement to shield it from liability under Section 9(a) of the ESA for an incidental take. Permitting construction under these circumstances would place both Mountain Valley and the Commission at risk of liability for violating Section 9(a).[27]

Liability under the ESA cannot be avoided by limiting construction activity to areas outside of identified habitat for the two species—the Roanoke logperch and the candy darter—discussed in the Fourth Circuit's opinion vacating the BiOp. Although the opinion focused on those two species, the Court vacated the entire BiOp and Incidental Take Statement and made clear that there were other potential errors in the agency's

[25] 16 U.S.C. § 1538(a); 50 C.F.R. § 17.31.

[26] 16 U.S.C. § 1532(19).

[27] *See Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997) (agency can be held liable for authorizing action that results in unauthorized take of species).

analysis regarding other species that should be reevaluated on remand.[28] Furthermore, allowing Mountain Valley to proceed with construction in areas outside known habitat for those species would violate the ESA's prohibition on agencies making "any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures" after initiation of Section 7 consultation.[29] If the Commission permits Mountain Valley to encroach on the edge of habitat for endangered species in an effort to secure its preferred pipeline route, it could foreclose alternative routes or other measures FWS determines are necessary to protect species affected by the MVP.

Allowing construction to proceed would not only contravene FERC's Natural Gas Act public interest obligations and violate the express terms of the ESA, but would also create further "bureaucratic momentum" that places undue pressure on the outstanding federal agency permitting processes. If construction were to begin prior to reissuance of the requisite permits and approvals,[30] it would "raise the risk of the 'bureaucratic momentum'… and could skew the [Forest Service and FWS's] future analysis and decision-making regarding the project …" *Indigenous Envtl. Network v. United States*

[28] *Appalachian Voices*, 2022 WL 320320, at *3 n.4.

[29] 16 U.S.C. § 1536(d).

[30] Although this Motion focusses on the recently vacated authorizations from the Forest Service and FWS, the same principles apply to the outstanding authorizations from the United States Army Corps of Engineers for the MVP's waterbody crossings. *See Sierra Club v. United States Army Corps of Engineers*, 981 F.3d 251, 255 (4th Cir. 2020).

Dep't of State, 369 F. Supp. 3d 1045, 1050–51 (D. Mont. 2018) (citing *Colorado Wild Inc. v. U.S. Forest Serv.*, 523 F.Supp.2d 1213, 1221 (D. Colo. 2007)). Allowing Mountain Valley to construct the pipeline so that the "completed segments would stand like gun barrels pointing into the heartland" of the national forest lands and endangered species habitat would inevitably, and improperly, influence the Forest Service and FWS's decisions. *See Maryland Conservation Council v. Gilchrist*, 808 F.2d 1039, 1042 (4th Cir. 1986) (internal citation and quotation omitted). If that were to occur, "the options open to the [Forest Service and FWS] would diminish, and at some point [its] consideration would become a meaningless formality." *Arlington Coal. on Transp. v. Volpe*, 458 F.2d 1323, 1333 (4th Cir. 1972); *see also Nat'l Audubon Soc'y v. Dept. of Navy*, 422 F.3d 174, 201 (4th Cir. 2005) (discussing CEQ regulations at 40 C.F.R. § 1506.1(a) that prohibit actions that would limit the choice of reasonable alternatives pending completion of the NEPA process); *N. Cheyenne Tribe v. Hodel*, 851 F.2d 1152, 1157 (9th Cir. 1988) ("Bureaucratic rationalization and bureaucratic momentum are real dangers[.]").

* * *

For the reasons discussed above, we hereby move the Commission, either through its own action or through its designee in the Office of Energy Projects, to issue a stop-work order halting all construction activities on the MVP.

Respectfully submitted,
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Dated: February 7, 2022.

CERTIFICATE OF SERVICE

I hereby certify that on February 7, 2022, I caused the foregoing document to be served by electronic mail upon each person designated on the official service list compiled by the Secretary in this proceeding.

/s/Benjamin A. Luckett
Benjamin A. Luckett
APPALACHIAN MOUNTAIN ADVOCATES

Exhibit 1

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 21-1039

WILD VIRGINIA; SIERRA CLUB; APPALACHIAN VOICES; WILDERNESS SOCIETY; PRESERVE CRAIG; SAVE MONROE; INDIAN CREEK WATERSHED ASSOCIATION,

Petitioners,

v.

UNITED STATES FOREST SERVICE, an agency of the U.S. Department of Agriculture; JIM HUBBARD, in his official capacity as Under Secretary for Natural Resources and Environment, United States Department of Agriculture; KEN ARNEY, in his official capacity as Regional Forester of the Southern Region,

Respondents,

MOUNTAIN VALLEY PIPELINE, LLC,

Intervenor.

CHEROKEE FOREST VOICES; GEORGIA FORESTWATCH; MOUNTAINTRUE; THE CLINCH COALITION; VIRGINIA WILDERNESS COMMITTEE,

Amici Supporting Petitioner.

AMERICAN FOREST RESOURCE COUNCIL; BLACK HILLS FOREST RESOURCE ASSOCIATION; COLORADO TIMBER INDUSTRY ASSOCIATION; FEDERAL FOREST RESOURCE COALITION; INTERMOUNTAIN FOREST ASSOCIATION; MONTANA WOOD PRODUCTS ASSOCIATION,

Amici Supporting Respondent.

On Petition for Review of an Order of the Department of Agriculture. (AGRI-1).

No. 21-1082

WILD VIRGINIA; SIERRA CLUB; APPALACHIAN VOICES; THE WILDERNESS SOCIETY; PRESERVE CRAIG; SAVE MONROE; INDIAN CREEK WATERSHED ASSOCIATION,

Petitioners,

v.

UNITED STATES BUREAU OF LAND MANAGEMENT, an agency of the U.S. Department of Interior; DEB HAALAND, in her official capacity as Secretary of the Interior; MITCHELL LEVERETTE, in his official capacity as State Director, Bureau of Land Management, Eastern States,

Respondents,

MOUNTAIN VALLEY PIPELINE, LLC,

Intervenor.

CHEROKEE FOREST VOICES; GEORGIA FORESTWATCH; MOUNTAINTRUE; THE CLINCH COALITION; VIRGINIA WILDERNESS COMMITTEE,

Amici Supporting Petitioner,

AMERICAN FOREST RESOURCE COUNCIL; BLACK HILLS FOREST RESOURCE ASSOCIATION; COLORADO TIMBER INDUSTRY ASSOCIATION; FEDERAL FOREST RESOURCE COALITION; INTERMOUNTAIN FOREST ASSOCIATION; MONTANA WOOD PRODUCTS ASSOCIATION,

Amici Supporting Respondent.

On Petition for Review of an Order of the Department of Interior. (DOI-1).

Argued: October 29, 2021 Decided: January 25, 2022

Before GREGORY, Chief Judge, and WYNN and THACKER, Circuit Judges.

Petitions granted in part and denied in part, vacated and remanded by published opinion. Judge Thacker wrote the opinion, in which Chief Judge Gregory and Judge Wynn joined.

ARGUED: Nathan Matthews, SIERRA CLUB, Oakland, California, for Petitioners. Brian C. Toth, UNITED STATES DEPARTMENT OF JUSTICE, Washington, D.C., for Respondents. Donald B. Verrilli, Jr., MUNGER, TOLLES & OLSON LLP, Washington, D.C., for Intervenor. **ON BRIEF:** Ankit Jain, SIERRA CLUB, Washington, D.C.; Derek O. Teaney, Benjamin Luckett, APPALACHIAN MOUNTAIN ADVOCATES, INC., Lewisburg, West Virginia, for Petitioners Wild Virginia, Sierra Club, Appalachian Voices, The Wilderness Society, Preserve Craig, Save Monroe, and Indian Creek Watershed Association. William J. Cook, Special Counsel, CULTURAL HERITAGE PARTNERS, PLLC, Washington, D.C., for Petitioner Monacan Indian Nation. Jean E. Williams, Acting Assistant Attorney General, Todd Kim, Acting Assistant Attorney General, Justin D. Hemminger, Environment and Natural Resources Division, UNITED STATES DEPARTMENT OF JUSTICE, Washington, D.C.; Michael D. Smith, Office of the Solicitor, UNITED STATES DEPARTMENT OF THE INTERIOR, Washington, D.C.; Sarah Kathmann, Office of the General Counsel, UNITED STATES DEPARTMENT OF AGRICULTURE, Washington, D.C., for Respondents. George P. Sibley, III, J. Pierce Lamberson, Brian R. Levey, HUNTON ANDREWS KURTH LLP, Richmond, Virginia; Sandra A. Snodgrass, HOLLAND & HART LLP, Denver, Colorado; Thomas C. Jensen, Stacey M. Bosshardt, PERKINS COIE LLP, Washington, D.C., for Intervenor. J. Patrick Hunter, Asheville, North Carolina, Spencer Gall, Kristin Davis, Gregory Buppert, SOUTHERN ENVIRONMENTAL LAW CENTER, Charlottesville, Virginia, for Amici Cherokee Forest Voices, Georgia ForestWatch, MountainTrue, The Clinch Coalition, and Virginia Wilderness Committee. Lawson E. Fite, AMERICAN FOREST RESOURCE COUNCIL, Portland, Oregon, for Amici American Forest Resource Council, Black Hills Forest Resource Association, Colorado Timber Industry Association, Federal Forest Resource Coalition, Intermountain Forest Association, and Montana Wood Products Association.

THACKER, Circuit Judge:

In these two consolidated cases, several environmental advocacy organizations -- Wild Virginia, the Sierra Club, Appalachian Voices, the Wilderness Society, Preserve Craig, Save Monroe, and the Indian Creek Watershed Association (collectively, "Petitioners") -- seek review of the renewed decisions of the United States Forest Service (the "Forest Service") and the Bureau of Land Management (the "BLM") to allow the Mountain Valley Pipeline (the "Pipeline"), an interstate natural gas pipeline system, to cross three and a half miles of the Jefferson National Forest in Virginia and West Virginia. This is the second time Petitioners have challenged the agencies' approval of the Pipeline. We previously vacated the agencies' records of decision ("RODs") because the Forest Service and the BLM failed to comply with the National Environmental Policy Act ("NEPA"), the National Forest Management Act (the "NFMA"), and the Mineral Leasing Act (the "MLA"). We directed the agencies to re-evaluate certain aspects of the Pipeline's potential environmental impact. *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582 (4th Cir. 2018).

Petitioners contend that the agencies' renewed RODs after remand also violate NEPA, the NFMA, and the MLA. As more fully explained below, we agree with Petitioners in part, so we grant their petitions as to three errors, deny the petitions with regard to Petitioners' remaining arguments, vacate the RODs of the Forest Service and the BLM, and remand for further proceedings consistent with this opinion.

I.

A.

Governing Statutory and Regulatory Framework

1.

NEPA

NEPA is a federal environmental protection statute that "declares a national policy of protecting and promoting environmental quality" and requires federal agencies to scrutinize the potential environmental impacts of their projects. *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 443 (4th Cir. 1996); *see* 42 U.S.C. § 4331. Notably, NEPA does not require the agencies to reach particular substantive results. *Hughes River*, 81 F.3d at 443. Rather, NEPA imposes procedural requirements that obligate federal agencies "to undertake analyses of the environmental impact of their proposals and actions." *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756–57 (2004) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349–50 (1989)). In order to accomplish this objective, NEPA mandates that federal agencies prepare an environmental impact statement ("EIS") as part of "every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). The primary purpose of an EIS is "to ensure agencies consider the environmental impacts of their actions in decision making." 40 C.F.R. § 1502.1. Accordingly, the EIS must analyze the proposed project's "significant environmental impacts" and discuss "reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment." *Id.* Of

note, "if significant new information or environmental changes come to light after the agency prepares an EIS," the agency must prepare a supplemental EIS to address them. *Save Our Sound OBX, Inc. v. N.C. Dep't of Transp.*, 914 F.3d 213, 218 (4th Cir. 2019) (citing 40 C.F.R. § 1502.9).

"Multiple agencies may cooperate to issue an EIS, but a 'lead agency' is usually designated." *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582, 588 (4th Cir. 2018) (citing 7 C.F.R. § 3407.11(a)). The Federal Energy Regulatory Commission ("FERC") is the lead NEPA agency when the proposed project involves an interstate gas pipeline. *Id.* (citing 15 U.S.C. § 717n(b)(1); *EarthReports, Inc. v. FERC*, 828 F.3d 949, 953 (D.C. Cir. 2016)).

"[A]fter the agency makes a decision regarding the action [based on its consideration of the proposal's environmental impacts laid out in the EIS], it must publish a [ROD], at which point it may then finalize its action." *Webster v. U.S. Dep't of Agric.*, 685 F.3d 411, 418 (4th Cir. 2012) (citing *Nat'l Audubon Soc'y v. Dep't of the Navy*, 422 F.3d 174, 185 (4th Cir. 2005)); *see* 40 C.F.R. § 1505.2.

2.

The NFMA

The NFMA provides substantive and procedural guidance to the Forest Service for the management of National Forest System lands. Pursuant to the NFMA, the Forest Service "develops land and resource management plans" -- known as forest plans -- "and uses [them] to 'guide all natural resource management activities'" within the national forests. *Ohio Forestry Ass'n v. Sierra Club*, 523 U.S. 726, 729 (1998). To that end, "the

Forest Service must ensure that all resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands . . . are consistent with the Forest Plans." *Sierra Club*, 897 F.3d at 600 (alteration and internal quotation marks omitted); *see* 16 U.S.C. § 1604(i). When a proposed project is not consistent with the applicable forest plan, the Forest Service must decide whether to modify the project to ensure consistency with the forest plan, reject the proposal or terminate the project, or amend the forest plan to accommodate the project. 36 C.F.R. § 219.15(c).

In 2012, pursuant to the NFMA, the Forest Service promulgated a rule governing amendments to forest plans (the "2012 Planning Rule"). *See* National Forest System Land Management Planning, 77 Fed. Reg. 21,162 (Apr. 9, 2012) (to be codified at 36 C.F.R. pt. 219). The 2012 Planning Rule imposes "substantive requirements" for sustainability, diversity of plant and animal communities, multiple land uses, and timbering that are intended to "maintain or restore" ecological integrity and ecosystem diversity in national forests while preserving those forests for multiple uses. *Id.*; *see* 36 C.F.R. §§ 219.8–219.11. The 2012 Planning Rule further provides that a forest plan "may be amended at any time," 36 C.F.R. § 219.13(a), but it requires that any such amendment be "consistent with Forest Service NEPA procedures," *id.* § 219.13(b)(3).

Due to confusion about how to apply the 2012 Planning Rule's substantive requirements to forest plans developed pursuant to a 1982 forest planning rule with

different requirements,[1] the Forest Service revised its 2012 Planning Rule in 2016 (the "2016 Revised Rule"). *See* National Forest System Land Management Planning, 81 Fed. Reg. 90,723 (Dec. 16, 2016) (to be codified at 36 C.F.R. pt. 219). The 2016 Revised Rule requires the Forest Service, when amending a forest plan, to determine which "substantive requirements" of the 2012 Planning Rule are "directly related" to the forest plan amendment and "apply" those requirements "within the scope and scale of the amendment." 36 C.F.R. § 219.13(b)(5).

3.

The MLA

The MLA "authorizes the Secretary of the Interior to lease public-domain lands to private parties for the production of oil and gas." *BP Am. Prod. Co. v. Burton*, 549 U.S. 84, 87 (2006); *see* 30 U.S.C. § 185(a). "The MLA regulates the location of interstate pipelines across most federal lands," which "includes approving rights of way and easements for the siting of those pipelines." *Sierra Club*, 897 F.3d at 604 (emphasis deleted). "In order to minimize adverse environmental impacts and the proliferation of

[1] Forest plans developed pursuant to the 1982 forest planning rule are guided by fourteen overarching "principles," and in addition to procedural standards, the rule includes substantive standards for timbering, wilderness management, and resource preservation. 36 C.F.R. §§ 219.1–219.29 (1982), https://www.fs.fed.us/emc/nfma/includes/nfmareg.html. When proposing the 2012 Planning Rule, the Forest Service acknowledged that "most 1982 rule [forest] plans will not be consistent with all of the [substantive] requirements of the 2012 [P]lanning [R]ule." National Forest System Land Management Planning, 81 Fed. Reg. 70,373, 70,376 (proposed Oct. 12, 2016) (to be codified at 36 C.F.R. pt. 219).

separate rights-of-way across Federal lands," the MLA requires that rights of way in common be utilized "to the extent practical." 30 U.S.C. § 185(p).

When multiple federal agencies administer the federal lands traversed by an interstate pipeline, the MLA authorizes the Secretary of the Interior, "after consultation with the agencies involved, to grant or renew rights-of-way or permits through the Federal lands involved." 30 U.S.C. § 185(c)(2). The Secretary of the Interior has delegated her authority to the BLM. 36 C.F.R. § 251.54(b)(3) ("Proposals for oil and gas pipeline rights-of-way crossing Federal lands under the jurisdiction of two or more Federal agencies must be filed with the [BLM] . . . ."); 43 C.F.R. § 2884.26 ("If the application involves lands managed by two or more Federal agencies, BLM will not issue or renew [a right of way or temporary use permit] until the heads of the agencies administering the lands involved have concurred.").

B.

The Pipeline Project

The Pipeline, a project of Mountain Valley Pipeline, LLC ("MVP"), is planned to extend for more than 300 miles from Wetzel County, West Virginia, to Pittsylvania County, Virginia, upon its completion. On October 13, 2017, FERC issued a Certificate of Public Convenience and Necessity[2] (the "FERC Certificate") authorizing MVP to

[2] Pursuant to the Natural Gas Act, a natural gas company is prohibited from "engag[ing] in the transportation or sale of natural gas . . . or undertak[ing] the construction or extension of any facilities therefor, or acquir[ing] or operat[ing] any such facilities or extensions thereof, unless there is in force with respect to such natural-gas (Continued)

construct, operate, and maintain the Pipeline, new compressor stations, and new regulation stations and interconnections. Per NEPA, FERC also prepared an EIS for the Pipeline. The EIS purportedly considered the Pipeline's projected impact on geology and soils; groundwater, surface waters, and wetlands; vegetation and wildlife; land use and visual resources; socioeconomics and transportation; cultural resources; air quality and noise; and reliability and safety. It also purportedly analyzed the Pipeline's cumulative impacts and considered alternatives. Ultimately, FERC concluded that "construction and operation of the [Pipeline] would result in limited adverse environmental impacts, with the exception of impacts on forest" and that "approval of the [Pipeline] would result in some adverse environmental impacts, but the majority of these impacts would be reduced to less-than-significant levels." J.A. 2015.[3]

The Pipeline's projected route crosses a 3.5-mile swath of the Jefferson National Forest in Giles and Montgomery Counties in Virginia and Monroe County in West Virginia. This section of the projected route includes four stream crossings. In order to construct the Pipeline on these lands, MVP must obtain rights of way and temporary use permits from the BLM, in consultation with the Forest Service. The Pipeline must also be consistent with the forest plan developed by the Forest Service for the Jefferson

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company a certificate of public convenience and necessity issued by [FERC] authorizing such acts or operations." 15 U.S.C. § 717f(c)(1)(A).

[3] Citations to the "J.A." refer to the Joint Appendix filed by the parties in this appeal.

National Forest (the "Jefferson Forest Plan"). The Jefferson Forest Plan "[e]stablishes the management direction and associated long-range goals and objectives of the Jefferson National Forest" and "[s]pecifies [certain] standards, which set the sideboards for achieving the goals, objectives and desired conditions, as well as provide meaningful direction when implementing projects" within the Jefferson National Forest. J.A. 1937. The Pipeline, as proposed, and as detailed more specifically below, would be inconsistent with 11 standards from five categories -- utility corridors, soil and riparian resources, old growth management areas, Appalachian National Scenic Trail areas, and scenery integrity objectives -- in the Jefferson Forest Plan.

C.

Prior Proceedings

In December 2017, the Forest Service, using FERC's EIS, initially decided to amend the Jefferson Forest Plan to accommodate the Pipeline but limit the amendments' applicability only to the Pipeline project. Consequently, the Forest Service's ROD modified 11 standards in the Jefferson Forest Plan that were inconsistent with the Pipeline project and waived 3 of those 11 standards. For example, the ROD relaxed one of the standards for soil and riparian resources as follows (with the modification in bold):

> Standard FW-5: On all soils dedicated to growing vegetation, the organic layers, topsoil and root mat will be left in place over at least 85% of the activity area and revegetation is accomplished within 5 years**, with the exception of the operational right-of-way and the construction zone for the Mountain Valley Pipeline, for which the applicable mitigation measures [MVP proposed] must be implemented.**

J.A. 2231 (emphasis in original). However, we vacated the Forest Service's ROD because the Forest Service did not conduct an "independent review" of the EIS's sedimentation analysis.[4] *Sierra Club*, 897 F.3d at 594. In addition, we rejected the Forest Service's conclusion that the soil and riparian resources requirements set forth in the 2012 Planning Rule were not "directly related" to the amendments to the Jefferson Forest Plan to accommodate the Pipeline, principally because the Forest Service itself acknowledged that those requirements could not be met absent the amendments. *Id.* at 603.

The BLM also initially adopted FERC's EIS and, "with the concurrence of the Forest Service and the [United States Army] Corps of Engineers . . . issued a [ROD] granting a 30 year, 50-foot operational right of way and associated temporary use permits" for the Pipeline's projected route through the Jefferson National Forest. *Sierra Club*, 897 F.3d at 589. But, we held that the BLM failed to determine whether "the

[4] "Sedimentation is defined as the 'process of deposition of a solid material,' or sediment, 'from a state of suspension or solution in a fluid' . . . ." *Sierra Club*, 897 F.3d at 590 n.5. Specifically, in rejecting the EIS's sedimentation analysis, we took issue with the Forest Service's acceptance of the EIS's estimation that sedimentation control measures would result in 79% containment of sediment -- a figure derived from a hydrological analysis MVP provided to FERC -- despite the Forest Service's estimation in comments on a draft of the hydrological analysis that 48% containment was a more appropriate figure. *See id.* at 595. We also questioned the Forest Service's acceptance of the EIS's conclusion that the Pipeline would increase sedimentation to levels in excess of 10% above the baseline, despite its earlier concerns -- again in comments on a draft of the hydrological analysis -- that such levels could negatively affect sensitive aquatic species. *See id.* at 595–96.

utilization of an existing right of way would be impractical," in violation of the MLA. *Id.* at 605 (emphasis deleted).

Therefore, we vacated the RODs of the Forest Service and the BLM and remanded this matter to the agencies. We directed the Forest Service to more thoroughly analyze the Pipeline's sedimentation impacts and apply the 2012 Planning Rule's soil and riparian resources requirements to the proposed Jefferson Forest Plan amendments for the Pipeline. *Sierra Club*, 897 F.3d at 596, 603. And we instructed the BLM to make a specific finding about the practicality of utilizing an existing right of way for the Pipeline. *Id.* at 605.

D.

Proceedings Since Remand

1.

The Forest Service

On remand, the Forest Service and the BLM prepared a supplemental EIS which sought to address the Pipeline's sedimentation impacts utilizing two hydrological analyses provided by MVP. But neither of these hydrological analyses, nor the supplemental EIS, considered water quality monitoring data from the United States Geological Survey ("USGS") monitoring stations fifteen miles outside the Jefferson National Forest, where construction of the Pipeline has occurred near the Roanoke River.

The USGS data showed water turbidity[5] values that were 20% higher downstream from the Pipeline's construction than upstream -- a significant difference from the 2.1% increase in sedimentation the hydrologic analyses predicted for the Roanoke River.

The Forest Service also elaborated on its analysis of the 2012 Planning Rule's application to the Pipeline. In particular, it determined that 10 of the 2012 Planning Rule's substantive requirements were directly related to the amendments to the Jefferson Forest Plan for the Pipeline:

> § 219.8(a)(2)(ii) – Soils and soil productivity; § 219.8(a)(2)(iii) – Water quality; § 219.8(a)(2)(iv) – Water resources in the plan area; § 219.8(a)(3)(i) – Ecological integrity of riparian areas; § 219.8(b)(3) – Multiple uses that contribute to local, regional, and national economies; § 219.9(a)(2) – Ecosystem diversity of terrestrial and aquatic ecosystems; § 219.10(a)(3) – Appropriate placement and sustainable management of infrastructure, such as recreational facilities and transportation and utility corridors; § 219.10(b)(1)(i) – Sustainable recreation, including recreation setting, opportunities, access, and scenic character; § 219.10(b)(1)(iv) – Other designated areas or recommended designated areas; and § 219.11(c) – Timber harvest for purposes other than timber production.

J.A. 582. The supplemental EIS provides that the amendments to accommodate the Pipeline are "in full compliance with the [2012] Planning Rule because all applicable substantive requirements are applied to provide protection to resources without

[5] "Turbidity refers to cloudiness caused by very small particles of silt, clay, and other substances suspended in water." Water Supply System: Health Concerns, *Encyclopaedia Britannica – Technology*, https://www.britannica.com/technology/water-supply-system/Health-concerns#ref1084761.

substantial lessening of protections for those resources across the [Jefferson National Forest]." *Id.*

2.

The BLM

As part of the supplemental EIS it prepared in conjunction with the Forest Service, the BLM evaluated whether existing rights of way on federal lands could accommodate the Pipeline without issuing a new right of way. In doing so, the BLM considered alternative routes collocating the Pipeline with the proposed route of the since-cancelled Atlantic Coast Pipeline,[6] with existing public roads, and with electric transmission lines. The BLM also considered several route variations. The BLM made specific findings about whether each alternative route or route variation was practical and concluded that "none . . . would [both] result in greater collocation on federal lands and be practical." J.A. 819. It determined that those alternative routes that would increase collocation

[6] On July 5, 2020, the energy companies behind the Atlantic Coast Pipeline announced that they would no longer move forward "due to ongoing delays and increasing cost uncertainty which threaten the economic viability of the project." Press Release, Dominion Energy, Dominion Energy and Duke Energy Cancel the Atlantic Coast Pipeline (July 5, 2020), https://news.dominionenergy.com/2020-07-05-Dominion-Energy-and-Duke-Energy-Cancel-the-Atlantic-Coast-Pipeline. The companies' decision came after we vacated several decisions of state and federal agencies approving the project. *See, e.g.*, *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68 (4th Cir. 2020) (vacating Virginia environmental regulator's decision issuing permit to construct Atlantic Coast Pipeline compressor station); *Defs. of Wildlife v. U.S. Dep't of the Interior*, 931 F.3d 339 (4th Cir. 2019) (vacating Fish and Wildlife Service's biological opinion for Atlantic Coast Pipeline); *Sierra Club v. U.S. Dep't of the Interior*, 899 F.3d 260 (4th Cir. 2018) (vacating Fish and Wildlife Service's and National Park Service's approval of Atlantic Coast Pipeline).

"would be impractical due to a combination of constructability and safety challenges, increased environmental impacts, increased length and footprint, increased cost, and inability to serve the purposes of the [Pipeline] or the specific purpose of the route alternative in question." *Id.* at 819–20 (footnote omitted).

3.

FERC

In the meantime, FERC partially authorized MVP to use the "conventional bore method" to cross under the bodies of water along the Pipeline's projected route, including the four streams in the Jefferson National Forest, pending FERC's evaluation of the potential environmental impact of that method.

4.

Renewed RODs

Ultimately, on January 11, 2021, the Forest Service, via the United States Department of Agriculture's Under Secretary for Natural Resources and Environment, issued a second ROD approving the Pipeline. The renewed ROD adopted the Forest Service's environmental analysis in the supplemental EIS and again amended the Jefferson Forest Plan by modifying 11 plan standards to accommodate the Pipeline and limited the amendments only to the Pipeline. Petitioners sought review of the ROD in this court the same day it was issued.

Three days later, on January 14, 2021, the Secretary of the Interior issued a ROD granting the Pipeline a right of way in the Jefferson National Forest. The BLM's renewed ROD also adopted the supplemental EIS and again authorized a 30-year right of

way and associated temporary use permits for the Pipeline's proposed route through the Jefferson National Forest. Petitioners also filed a petition for review of that decision in this court on January 20, 2021. We consolidated the cases on appeal.

II.

"We may hold unlawful and set aside a federal agency action for certain specified reasons, including whenever the challenged act is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law." *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582, 589–90 (4th Cir. 2018) (alteration and internal quotation marks omitted); *see* 5 U.S.C. § 706(2).

> An agency's decision is arbitrary and capricious if the agency relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id. at 590 (quoting *Defs. of Wildlife v. N.C. Dep't of Transp.*, 762 F.3d 374, 396 (4th Cir. 2014)). "[O]ur oversight [of agency action is] 'highly deferential, with a presumption in favor of finding the agency action valid,' yet the arbitrary-and-capricious standard does not 'reduce judicial review to a rubber stamp of agency action.'" *Friends of Back Bay v. U.S. Army Corps of Eng'rs*, 681 F.3d 581, 587 (4th Cir. 2012) (quoting *Ohio Valley Env't Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 192 (4th Cir. 2009)).

III.

Petitioners once again argue that the Forest Service and the BLM violated NEPA, the NFMA, and the MLA in permitting MVP to construct the Pipeline in the Jefferson National Forest. We address each of Petitioners' arguments in turn.

A.

Predecisional Review

Petitioners first argue that the Forest Service violated its own regulations by failing to undertake the administrative "predecisional review" process before authorizing the Pipeline's route through the Jefferson National Forest. On this point, we disagree with Petitioners.

The predecisional review process effectually prohibits the Forest Service from issuing a final decision on a matter without first offering an opportunity for eligible parties to object to the draft ROD and responding to each objection in writing. *See* 36 C.F.R. §§ 218.7, 218.12. It applies to "proposed actions of the Forest Service concerning projects and activities implementing [forest plans] documented with a [ROD]." *Id.* § 218.1. The "reviewing officer" charged with responding to the objections is a Forest Service or Department of Agriculture official with more authority than the official responsible for making the decision. *See id.* §§ 218.3(a), 218.11. But, significantly, "[p]rojects and activities proposed by the Secretary of Agriculture or the Under Secretary, Natural Resources and Environment, are not subject to" the predecisional review process. *Id.* § 218.13(b). This exception applies in this case.

In an attempt to evade this exception to the predecisional process, Petitioners assert that MVP, not the Under Secretary for Natural Resources and Environment, "proposed" the Pipeline project. But Petitioners' interpretation of the term "proposed" as it is used in the exception is too narrow and ignores the broader regulatory scheme. The regulations governing the predecisional review process make clear that a proposal, for purposes of the exception, does not mean the application triggering action by the Forest Service but, rather, how the Forest Service decides to act in response to that application.

The structure of the predecisional review process -- which essentially provides for an additional level of scrutiny of a decision by an official of higher rank than the decisionmaking official -- and the language of the regulation defining "reviewing officer" presume that officers within the agency make proposals. 36 C.F.R. § 218.3(a). There is no distinction based on the source of the project's application. The Forest Service's internal guidance reinforces this interpretation: "A proposed action is a proposal by the Forest Service to authorize, recommend, or implement an action to meet a specific purpose and need. . . . When the Forest Service accepts an external proponent's proposal (like a powerline or ski resort) it becomes an Agency proposal to authorize the action." U.S. Forest Serv., FSH 1909.15 – National Environmental Policy Act Handbook, ch. 10, § 11.2 (2012), https://www.fs.fed.us/emc/nepa/nepa_procedures/index.shtml.

The Under Secretary for Natural Resources and Environment signed the ROD amending the Jefferson Forest Plan to accommodate the Pipeline. The Under Secretary's approval "constitutes the final administrative determination of the U.S. Department of Agriculture." 36 C.F.R. § 218.13(b). Therefore, the proposal was not subject to the

predecisional review process. *See* Project-Level Predecisional Administrative Review Process, 77 Fed. Reg. 47,337, 47,341 (proposed Aug. 8, 2012) (to be codified at 36 C.F.R. pt. 218) ("[36 C.F.R. § 218.13(b)] identifies that projects and activities authorized by the Secretary or Under Secretary of Agriculture are not subject to [the predecisional review] procedures.").

B.

Actual Sediment and Erosion Impacts

Next, Petitioners contend that the Forest Service and the BLM violated NEPA, the NFMA, and the MLA by inadequately considering the Pipeline's sediment and erosion impacts. Specifically, Petitioners assert that 1) the sediment modeling MVP used in its hydrological analyses relied on unsupported and implausible assumptions; 2) evidence of the Pipeline's actual impacts indicates the modeling is unreasonable, and the Forest Service and the BLM did not address such evidence; and 3) the agencies failed to address whether erosion and sedimentation caused by the Pipeline would violate water quality standards. We agree with Petitioners only as to the second of these assertions.

The Forest Service and the BLM erroneously failed to account for real-world data suggesting increased sedimentation along the Pipeline route. There is no evidence that the agencies reviewed the USGS water quality monitoring data from the Roanoke River, which may indicate a significant increase in sedimentation beyond that predicted in the modeling used for the supplemental EIS. At the very least, the supplemental EIS should have acknowledged this disparity and explained its impact on the agencies' reliance on the sedimentation data in the hydrological analyses.

But the Forest Service and the BLM suggest that the USGS data is not useful to their analysis for two reasons. First, they argue that the sediment modeling utilized in the supplemental EIS is not designed for site-specific comparisons. This argument begs the question -- how is the modeling useful to predict the Pipeline's environmental impact if it does not somehow reflect real-world data and scenarios demonstrating that impact?

Second, the agencies assert that Petitioners have not demonstrated how the USGS data is "relevant to the choice among alternatives with different environmental effects," which is the key consideration for their NEPA cost-benefit analysis. 40 C.F.R. § 1502.22. But this is an improper effort to shift the agencies' burden onto Petitioners. The Forest Service and the BLM, not Petitioners, are charged with fully considering the Pipeline's potential environmental impact before approving it.

The same is true of the agencies' argument that the USGS data should be discounted because it derives from locations outside the Jefferson National Forest. The Forest Service and the BLM suggest that the USGS data is unreliable because Petitioners "do not suggest that the land use [in the areas outside the forest where the USGS monitoring stations are located] is identical to the Forest sites," nor do Petitioners account for soil-loss mitigation measures or "the corresponding climactic conditions during the stream-gauge measurements." Resp'ts' Br. at 28. Again, the Forest Service and the BLM attempt to place the burden on Petitioners to demonstrate the similarities between the areas outside and inside the forest, rather than recognizing MVP's shortcomings. There is no reason to think (and the agencies have provided none) that the factors that could affect sedimentation in the four streams inside the forest that the Pipeline's

proposed route will cross will be any different inside the Jefferson National Forest than outside it, such that data from nearby locations outside the forest would not reflect the conditions within the forest.

By creating a false dichotomy between the impacts of construction inside and outside the Jefferson National Forest, placing the burden on Petitioners to explain the similarities between these two areas, and failing to address the USGS modeling that occurred nearby in the Roanoke River, the Forest Service and the BLM "entirely failed to consider an important aspect of the problem." *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582, 590 (4th Cir. 2018) (quoting *Defs. of Wildlife v. N.C. Dep't of Transp.*, 762 F.3d 374, 396 (4th Cir. 2014)). Therefore, we remand for the agencies to consider the USGS data and any other relevant information indicating that the modeling used in the EIS may not be consistent with data about the actual impacts of the Pipeline and its construction.

C.

Conventional Bore Method

Third, Petitioners argue that the Forest Service and the BLM violated NEPA by approving the use of the conventional bore method to cross the four streams within the Jefferson National Forest without first analyzing the method's environmental effects. Here again, we agree with Petitioners. "It would be one thing if the Forest Service had adopted a new alternative that was actually within the range of previously considered alternatives . . . . It is quite another thing to adopt a proposal that is configured

differently . . . ." *Dubois v. U.S. Dep't of Agric.*, 102 F.3d 1273, 1292–93 (1st Cir. 1996). The Forest Service and the BLM have done the latter here.

Although the supplemental EIS includes information about method, impact, safety, and environmental concerns related to conventional boring, the agencies' assent to MVP's use of conventional boring to construct the stream crossings is premature. Because MVP originally planned to use dry-ditch open cutting and wet cutting to construct the stream crossings, FERC's initial EIS considered the environmental impact of these methods. It did not extensively consider the conventional bore method because no stream crossings were to be constructed using that method.

Since then, MVP received authorization from FERC to modify how it would construct the stream crossings in the Jefferson National Forest. Specifically, FERC conducted a cursory review of MVP's request to switch to the conventional bore method and, after "informally consult[ing]" with the Fish and Wildlife Service, concluded that the change "is feasible and . . . will reduce [environmental] impacts on aquatic resources." J.A. 1200. However, FERC did not authorize MVP to construct any of the stream crossings using the conventional bore method because at the time, the Forest Service and the BLM had not yet approved the Pipeline's crossing through the Jefferson National Forest.

MVP has also requested to use the conventional bore method to construct other stream crossings outside the Jefferson National Forest. In response, FERC issued a notice indicating that it "will prepare an environmental document[] that will discuss the environmental impacts of" the requested change in the construction method for the

stream crossings. Mountain Valley Pipeline, LLC; Notice of Scoping Period and Requesting Comments on Environmental Issues for the Proposed Amendment to the Certificate of Public Convenience and Necessity for the Mountain Valley Pipeline Project, 86 Fed. Reg. 15,215, 15,215 (Mar. 22, 2021).

FERC characterizes MVP's request to switch to the conventional bore method as a request to amend the FERC Certificate for the Pipeline. *Id.* Without a FERC Certificate authorizing it to do so, MVP cannot "engage in the transportation or sale of natural gas . . . or undertake the construction or extension of any facilities therefor, or acquire or operate any such facilities or extensions thereof." 15 U.S.C. § 717f(c)(1)(A). Therefore, it follows that MVP cannot construct the stream crossings outside the Jefferson National Forest using the conventional bore method until FERC actually fully approves the amendment to the FERC Certificate to authorize that method.

In this regard, although FERC has given notice that it will issue a document assessing the environmental impacts of the change in the stream crossing construction method, it has not yet done so. Despite FERC's approval of the use of the conventional bore method for the stream crossings inside the Jefferson National Forest, the Forest Service and the BLM, in deciding whether to approve the Pipeline's route over those lands, would surely benefit from FERC's environmental analysis of the use of the conventional bore method for other stream crossings outside the Jefferson National Forest. As a result, the Forest Service and the BLM improperly approved the use of the conventional bore method for the four streams in the Jefferson National Forest without first considering FERC's analysis.

D.

Alternative Routes

Petitioners also argue that the Forest Service and the BLM insufficiently evaluated alternative routes for the Pipeline that do not pass through national forests, in violation of the MLA. We reject this argument for essentially the same reason we rejected it in the prior iteration of this case. *See Sierra Club*, 897 F.3d at 599–600. The supplemental EIS amply demonstrates that the agencies did, in fact, consider alternative routes but concluded that the environmental impacts would simply be shifted to other lands and the increased length of the Pipeline's route would affect more acreage, incorporate additional privately owned parcels, and increase the number of residences in close proximity to the Pipeline. Therefore, the record reveals that the BLM and the Forest Service complied with their obligations to assess alternative routes.

E.

Increased Collocation of Rights of Way

Relatedly, Petitioners assert that the BLM violated the MLA because it did not demonstrate that route alternatives that would increase collocation within the Jefferson National Forest were impractical. This argument likewise fails.

Pipeline routes crossing national forest lands must indeed be collocated with existing rights of way "to the extent practical." 30 U.S.C. § 185(p). But the BLM's interpretation of this standard is reasonable, and its framework for evaluating whether collocation is "practical" is sound.

Because neither the MLA nor its accompanying regulations define the meaning of "practical" as it is used in this provision, the BLM has interpreted it to mean "the suitability of a route alternative for achieving [the project's] purpose" -- here, "construct[ing] a pipeline to deliver natural gas from the [Pipeline's] beginning point to its endpoint, via its mid-route delivery points, in a safe, environmentally responsible, and cost-effective manner." J.A. 806. The BLM justified this interpretation by considering the term's common usage and legal definition, the MLA's implementing regulations,[7] the only decision applying the term,[8] and interpretations of the term "practicable" in other environmental regulations.[9] The BLM also enumerated and explained six factors for

[7] Specifically, the supplemental EIS reasons, "The BLM's regulations note that one of the objectives of the BLM's pipeline [right of way] program is to '[p]romote[] the use of rights-of-way in common considering engineering and technological compatibility,' and that the use of [rights of way] in common may be required 'where safety and other considerations allow.'" J.A. 805 (quoting 43 C.F.R. §§ 2881.2(c), 2882.10(b)).

[8] *Wyo. Indep. Producers Ass'n*, 133 IBLA 65, 82 (1995).

[9] Citing 40 C.F.R. §§ 230.3(l) and 230.10(a), the supplemental EIS states, "[A] regulation issued to implement section 404 of the Clean Water Act prohibits the issuance of a . . . permit 'if there is a practicable alternative to the proposed discharge' that is environmentally preferable, and defines 'practicable' as including 'consideration [of] cost, existing technology, and logistics in light of overall project purposes.'" J.A. 806. The supplemental EIS continues, "In reviewing decisions made under this regulation by the U.S. Army Corps of Engineers . . . courts have deferred to the agency's practicability determinations, and upheld its consideration of factors including cost, construction delays, logistical feasibility, and 'the objectives of the applicant's project.'" *Id.* (citing *Friends of Santa Clara River v. U.S Army Corps of Eng'rs*, 887 F.3d 906, 912, 921–22 (9th Cir. 2018); *Friends of the Earth v. Hintz*, 800 F.2d 822, 833–34 (9th Cir. 1986); *Nat'l Parks Conservation Ass'n v. Semonite*, 311 F. Supp. 3d 350, 377–78 (D.D.C. 2018), *rev'd*, 916 F.3d 1075 (D.C. Cir. 2019)).

assessing "practicality": 1) "construction challenges and potential safety hazards"; 2) "environmental consequences"; 3) "increase[s] in the pipeline's length and footprint"; 4) "the ability . . . to serve MVP's mid-route delivery points"; 5) "additional costs"; and 6) "the likelihood that the route would achieve any specific purpose." *Id.* at 806–07.

At its core, Petitioners' assertion that the BLM failed to apply the test it developed to the Pipeline boils down to no more than their disagreement with the outcome of the BLM's analysis. But, for the reasons outlined, we conclude the BLM did not err when assessing the Pipeline route's collocation with existing rights of way in the Jefferson National Forest.

F.

2012 Planning Rule

Finally, Petitioners argue that the Forest Service again failed to apply its 2012 Planning Rule's directly related substantive requirements within the scope and scale of the amendments to the Jefferson Forest Plan to accommodate the Pipeline, as the 2016 Revised Rule requires. Petitioners assert that the amendments do not actually comply with any of the corresponding substantive requirements set forth in the 2012 Planning Rule and that the Forest Service applied an incorrect legal standard when it determined that the amendments did comply with the substantive requirements. We agree.

We previously concluded that the 2012 Planning Rule's soil and riparian resources requirements apply to the proposed amendments for the Pipeline. *Sierra Club*, 897 F.3d at 603. In its renewed ROD, the Forest Service acknowledges that the amendments are "directly related" to these requirements, but it maintains that it has complied with the

requirements because it "applied [them] to provide protection to resources without substantial lessening of protections for these resources." J.A. 582.

This conclusion is not sound. First, the 2012 Planning Rule does not demand that the amendments protect forest resources without substantial lessening of protections. Rather, a forest plan "must include . . . components . . . to *maintain or restore* the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area." 36 C.F.R. § 219.8(a)(1) (emphasis supplied). Because the Forest Service did not sufficiently consider the Pipeline's actual sediment and erosion impacts, as we have already explained, the amendments to the Jefferson Forest Plan may not "maintain" soil and riparian resources within the scope of the 2012 Planning Rule. And because the Forest Service does not have a clear indication from FERC about the environmental impacts of the use of the conventional bore method to cross the four streams within the Jefferson National Forest, it is unclear whether the amendments to the Jefferson Forest Plan for the Pipeline will even "maintain" the forest's resources, as the 2012 Planning Rule intended.

Further, the Forest Service cannot rely on the notion that because the Pipeline will affect only a minimal fraction of the entire Jefferson National Forest, application of the existing forest plan (*i.e.*, without Pipeline-related amendments) outside this area will continue to provide adequate protections. "If the Forest Service could circumvent the requirements of the 2012 Planning Rule simply by passing project-specific amendments on an ad hoc basis . . . the substantive requirements in the 2012 Planning Rule . . . would be meaningless." *Cowpasture River Pres. Ass'n v. Forest Serv.*, 911 F.3d 150, 164 (4th

Cir. 2018), *rev'd and remanded on other grounds*, 140 S. Ct. 1837 (2020). In any event, the Forest Service has not provided an analysis of whether application of the existing Jefferson Forest Plan is adequately protecting these resources elsewhere in the Jefferson National Forest.

As a result, we are compelled to once again remand so that the Forest Service can properly apply the 2012 Planning Rule's soil and riparian resources requirements to the Pipeline amendments.

IV.

Conclusion

In sum, we conclude that the Forest Service and the BLM 1) inadequately considered the actual sedimentation and erosion impacts of the Pipeline; 2) prematurely authorized the use of the conventional bore method to construct stream crossings; and 3) failed to comply with the Forest Service's 2012 Planning Rule. Therefore, we grant the petitions for review as to those errors; deny the petitions with regard to Petitioners' remaining arguments about the predecisional review process, alternative routes, and increased collocation; vacate the decisions of the Forest Service and the BLM; and remand this matter to the agencies for further proceedings consistent with this opinion.

PETITIONS FOR REVIEW GRANTED IN PART AND DENIED IN PART, VACATED AND REMANDED

Exhibit 2

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 20-2159

APPALACHIAN VOICES; WILD VIRGINIA; WEST VIRGINIA RIVERS COALITION; PRESERVE GILES COUNTY; PRESERVE BENT MOUNTAIN, a chapter of Blue Ridge Environmental Defense League; WEST VIRGINIA HIGHLANDS CONSERVANCY; INDIAN CREEK WATERSHED ASSOCIATION; SIERRA CLUB; DEFENDERS OF WILDLIFE; CHESAPEAKE CLIMATE ACTION NETWORK; CENTER FOR BIOLOGICAL DIVERSITY,

Petitioners,

v.

UNITED STATES DEPARTMENT OF THE INTERIOR; DEB HAALAND, in her official capacity as Secretary of the U.S. Department of the Interior; UNITED STATES FISH AND WILDLIFE SERVICE, an agency of the U.S. Department of the Interior; AURELIA SKIPWITH, in her official capacity as Director of the U.S. Fish and Wildlife Service; CINDY SCHULZ, in her official capacity as Field Supervisor, Virginia Ecological Services, Responsible Official,

Respondents,

MOUNTAIN VALLEY PIPELINE, LLC,

Intervenor.

On Petition for Review of the United States Fish and Wildlife Service's Biological Opinion and Incidental Take Statement. (CP16-10-000)

Argued: October 29, 2021 Decided: February 3, 2022

Before GREGORY, Chief Judge, and WYNN and THACKER, Circuit Judges.

Vacated and remanded by published opinion. Judge Wynn wrote the opinion, in which Chief Judge Gregory and Judge Thacker joined.

ARGUED: Elizabeth Fay Benson, SIERRA CLUB, Oakland, California, for Petitioners. Kevin William McArdle, UNITED STATES DEPARTMENT OF JUSTICE, Washington, D.C., for Respondents. George Peter Sibley, III, HUNTON ANDREWS KURTH, LLP, Richmond, Virginia, for Intervenor. **ON BRIEF:** Nathan Matthews, SIERRA CLUB, Oakland, California; Benjamin A. Luckett, Derek O. Teaney, APPALACHIAN MOUNTAIN ADVOCATES, Lewisburg, West Virginia, for Petitioners. Jean E. Williams, Acting Assistant Attorney General, Environment and Natural Resources Division, UNITED STATES DEPARTMENT OF JUSTICE, Washington, D.C.; S. Amanda Bossie, UNITED STATES DEPARTMENT OF THE INTERIOR, Washington, D.C., for Respondents. J. Pierce Lamberson, HUNTON ANDREWS KURTH LLP, Richmond, Virginia; Sandra A. Snodgrass, HOLLAND & HART LLP, Denver, Colorado; W. Parker Moore, Katrina M. Krebs, BEVERIDGE & DIAMOND, PC, Washington, D.C., for Intervenor.

WYNN, Circuit Judge:

Petitioners, a collection of environmental nonprofit organizations, challenge the Fish and Wildlife Service's 2020 Biological Opinion and Incidental Take Statement for the Mountain Valley Pipeline. They allege, among other things, that the agency failed to adequately consider the project's environmental context while analyzing impacts to two species of endangered fish, the Roanoke logperch and the candy darter. We agree, and therefore vacate the 2020 Opinion and Incidental Take Statement and remand for further proceedings.

I.

Before we can analyze the merits of this case, we must lay out some background details. We begin by briefly describing the relevant legal framework. Then, we turn to the facts and procedural history of this case. Finally, we describe the biological context for the two endangered species at issue.

A.

The Endangered Species Act of 1973 ("Endangered Species Act" or "the Act") represents "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978); Jacob Malcom & Andrew Carter, *Better Representation Is Needed in U.S. Endangered Species Act Implementation*, 2 Frontiers in Conservation Sci., April 20, 2021, at 1, https://doi.org/10.3389/fcosc.2021.650543 ("The U.S. Endangered Species Act . . . is often considered the strongest conservation law in the world for imperiled wildlife.") (saved as ECF opinion attachment). "The plain intent of Congress in enacting this statute was to halt and reverse

the trend toward species extinction, whatever the cost." *Tenn. Valley Auth.*, 437 U.S. at 184. To that end, the Endangered Species Act requires federal agencies "to afford first priority to the declared national policy of saving endangered [or threatened] species"—even when this goal conflicts with agencies' "primary missions." *Id.* at 185. The Act also prohibits "[v]irtually all dealings with [listed] species" by any individual or entity "except in extremely narrow circumstances." *Id.* at 180.

These "broad[ly] sweep[ing]" policies are codified in Sections 7 and 9 of the Endangered Species Act. *Id.* at 188. Section 7 requires federal agencies to ensure that "any action authorized, funded, or carried out by [the] agency . . . is not likely to jeopardize the continued existence of any [listed] species." 16 U.S.C. § 1536(a)(2). To "jeopardize the continued existence" 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.

This substantive duty to avoid jeopardy is policed by a procedural consultation requirement. 16 U.S.C. § 1536(a)(2). Whenever an agency action "may affect listed species," the agency must formally consult with the Fish and Wildlife Service. 50 C.F.R. § 402.14(a). During consultation, the Fish and Wildlife Service must formulate a "biological opinion" on whether that action, in light of the relevant environmental context, "is likely to jeopardize the continued existence of [those] species." *Id.* § 402.14(g). In making this determination, the Fish and Wildlife Service must "use the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8).

Section 9 of the Endangered Species Act broadly prohibits the "take" of any listed species. 16 U.S.C. § 1538(a)(1)(B). To "take" means to "harass, harm, . . . wound, [or] kill, . . . or to attempt to engage in any such conduct." *Id.* § 1532(19). If the Fish and Wildlife Service determines that an agency action is not likely to jeopardize a listed species but is "reasonably certain" to lead to incidental "take" of that species, it must provide the action agency with an incidental take statement. 50 C.F.R. § 402.14(g)(7), (i). This statement shall specify the "amount or extent" of incidental take, "reasonable and prudent" mitigation measures, and "terms and conditions" to implement those measures. *Id.* § 402.14(i)(1). Any incidental take consistent with these limits is not prohibited by Section 9. *Id.* § 402.14(i)(5). But whenever these limits are exceeded the action agency must "reinitiate consultation immediately." *Id.* § 402.14(i)(4).

B.

The Mountain Valley Pipeline (the "Pipeline" or the "Project") is a 42-inch diameter, 304-mile proposed natural gas pipeline stretching from West Virginia to Virginia. The proposed route crosses seventeen counties and more than 1,100 streams, and will disturb 6,951 acres of land, including 4,168 acres of soils that have the potential for severe water erosion. Nearly one-quarter of the proposed Pipeline will traverse slopes greater than 30%.[1] When fully complete, the Pipeline will deliver up to two billion cubic feet of natural gas per day to markets in the mid-Atlantic and Southeast.

[1] For comparison, black diamond ski slopes—among the steepest and most difficult runs on any mountain—typically "have a gradient of 40% or higher." SKI Profiles, *Ski Slope Levels: What Are They and What Skill Do I Need?* (Nov. 12, 2019),

The Federal Energy Regulatory Commission ("FERC") authorized construction of the Project on October 13, 2017. Mountain Valley Pipeline, LLC, 161 FERC ¶ 61,043 (2017) (order issuing certificates). Because the Project could impact listed species, FERC consulted with the Fish and Wildlife Service, as required by Section 7 of the Endangered Species Act. About a month later, the Fish and Wildlife Service submitted its original Biological Opinion and Incidental Take Statement to FERC. This opinion concluded the Project was not likely to jeopardize any of the listed species it examined, including the Roanoke logperch and the Indiana bat.

On July 27, 2018, this Court found the U.S. Forest Service violated the National Environmental Policy Act ("NEPA") when it adopted FERC's Environmental Impact Statement for the Project. *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582, 596 (4th Cir.), *reh'g granted in part on other grounds*, 739 F. App'x 185 (4th Cir. 2018). In relevant part, we held that the Forest Service arbitrarily adopted FERC's flawed sedimentation analysis when assessing impacts to the Jefferson National Forest. *Id.* A few months later, U.S. Geological Survey scientist Dr. Paul Angermeier sent comments to the Fish and Wildlife Service, pointing out that the same arbitrary assumptions undergirded its 2017 Biological Opinion's assessment of the Project's impacts on the logperch. He also identified several other "unjustified" analytical choices that caused the Fish and Wildlife Service to "significantly underestimate potential impacts" of the Project on the logperch.

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https://skiprofiles.com/ski-slope-levels-what-skill-do-i-need/ (saved as ECF opinion attachment).

J.A. 1358–66.[2] Around the same time, the Fish and Wildlife Service published a final rule listing the candy darter as endangered. Endangered and Threatened Wildlife and Plants; Endangered Species Status for the Candy Darter, 83 Fed. Reg. 58,747 (Nov. 21, 2018) (codified at 50 C.F.R. pt. 17).

On August 12, 2019, several of the Petitioners filed a petition for review with this Court and separately requested that the Fish and Wildlife Service stay its 2017 Biological Opinion. The agency denied the stay request because Mountain Valley Pipeline, LLC ("Mountain Valley") had already voluntarily suspended certain activities. On August 21, these groups requested a judicial stay pending review of their petition. Shortly after, this Court issued an order staying the 2017 Biological Opinion.

During this same time period, FERC reinitiated consultation for the Project with the Fish and Wildlife Service. On September 4, 2020, the Fish and Wildlife Service issued a new Biological Opinion ("BiOp" or "2020 BiOp") and Incidental Take Statement. The Fish and Wildlife Service determined that the Project was likely to adversely affect five listed species: a shrub called the Virginia spiraea, the Roanoke logperch, the candy darter, the Indiana bat, and the northern long-eared bat. However, the agency ultimately found that the Project was unlikely to jeopardize any of these five species.

On October 27, 2020, Petitioners filed a petition for review. A few days later we granted Mountain Valley's motion to intervene.

[2] Citations to the "J.A." refer to the Joint Appendix filed by the parties in this appeal. Citations to the "S.J.A." refer to the Sealed Joint Appendix.

C.

Petitioners' current petition for review concerns three endangered species: the Roanoke logperch, candy darter, and Indiana bat.[3] We need only describe the factual context for the first two.[4]

[3] Throughout this opinion, we refer to the Roanoke logperch as the "logperch" and the candy darter as the "darter." This is for ease of reference only, and is not meant to imply that the logperch is not a species of darter (it is), or that we are talking about any other species sharing the logperch or darter names.

[4] Because the Fish and Wildlife Service's deficient analysis of the logperch and darter requires us to vacate and remand, we find it unnecessary to address Petitioners' claims concerning the arbitrary nature of the Incidental Take Statement for the Indiana bat. *See Or. Nat. Res. Council v. Allen*, 476 F.3d 1031, 1041 (9th Cir. 2007) (holding that when the "underlying BiOp has been [vacated], the Incidental Take Statement lacks a rational basis"); *see also id.* at 1036–37 ("Without understanding the scope and purpose of the action itself—information contained in the BiOp—there is no way to know whether the take being authorized is properly 'incidental.'").

However, on remand, we recommend that the Fish and Wildlife Service further explain why it anticipates no effects to the bat from clearing more than 1,000 acres of suitable but unoccupied summer habitat. In 2017, the agency found that the "*majority* of effects to [the bat]" from the nearby Atlantic Coast Pipeline "will occur" from tree clearing of this same habitat type—even though no bats were identified in summer surveys of these areas. J.A. 1512 (emphasis added). These effects were anticipated because bats, including pregnant females, may use these areas "as a travel corridor between hibernacula and roost trees" in non-summer months. J.A. 1512.

In contrast, for the 2020 BiOp the Fish and Wildlife Service found that clearing suitable but unoccupied summer habitat would have *no* adverse effects on the bat because 2015–16 summer survey results "indicate that [Indiana bats] are not present." J.A. 82. But summer surveys would necessarily fail to account for bats traveling through these areas during non-summer months. The Fish and Wildlife Service appreciated this fact in 2017; it anticipated impacts to the bat from clearing suitable unoccupied summer habitat even though no bats were found there during the summer. On remand, the agency must explain why it has now come to a different conclusion based on similarly negative summer-only survey results.

1.

The Roanoke logperch is an endangered freshwater fish endemic to Virginia and North Carolina. The logperch inhabits medium to large warmwater streams and requires "[m]icrohabitats with loosely embedded substrate free of silt." J.A. 45. They reach sexual maturity after two to three years but can live up to 6.5 years. Logperch are benthic (bottom-dwelling) sight feeders that "flip rocks with their snout to expose invertebrates and ingest the exposed prey." J.A. 46. Increased sedimentation can wipe out many of the invertebrates that logperch feed on and interfere with their ability to see prey. Sedimentation can also interfere with egg and larval development and cause the production of fewer and smaller eggs.

We also encourage the agency to further clarify—in the BiOp—why its 2015–16 Indiana bat surveys are still valid. It is unclear from the record whether surveys from this time period are valid for a minimum of two, three, or five years. *Compare* J.A. 82 (2020 BiOp noting that "[s]ince 2018" the agency "has accepted negative surveys rangewide for a minimum of 5 years . . . [while] prior to that it was a minimum of 2 years"), *with* J.A. 1282 (letter from Fish and Wildlife Service Deputy Assistant Regional Director noting that a bat survey completed using pre-2018 guidelines "remains valid for 3 years"). Though these minimum time frames will undoubtedly be exceeded on remand, "[t]here is no automatic expiration of survey results . . . as these are *minimum*[]" time frames. J.A. 82 (emphasis added). And it probably still makes sense to rely on these older surveys as the last—and therefore best—snapshot of bat activity in the area pre-Project. After all, most of the suitable unoccupied summer habitat has already been cleared. But if that is so, the agency must make it explicit.

Figure 1: Adult male Roanoke logperch. J.A. 1613.

The Roanoke logperch is only found in four river systems within Virginia and North Carolina: the Nottoway, Pigg, Roanoke, and Smith Rivers. These four river systems are home to seven distinct populations. The Project will impact two of these populations located in the Pigg and Roanoke Rivers. Because these two watersheds "cover a large geographic extent, contain an estimated large population, and run a lower risk of being susceptible to extirpation," they are expected to "underpin the recovery of the species." J.A. 73. The Roanoke River population in particular "harbors the majority of the species' extant genetic diversity" and therefore "should receive the highest priority for protection." J.A. 1238. In total, the Project will impact 6.7 kilometers of habitat in the Pigg River system, resulting in take of 6.7% of the Pigg River population. The Project will also impact 17.6 kilometers of habitat in the Roanoke watershed, resulting in take of 14.9% of the total estimated Roanoke River population.

2.

The candy darter is an endangered freshwater fish endemic to Virginia and West Virginia. It is a "habitat specialist" that is "typically found in high- to moderate-gradient, cool- or cold-water stream ecosystems." J.A. 50. This species has a "relatively short life cycle, reaching sexual maturity by age 2 and often dying during their third year." J.A. 50. The candy darter is "generally intolerant of excessive stream sedimentation"; indeed, "[e]xcessive sedimentation was likely a primary cause of the [darter's] historical decline." J.A. 50, 53. The darter is not as mobile as its logperch cousin, meaning it "will likely not avoid areas of heavy sediment deposition by moving to other areas of suitable habitat within the system." J.A. 111.

Figure 2: Adult male candy darter. J.A. 1416.

Eighteen fragmented populations of candy darter remain. Many of these populations are threatened by excessive sedimentation and hybridization with the closely related variegate darter. Due largely to the increasing threat of hybridization, a 2018 Species Status Assessment Report predicted the species' "most likely future scenario" is near-total

extirpation across its current range, which "significantly increases the candy darter's risk of extinction over the next 25 years." J.A. 1408, 1462. Importantly, the two populations that will be impacted by the Pipeline—the Gauley River and Stony Creek populations—have yet to experience significant hybridization. Because they are "among the most genetically pure populations" remaining, they are "*essential* to the recovery of the species." J.A. 75 (emphasis added). In total, the Pipeline is projected to impact 2 of the 44 kilometers of proposed critical habitat in the Upper Gauley River and 1 of the 31 kilometers of proposed critical habitat in Stony Creek.[5]

II.

This Court has original and exclusive jurisdiction to review the BiOp under the Natural Gas Act. *See* 15 U.S.C. § 717r(d)(1). "Because the Endangered Species Act does not specify a standard of review, we apply the general standard of review of agency action established by" the Administrative Procedure Act. *Sierra Club v. U.S. Dep't of the Interior*, 899 F.3d 260, 270 (4th Cir. 2018) (citation and internal quotation marks omitted).

Under the Administrative Procedure Act, we must "hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Agency action is arbitrary and capricious "if the agency has relied on factors which Congress has not

[5] The Fish and Wildlife Service did not calculate a numeric incidental take estimate for the darter because "data is either unavailable (Gauley River) or lacks the precision needed to generate meaningful take estimates (Stony Creek), and such data cannot be readily obtained." J.A. 172.

intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

"Review under this standard is highly deferential, with a presumption in favor of finding the agency action valid." *Ohio Valley Env't Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 192 (4th Cir. 2009). "Nevertheless, we must conduct a 'searching and careful' review to determine whether the agency's decision 'was based on a consideration of the relevant factors and whether there has been a clear error of judgment.'" *Sierra Club*, 899 F.3d at 270 (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989)). In determining whether such an error was made, the "reviewing court may look only to [the agency's] *contemporaneous* justifications" for its actions. *Dow AgroSciences LLC v. Nat'l Marine Fisheries Serv.*, 707 F.3d 462, 467 (4th Cir. 2013). Because "an agency's action must be upheld, if at all, on the basis articulated by the agency itself," "courts may not accept appellate counsel's *post hoc* rationalizations for agency action." *State Farm*, 463 U.S. at 50.

Petitioners advance numerous challenges to the 2020 BiOp. We start by assessing Petitioners' claim that the Fish and Wildlife Service did not adequately analyze the environmental context for the Roanoke logperch and candy darter. Because we agree with Petitioners' argument, we conclude we must vacate and remand on that basis. Next, we

address additional minor challenges further attacking the agency's analysis and Incidental Take Statement. We conclude these additional challenges are meritless.

A.

When it comes to protecting listed species, environmental context is critical. *See Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Reclamation*, 426 F.3d 1082, 1093 (9th Cir. 2005) (holding a proper jeopardy analysis requires investigating whether "jeopardy might result from the agency's proposed actions in the present and future human and natural contexts"). If the Fish and Wildlife Service conducted its "jeopardy analysis in a vacuum," focusing only on the individual agency action at issue, then "a listed species could be gradually destroyed, so long as each step on the path to destruction [wa]s sufficiently modest." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 929–30 (9th Cir. 2008). But this "slow slide into oblivion is one of the very ills the [Endangered Species Act] seeks to prevent." *Id.* at 930.

The Act guards against this danger by requiring the Fish and Wildlife Service to formulate its biological opinion in three primary steps.

First, the Fish and Wildlife Service must "[r]eview *all* relevant information provided by the [action] agency or *otherwise available*." 50 C.F.R. § 402.14(g)(1) (emphases added). This requirement meshes with, and is partially derived from, the Act's mandate to "use the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2). These are not passive directives; rather, the Fish and Wildlife Service "must seek out and consider all existing scientific data relevant to the decision it is tasked with making." *Defs. of Wildlife v. U.S. Dep't of the Interior*, 931 F.3d 339, 346 (4th Cir. 2019).

Second, the Fish and Wildlife Service must "[e]valuate" four different categories of information: (1) the "current status" of the listed species; (2) the "environmental baseline"; (3) the "cumulative effects" of non-federal action; and (4) the "effects of the [agency] action." 50 C.F.R. § 402.14(g)(2), (3). This case primarily concerns the middle two categories: the "environmental baseline" and "cumulative effects."

The "environmental baseline" is defined by the Fish and Wildlife Service's regulations as "the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action."[6] 50 C.F.R. § 402.02. This includes "the past and present impacts of *all* Federal, State, or private actions and other human activities in the action area" as well as the "anticipated impacts" of contemporaneous actions. *Id.* (emphasis added). This definition is further fleshed out in the Fish and Wildlife Service's Consultation Handbook, which describes the "environmental baseline [a]s a 'snapshot' of a species' health at a specified point in time." U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., Endangered Species Consultation Handbook 4-22 (1998) [hereinafter "Consultation Handbook"].[7] This "snapshot" folds in the "effects of past and ongoing human and natural

[6] The action area is the area "to be affected directly or indirectly by the Federal action." 50 C.F.R. § 402.02.

[7] This document provides internal guidance for the Fish and Wildlife Service during consultation. Notice of Availability of Final Endangered Species Consultation Handbook for Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act, 64 Fed. Reg. 31,285 (June 10, 1999). Though it is over twenty years old, the definition of environmental baseline has changed only slightly since, and the Fish and Wildlife Service still considers the Consultation Handbook relevant.

factors leading to the current status of the species," as well as an analysis of the local ecosystem and the species' habitat in the action area. *Id.*

"[C]umulative effects" are defined by the Fish and Wildlife Service's regulations as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area." 50 C.F.R. § 402.02. "'[R]easonably certain to occur' does *not* require a guarantee the action will occur," but wholly "[s]peculative non-Federal actions that may never be implemented are not factored into the 'cumulative effects' analysis." Consultation Handbook at 4-30 (emphasis added). This definition is "narrower" than that found in since-repealed implementing regulations for NEPA, although there was certainly overlap between the two.[8] *Id.* at 4-31 (suggesting the Fish and Wildlife Service "can review the broader NEPA discussion of cumulative effects" in any NEPA analyses conducted for a project and then "apply the [Endangered Species] Act's narrower cumulative effects definition" to those analyses).

Though climate change could be considered a cumulative effect, *see Turtle Island Restoration Network v. U.S. Dep't of Com.*, 878 F.3d 725, 736 (9th Cir. 2017), it does not fit neatly into just this category. We take no position on whether climate change is best addressed as a baseline factor, cumulative effect, some mixture of the two, or something else entirely. *See Wild Fish Conservancy v. Irving*, 221 F. Supp. 3d 1224, 1234 (E.D. Wash.

[8] This regulation was still in effect when FERC prepared its original Environmental Impact Statement for the Project. The regulation defined cumulative impacts as "impacts on the environment which result from incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions." J.A. 1566 (quoting 40 C.F.R. § 1508.7 (1978)).

2016) ("It is, of course, not the Court's place to tell the agency *how* to . . . consider climate change in its analysis, it simply must consider it."); J.A. 49 (Fish and Wildlife Service mentioning climate change as part of its environmental baseline analysis for the logperch); Response Br. at 21 (Fish and Wildlife Service referring to climate change as a "current and future baseline" factor). It is clear, however, that climate change typically must form part of the analysis in some way. *S. Yuba River Citizens League v. Nat'l Marine Fisheries Serv.*, 723 F. Supp. 2d 1247, 1274 (E.D. Cal. 2010) (reviewing cases finding that the "failure to discuss the impacts of climate change rendered BiOps arbitrary and capricious").

Third, and finally, the Fish and Wildlife Service must "*[a]dd* the effects of the action and cumulative effects to the environmental baseline and[,] *in light of* the status of the species and critical habitat, formulate [its] opinion as to whether the action is likely to jeopardize the continued existence of [the] listed species." 50 C.F.R. § 402.14(g)(4) (emphases added). In effect, the Fish and Wildlife Service must make its jeopardy determination while viewing the action "against the aggregate effects of everything that has led to the species' current status and, for non-Federal activities, those things [reasonably certain] to affect the species in the future." Consultation Handbook at 4-35.

Petitioners here allege issues with the second and third steps. We consider them each in turn.

1.

Petitioners first argue—at the second primary step of the Fish and Wildlife Service's biological-opinion process—that the agency failed to adequately evaluate the "environmental baseline" and "cumulative effects" for two listed species: the Roanoke

logperch and the candy darter. They also allege that the agency neglected to fully consider the impacts of climate change. We agree on all counts.

i.

We turn first to the Fish and Wildlife Service's evaluation of the environmental baseline. As noted above, the agency must evaluate the environmental baseline within "*the action area*." 50 C.F.R. § 402.02 (emphasis added). The action area is the area "to be affected directly or indirectly by the Federal action." *Id.* In this case, the action area includes the Pipeline construction right-of-way and waterbodies that may be impacted by the Project. We conclude that while the BiOp ably describes the range-wide conditions of the Roanoke logperch and the candy darter, it fails to adequately evaluate the environmental baseline for these species within the action area itself.

To begin, the BiOp's evaluation of the environmental baseline for the logperch is sparse and scattered.[9] It starts by discussing the species' range-wide status and population-level threats, though the latter information is fifteen years old. *See* J.A. 45–48 (referencing a 2007 Fish and Wildlife Service study). It also mentions watershed-level characteristics of the Roanoke and Pigg Rivers. The BiOp then narrows its focus, describing basic habitat

[9] Only some of what follows is actually within the "Environmental Baseline" section of the BiOp. But this is a distinction without a difference; the question is whether this factor was evaluated by the Fish and Wildlife Service, not what section of the BiOp it is in. *Cf. Oceana, Inc. v. Pritzker*, 125 F. Supp. 3d 232, 242 (D.D.C. 2015) (concluding that the agency properly analyzed cumulative impacts by relying on population trends and trajectories set forth in the "Status of the Species" and "Environmental Baseline" sections of the biological opinion); 5 U.S.C. § 706 (requiring courts to "review the whole record" when assessing agency actions).

conditions for some, but not all, of the Project's crossings.[10] *Compare, e.g.*, J.A. 72 (noting the Harpen Creek crossing "was classified as low gradient with shallow riffles that exhibit heavy embeddedness and siltation"), *with* J.A. 71–72 (neglecting to describe the in-stream habitat for the North Fork Roanoke River 1 crossing). It also mentions that the logperch's "decline *in the action area* is primarily the result of *destruction and modification of habitat* and fragmentation of the species range." J.A. 72 (emphases added). It then zooms back out to note that, generally speaking, the "[p]rimary causes of [logperch] habitat degradation include chemical spills, non-point runoff, channelization, impoundments, impediments, and siltation." J.A. 72–73.

This is an inadequate evaluation. In effect, the Fish and Wildlife Service is attempting to pass off its summary of range-wide conditions and threats as an action-area analysis. But vaguely referring to the "destruction and modification of habitat" within the action area, without explaining the specific causes or extent of this local degradation, leaves us guessing at what the baseline condition for the logperch might actually be.

In fact, other portions of the record suggest that a host of unaddressed stressors might already be impacting logperch in the action area. For example, the Fish and Wildlife Service acknowledges that "there are *numerous* state and private activities currently

[10] Though we applaud the Fish and Wildlife Service for describing the habitat conditions for at least a few of the crossings, these crossings are not the only part of the action area. The action area also includes stream segments upstream and downstream of the crossing, as well as "stream[s] expected to experience a measurable increase in [P]roject-related sediment" and "the mixing zone in a stream segment where sediment from tributaries (crossed or receiving sediment from the [P]roject) is delivered to streams of interest." J.A. 40.

occurring within the action area." J.A. 141 (emphasis added). However, it never tells us what these activities are, or what impact they may be having. Similarly, Mountain Valley noted that "[n]umerous known third-party land disturbance activities (e.g., agriculture, timber, mining, and off-road vehicle tracks) exist *immediately adjacent* to the aquatic species streams and the[ir] tributaries." J.A. 430 (emphasis added); *see also* J.A. 1558 (2017 Environmental Impact Statement showing mining activity along the proposed Pipeline route in watersheds supporting the logperch). Yet the BiOp fails to evaluate the impact of these "immediately adjacent" operations.

Even if we were to agree that the Fish and Wildlife Service's one-sentence recitation of general threats to the logperch passes as an action-area analysis—and we do not—there are several other factors it neglected to discuss. For example, the agency previously flagged "watershed urbanization," road development, and loss of "woody debris" due to local deforestation as important stressors for the Roanoke and Pigg River populations generally. J.A. 1667–70. But the Fish and Wildlife Service fails to analyze whether these population-level stressors are still impacting logperch within the action area.

To be sure, the Fish and Wildlife Service has a stronger argument that it properly evaluated the environmental baseline for the candy darter.[11] The BiOp starts by describing the species' conservation needs, current distribution, and range-wide threats. Next, it notes the genetic importance of the Upper Gauley River and Stony Creek populations—the two

[11] Some of the material that follows is sourced from the Fish and Wildlife Service's discussion of the status of proposed critical habitat. But again, it does not matter where this information is evaluated within the BiOp, so long as it is evaluated.

populations the Project will impact—and describes the general health of these populations. It also extensively describes the ecological conditions in these areas, including data on local forest cover, water temperatures, anthropogenic impairments, invasive species, and habitat connectivity.

Nonetheless, the Fish and Wildlife Service's evaluation still falls short. Though the agency admirably describes conditions at the population level, it never narrows its analysis to focus on the specific action area. If it had, it might have noted that the lower reaches of Stony Creek—precisely where the Pipeline will cross—are "adjacent to a large underground limestone mine, an associated lime plant, a railroad spur line, and a paved road." J.A. 1443. In addition, the "lower portions of Stony Creek dry up periodically as a result of water leaking into a local mine"—presumably the same limestone mine. S.J.A. 1888. Yet these stressors are not expressly addressed in the BiOp.

The Fish and Wildlife Service and Mountain Valley advance two primary counterarguments. First, they argue that the Fish and Wildlife Service was not required to "provide an inventory" of "each activity that has occurred or is occurring in the action area." Response Br. at 18; *see also* Intervenor's Br. at 21–22. Rather, the definition of "environmental baseline" requires the Fish and Wildlife Service to describe the "condition" of the listed species and assess "impacts" of human activities in the action area. Response Br. at 18; Intervenor's Br. at 21. Requiring more, they contend, would "graft extra procedural requirements onto the regulations." Intervenor's Br. at 22; *see also* Response Br. at 18.

This argument is a red herring. It is true that the Endangered Species Act implementing regulations do not require the Fish and Wildlife Service to list past and ongoing activities. *See* 50 C.F.R. § 402.02. In fact, merely listing activities fails to satisfy the agency's regulatory responsibilities. *Defs. of Wildlife v. Babbitt*, 130 F. Supp. 2d 121, 128 (D.D.C. 2001) ("There must be an analysis of the status of the environmental baseline given the listed impacts, not simply a recitation of the activities of the agencies."). But Petitioners are not asking for a list of past and present activities; they are asking for the *impacts* of those activities to be accounted for—as required by the Act. *See id.* And neither the Fish and Wildlife Service nor Mountain Valley adequately explain how the BiOp could account for these impacts if the activities giving rise to them are never even mentioned.

For example, how can the agency account for impacts on the logperch stemming from the loss of "woody debris" in the Roanoke and Pigg watersheds if it never even discusses this stressor at the action-area level? The answer, according to the Fish and Wildlife Service's second counterargument, lies in the magic of statistical modeling. In essence, the agency argues that since it incorporated the results of two population and risk-projection models—one for the logperch and one for the darter—into the BiOp, it necessarily "account[ed] for *all* potential" "past and ongoing stressors in the action area." Response Br. at 16–17, 23 (emphasis added). Because these models reflect "the aggregate effects of *everything* that has led to the current status of the affected populations," parsing out and analyzing "each past and ongoing activity"—like the limestone mine—"would add no value and is not required." *Id.* at 19, 23 (emphasis added).

The Fish and Wildlife Service stretches this argument—and these models—much too far. To start, this explanation isn't found anywhere in the record. The Fish and Wildlife Service never says that it is relying on these models to evaluate the environmental baseline. Nor do the BiOp or the studies describing the models contain any language suggesting that these models account for "*all* potential stressors" or constitute "*everything* that has led to the current status of the affected populations." Thus, these explanations are no more than impermissible post hoc rationalizations. *E.g.*, *Dow AgroSciences*, 707 F.3d at 467–68 ("[A] reviewing court may look only to these *contemporaneous* justifications in reviewing the agency action."); *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 604 (4th Cir. 2012) ("[A]n agency's action must be upheld, if at all, on the basis articulated by the agency itself," and the "'basis articulated by the agency' is the administrative record, not subsequent litigation rationalizations." (quoting *State Farm*, 463 U.S. at 50)).

Even if the Fish and Wildlife Service had adequately explained its reliance on the models, it is hard to see how these models satisfy the agency's burden to evaluate the environmental baseline within the action area. Both models are general population-level models. The 2016 logperch model was designed to calculate minimum viable population size and related extinction risk for each of the seven logperch populations writ large. It was not designed to assess environmental characteristics and conditions at a smaller scale. Similarly, the 2018 darter model was created to evaluate the current and future conditions and "resiliency" of individual populations and subpopulations. J.A. 1446. So, it is also not well suited for evaluating conditions at the level of the action area here.

Sensing this disconnect, the Fish and Wildlife Service attempts to paper over this difference in scope by suggesting that these studies reflect the "impacts of past and ongoing stressors in the action area *because the action area is within the watersheds* occupied by those populations." Response Br. at 16–17 (emphasis added). In effect, the Fish and Wildlife Service is saying conditions within the action area must be the same as conditions within the larger watershed because the former is located within the latter. That is pure speculation; it is like saying that economic conditions in Kansas are the same as those within the United States as a whole because the former is located within the latter. Though these models are certainly *relevant* predictors of conditions within the action area, because they were calculated at a different level of generality, the Fish and Wildlife Service must at least explain why it believes these population-level models reflect conditions within the action area. *See* 50 C.F.R. § 402.02 (explaining the environmental baseline analysis must assess "the condition of the listed species or its designated critical habitat *in the action area*" (emphasis added)). The failure to do so here was arbitrary and capricious.

Instead of acknowledging that its models may be imperfect, the Fish and Wildlife Service argues the opposite, claiming they account for "*all* potential stressors" and "*everything* that has led to the current status of the affected populations." Response Br. at 19, 23 (emphasis added). But these models simply do not do what the agency claims. For example, the "relatively simple" logperch model included just a few factors: initial population size, population growth, environmental stochasticity, and certain catastrophe and augmentation regimes. J.A. 1614; *see* J.A. 1614–18. However, only fish kills from anthropogenic discharges—like a chemical spill—counted as "catastrophes." J.A. 1617.

The study explicitly excluded "floods and droughts" as catastrophes and did not consider impacts from "non-point runoff, channelization, impoundments, impediments, and siltation"—even though the BiOp labeled these as the "[p]rimary causes of [logperch] habitat degradation." J.A. 48, 72–73. Nor did it consider any sublethal effects or changes in habitat conditions. Thus, the Fish and Wildlife Service's claim that this model accounts for "*everything*" impacting the logperch is not supported by the record.

Similar concerns plague the candy darter model. This "semiquantitative" model considered eight factors, including water quality and forest cover. J.A. 1478–80. In 2018, the Fish and Wildlife Service—which developed the model—forthrightly acknowledged that "there is uncertainty associated with this model and some of the supporting data." J.A. 1446; *see also* J.A. 1432 (noting "darter demographic and genetic data" used to build out the model "are sparse"). Fast forward three years and the agency now claims that this limited model folds in the impacts of "*all* potential stressors," including, for example, the limestone mine. Response Br. at 23 (emphasis added). But as Petitioners point out, the mine apparently threatens the Stony Creek darters with *dewatering*, not just impacts to water chemistry. The Fish and Wildlife Service never explains how its limited model accounts for these impacts. Nor does the agency explain how the model folds in the impacts of other recognized causes of habitat degradation, including impoundments, channelization, and urbanization. Thus, despite the agency's assurances, the darter model does not implicitly account for "*all* potential stressors" on the species.

In sum, the Fish and Wildlife Service failed to adequately evaluate the "effects of past and ongoing human and natural factors leading to the current status of the species" in

the action area. Consultation Handbook at 4-22. Though it advances numerous post hoc rationalizations to show it evaluated these factors, they are both impermissible and unpersuasive.

ii.

Next, we assess whether the Fish and Wildlife Service properly evaluated cumulative effects—"those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area," 50 C.F.R. § 402.02—impacting the Roanoke logperch and candy darter. We conclude it did not.

The Fish and Wildlife Service's ostensive cumulative effects analysis—for all five studied species—is less than a page. It references a list of six future non-Federal projects described in Mountain Valley's 2020 Supplement to its Biological Assessment. This list was "compiled from publicly available Construction Stormwater permits in West Virginia and Virginia." J.A. 567. The Fish and Wildlife Service dismisses four of these six projects as ongoing or completed, and thus already accounted for in the environmental baseline. It then disregards the two remaining projects because it "could find no available information" on one and "there are no anticipated impacts on listed species" for the other. J.A. 141.

The Fish and Wildlife Service and Mountain Valley do not argue that this analysis, standing alone, is sufficient. Nor could they. Documents in the record—including FERC's 2017 Environmental Impact Statement—suggest that the action area is likely to be impacted by numerous non-Federal activities, including oil and gas extraction, mining, logging, water withdrawals, agricultural activities, road improvement, urbanization, and

anthropogenic discharges.[12] None of these future impacts are expressly addressed in the BiOp or in documents that it relies on. Rather, the Fish and Wildlife Service and Mountain Valley argue once more that they were implicitly evaluated when the agency incorporated the logperch and darter models' projections.

For reasons similar to those explained above, we reject this argument. To wit, the Fish and Wildlife Service did not say it was relying on these models to account for cumulative impacts in the BiOp; this appears to be a post hoc rationalization. To be sure, we must "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286 (1974). But we fail to see how the Fish and Wildlife Service's sparse and scattered references to *population-level* analyses of "extinction risk," J.A. 48, or "resiliency," J.A. 53–54, were intended to pass for an evaluation of cumulative impacts within the "action area." Even if they were, these "relatively simple" models fail to include numerous factors that can impact the logperch and darter, J.A. 1614, including those factors discussed above as well as one to which we now turn: climate change.

[12] As noted above, the prior definition of cumulative effects under NEPA is broader than that for the Endangered Species Act. In addition, the Project's NEPA analysis extended far beyond the geographic boundaries of the action area. But the 2017 Environmental Impact Statement is still a helpful starting place to analyze cumulative effects under the Endangered Species Act. *See* Consultation Handbook at 4-31 ("One of the first places to seek cumulative effects information is in documents provided by the action agency such as NEPA analyses for the action.").

iii.

As noted above, it is not clear whether the Fish and Wildlife Service should consider climate change as part of the environmental-baseline analysis, the cumulative-effects analysis, or both. But for our purposes, it makes no difference; the only question is whether the agency properly evaluated it at all. We conclude it did not.

In total, the BiOp spends one sentence discussing the impacts of climate change. In its analysis of the environmental baseline for the logperch, the Fish and Wildlife Service notes that "[c]limate change is an increasing threat to [logperch] with storm events increasing in frequency and intensity, resulting in increased periods of higher water volume, flow rates, and turbidity that affect the [logperch]'s abilities to forage, shelter, and reproduce." J.A. 49. And though other documents in the record suggest climate change poses a "persistent threat" to the candy darter, J.A. 721, the Fish and Wildlife Service never mentions climate change in connection with the darter in the BiOp itself.

Perhaps wisely, neither the Fish and Wildlife Service nor Mountain Valley argue this is a sufficient analysis. *Irving*, 221 F. Supp. 3d at 1233–34 (finding a "general[]" discussion of the effects of climate change insufficient when other documents in the record hinted at climate impacts within the action area). Rather, they argue that it was not necessary to specifically address climate change since the logperch and darter models implicitly account for potential climate impacts.[13] But once again, the Fish and Wildlife

[13] Mountain Valley also argues that the impacts of climate change were extensively discussed in the candy darter's 2018 Species Status Assessment, which is included in the record. Though the Fish and Wildlife Service may rely on documents in the record to

Service never explained in the BiOp that it was relying on these models to account for the effects of climate change. Thus, these are impermissible post hoc rationalizations. *Dow AgroSciences*, 707 F.3d at 467–68.

Even if the Fish and Wildlife Service had articulated its modeling rationale when it issued the BiOp, we would find that evaluation arbitrary and capricious. To start, the 2016 logperch study did not even *mention*—much less fully account for—climate change. Nonetheless, the agency and Mountain Valley claim that the model's inclusion of "environmental stochasticity" (defined as "unpredictable fluctuations in environmental conditions") means the study—and thus the BiOp—necessarily considered climate change. Response Br. at 19; *see* Intervenor's Br. at 28–29 (same). Yet the BiOp makes no such claim. This argument thus stacks one post hoc rationalization upon another (that the Fish and Wildlife Service relied on the logperch model to account for the effects of climate change).

At any rate, "environmental stochasticity" and climate change are not synonymous. In the study, this stochasticity factor captured the difference between predicted and actual population growth for a single test population—the seemingly random departures from the model. The study assumed these differences were due to the "environment" writ large,

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support its evaluation of climate change, there is no evidence it did so here. Since "the climate change issue was not meaningfully discussed in the biological opinion, . . . it [is] impossible to determine whether the information [in the Status Assessment] was rationally discounted . . . or arbitrarily ignored." *Nat. Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 369 (E.D. Cal. 2007). And we "may not supply a reasoned basis for the agency's action that the agency itself has not given." *State Farm*, 463 U.S. at 43 (citing *SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947)).

rather than, say, errors in estimating actual population size—which it acknowledged was a "tenuous assumption." J.A. 1617. Critically, the study then assumed a "constant" amount of environmental stochasticity for each model run for every population. J.A. 1614. But as the Fish and Wildlife Service itself acknowledged, climate change is expected to be an "increasing threat"—not a constant one. J.A. 49. Thus, even if random departures from a simplistic model could be chalked up to "climate change," the model failed to account for the one thing we know about climate change: that it will get worse over time. *Cf. Pac. Coast Fed'n of Fishermen's Ass'ns v. Gutierrez*, 606 F. Supp. 2d 1122, 1184 (E.D. Cal. 2008) (finding a biological opinion failed to consider the increasing effects of climate change by relying "on past hydrology and temperature models" that assumed constant environmental conditions).

A similarly arbitrary assumption undergirds the Fish and Wildlife Service's reliance on the darter model. That model incorporated multiple elements, including "forest cover." As the agency notes, forest cover can mediate the effects of water temperature increases, including increases caused by climate change. Therefore, the agency argues that it implicitly considered the water-warming effects of climate change by incorporating the results of the model into the BiOp. But again, the BiOp is devoid of such an explanation, meaning this is yet another post hoc rationalization layered upon its first post hoc rationalization (that it considered climate change by referencing the darter model). What's more, increases in water temperature are not the only potential impact of climate change. For example, climate change is also expected to increase the frequency and intensity of flooding, and thus sedimentation. Yet there is no evidence that the darter model was

intended to capture these effects, much less capture the "*increasing* threat" posed by climate change. J.A. 49 (emphasis added).

Ultimately, the Fish and Wildlife Service asks us to find that it evaluated the impacts of climate change based on a series of stacked post hoc rationalizations. Yet even if those rationalizations were contemporaneous, we would still find them arbitrary and capricious.

2.

Petitioners next contend—at the third primary step of the biological-opinion process—that the Fish and Wildlife Service failed to incorporate its environmental-baseline and cumulative-effects findings into its jeopardy determinations for the logperch and darter. We agree.

As noted above, the Endangered Species Act requires the Fish and Wildlife Service to "*[a]dd* the effects of the action and cumulative effects to the environmental baseline" when determining whether an action is likely "to reduce appreciably the likelihood of both the survival and recovery of a listed species." 50 C.F.R. §§ 402.02 (defining "jeopardize the continued existence of" as used in § 402.14(g)(4)), 402.14(g)(4) (emphasis added). This step is critical to ensure that the action is not analyzed "in a vacuum." *Nat'l Wildlife Fed'n*, 524 F.3d at 929. Thus, for obvious reasons, "[s]imply reciting the activities and impacts that constitute the baseline [and cumulative effects] and then separately addressing only the impacts of the particular agency action in isolation is not sufficient." *Babbitt*, 130 F. Supp. 2d at 127–28; *see also Am. Rivers v. Fed. Energy Regul. Comm'n*, 895 F.3d 32, 47 (D.C. Cir. 2018) (finding a biological opinion arbitrarily "failed to incorporate the environmental baseline into its jeopardy analysis").

Because the Fish and Wildlife Service failed to properly evaluate the Project's environmental context at step two, its no-jeopardy conclusions for the Roanoke logperch and candy darter at step three—which purport to fold these flawed evaluations into the agency's analysis—are necessarily arbitrary. *See* 50 C.F.R. §§ 402.02, 402.14(g)(4) (requiring the Fish and Wildlife Service to determine whether the proposed action, *considered in its proper context*, "is likely to jeopardize the continued existence of [the] listed species," meaning the action "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of [that] species"). Therefore, we find it unnecessary to further analyze Petitioners' step-three concerns.

On remand, the agency must ensure that it analyzes the Project "against the aggregate effects of everything that has led to the species' current status and, for non-Federal activities, those things [reasonably certain] to affect the species in the future." Consultation Handbook at 4-35. We agree with the Fish and Wildlife Service that this does not mean it must "include the entire environmental baseline [or cumulative effects] *in* the 'agency action' subject to review." Response Br. at 13 (emphasis added) (quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 930). Under our precedent, "an agency action can only jeopardize a species' existence if *that agency action* causes some deterioration in the species' pre-action condition." *Defs. of Wildlife*, 931 F.3d at 353 (emphasis added) (quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 930) (cleaned up). In other words, an agency action cannot be barred *solely* because baseline conditions or cumulative effects already imperil a species. *See Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 807 F.3d 1031, 1052 (9th Cir. 2015).

But we caution that when baseline conditions or cumulative effects *are* "already jeopardiz[ing] a species, an agency may not take action that *deepens* the jeopardy by causing additional harm." *Defs. of Wildlife*, 931 F.3d at 353 (emphasis added) (quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 930 (faulting the Fish and Wildlife Service for the same error)). Put differently, if a species is already speeding toward the extinction cliff, an agency may not press on the gas. We urge the Fish and Wildlife Service to consider this directive carefully while reassessing impacts to the two endangered fish at issue, especially the apparently not-long-for-this-world candy darter.

B.

Though the serious errors described above require us to vacate and remand the 2020 BiOp and Incidental Take Statement, Petitioners also identify other issues in both documents that they claim further support vacatur. For example, Petitioners allege that the Fish and Wildlife Service (1) arbitrarily limited the scope of the action area; (2) erroneously excluded the Blackwater River from its logperch analysis; and (3) crafted "unlawfully vague" incidental take limits for the logperch and darter. Opening Br. at 48. None of these arguments have merit.

1.

Petitioners first critique the Fish and Wildlife Service's calculation of the aquatic action area. To define this action area, the agency used the results of a sedimentation model prepared by Mountain Valley to determine which waterbodies might be impacted by the Project. The Fish and Wildlife Service then expanded the action area to include stream segments 200 meters upstream and 800 meters downstream of (1) waterbodies with an

open-cut crossing; and (2) the confluence of unoccupied but potentially impacted tributaries with species-occupied streams, termed "mixing zones." J.A. 39–40. In its analysis, the agency noted that multiple scientific studies had found that aquatic habitat conditions were unaffected more than 500 meters downstream of pipeline crossings. "To be protective of the" listed species and "address uncertainty" regarding the extent of the sediment plume in mixing zones, J.A. 103–04, the Fish and Wildlife Service "conservatively" defined the action area "as *twice* the maximum 500-meter area documented in the studies, extending from 200 meters above the crossing [or confluence with the unoccupied tributary] to 800 meters below," Response Br. at 29.

Petitioners quibble that an 800-meter downstream limit is arbitrary if the science supports a 500-meter impact area. They also point out that studies assessing impacts from crossings may not be applicable to mixing zones. But we find it hard to fault the Fish and Wildlife Service for conservatively expanding the action area to ensure that it is capturing all possible effects to these imperiled species, or extending the results from pipeline-crossing studies to an analogous context. These are precisely the sort of judgment calls that are entitled to our deference. *Ctr. for Biological Diversity*, 807 F.3d at 1043 ("[T]raditional deference to the agency is at its highest where a court is reviewing an agency action that required a high level of technical expertise.").

Petitioners also argue that "anecdotal" evidence from Dr. Angermeier suggests sediment impacts may extend several kilometers downstream from a crossing. Opening Br. at 51. But the Fish and Wildlife Service was well within its rights to ignore such "anecdotal" evidence and instead rely on numerous published scientific studies to define

the action area. *See Ctr. for Biological Diversity*, 807 F.3d at 1050 (rejecting a claim that the agency ignored the best available science when the petitioners failed to show their concerns "were supported by better science [than] that used in the [BiOp]").

2.

Next, Petitioners contend that the Fish and Wildlife Service failed to justify its exclusion of the Blackwater River from its logperch analysis. All six of the Project's crossings in the Blackwater River drainage contain suitable habitat for the logperch.[14] In general, the agency assumed that logperch were present in waterbodies containing suitable habitat. Therefore, a straightforward application of the agency's own criteria would seem to require the Fish and Wildlife Service to analyze impacts to the logperch within the Blackwater River drainage. However, the agency ultimately decided to exclude the Blackwater River crossings from consideration based on several factors: (1) traditional survey efforts have not documented logperch presence in the watershed; (2) recent environmental DNA ("eDNA") sampling[15] did not detect logperch; and (3) no in-stream work would occur at these crossings during logperch spawning season.

[14] In total, the Project is expected to cross fourteen waterbodies that either contain suitable habitat for the logperch or are "known to support" logperch. J.A. 69.

[15] Though it sounds complex, eDNA sampling is elegantly simple in design. Because fish continually release DNA molecules into the water via sloughed skin, scales, mucus, and feces, scientists can capture and filter water from a stream and scour it for specific species' DNA. These results can help "corroborate or supplement existing information indicating the probable [presence or] absence of a species in [that] area." J.A. 70 n.4.

Petitioners point out that the Blackwater has been traditionally undersampled and that the Fish and Wildlife Service itself acknowledges that eDNA analysis is not a "definitive means for determining presence/probable absence." J.A. 70 n.4. They also note that time-of-year restrictions do not protect logperch from upland disturbances associated with the Project or the long-term impacts from open-cut stream crossings. While Petitioners' individual critiques of each factor cited by the agency have some persuasive heft, Petitioners do not identify anything in the record that shows logperch *are* in fact present in the Blackwater River drainage. Nor do Petitioners account for how these three factors interact synergistically. Given the absence of contrary evidence, when we consider these factors *together*, we have little trouble concluding that the Fish and Wildlife Service "provided a [sufficiently] cogent justification" for excluding the Blackwater River watershed from further study.[16] *Am. Whitewater v. Tidwell*, 770 F.3d 1108, 1116 (4th Cir. 2014).

[16] While the agency properly justified excluding the Blackwater River drainage from its analysis, we are concerned that it did not fully follow through on that assessment. To wit, though the Fish and Wildlife Service purported to exclude the Blackwater River drainage from its jeopardy analysis, it later relied on suitable habitat in the Blackwater watershed for one of the calculations supporting its recovery analysis.

Specifically, the Fish and Wildlife Service found no impacts to logperch recovery were likely in part because "[t]he amount of habitat to be impacted is minor (0.9%) compared to the overall amount of [logperch] habitat available in [Virginia]." J.A. 149. But this "overall amount" of suitable habitat includes stream miles in the Blackwater River drainage. As Petitioners point out, this means the agency excluded the Blackwater from the numerator—the "amount of habitat to be impacted"—but added it to the denominator—the "overall amount" of suitable habitat in Virginia. This sounds like the agency is trying to have it both ways. And it seems problematic to exclude an entire watershed from analysis

3.

Petitioners also contend that the incidental take limits for the logperch and darter are too "vague" to be enforceable. Opening Br. at 46. As noted above, an incidental take statement must specify the "amount or extent" of incidental take. Typically, this requires the Fish and Wildlife Service to identify the number of individual animals subject to take. *See* 50 C.F.R. § 402.14(i)(1). However, a "surrogate"—such as "[a] similarly affected species or habitat or ecological conditions"—may be used if the biological opinion: (1) describes "the causal link between the surrogate and take of the listed species"; (2) explains "why it is not practical to express the amount or extent of anticipated take or to monitor take-related impacts in terms of individuals of the listed species"; and (3) "sets a *clear standard* for determining when the level of anticipated take has been exceeded." *Id.* § 402.14(i)(1)(i) (emphasis added). Here, because the Fish and Wildlife Service determined that an individual-based limit was impractical for the logperch and darter, it crafted take thresholds based on a sediment-concentration surrogate.

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because no logperch are present then add that watershed back into the analysis to artificially lower the percentage of habitat impacted.

Because we already concluded that the Fish and Wildlife Service's jeopardy analysis—including its recovery assessment for the logperch—is arbitrary and capricious, we find it unnecessary to further analyze this potential "having it both ways" scenario. But we encourage the agency to explain this discrepancy on remand if it intends to continue adding the Blackwater River to the denominator in its recovery calculations.

Petitioners argue that this standard isn't "clear."[17] Specifically, they contend that (1) it is ambiguous whether Mountain Valley must be solely responsible for an exceedance, and (2) it is unclear how any exceedance will be attributed to Mountain Valley as opposed to some other source. Both arguments are nonstarters.

To start, the Incidental Take Statement explicitly—and repeatedly—states that its sediment-concentration thresholds are tied to "*[P]roject*-related" sediment releases. J.A. 169, 173 (emphasis added). It also provides that take only occurs when downstream sediment concentrations reach certain levels "above *background*." J.A. 169, 173 (emphasis added). Thus, Mountain Valley must be solely responsible for exceeding these take thresholds.

Mountain Valley's monitoring plan[18] also provides a clear mechanism for determining responsibility for an exceedance. Specifically, Mountain Valley has installed

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[17] Petitioners also argue that the agency's chosen surrogate—a "continuous" sediment-concentration threshold—was an arbitrary policy change from a framework used to measure anticipated take of bull trout in Washington State. We fail to see how a surrogate framework for a different species in a different state prepared by a different field office is a "policy or practice" that the Fish and Wildlife Service's Virginia Field Office is bound to explain its departure from. Reply Br. at 16. Even if it was a policy change, the agency explained that its new, "continuous" threshold is more consistent with the published scientific study underlying the bull-trout framework than the surrogate used in Washington State was. Nevertheless, to avoid further confusion, we encourage the agency to expound upon the reasons for its departure from the bull-trout framework on remand.

[18] Petitioners also criticize the monitoring plan for failing to include monitoring stations in streams where the agency's adopted sediment model did not predict sediment increases. However, Petitioners do not identify any fundamental flaws with this model—in fact, they identify no flaws at all. Rather, Petitioners note that there is a "degree of uncertainty associated with [Mountain Valley's] modeling." Opening Br. at 48. But uncertainty is inherent in any model. And since Petitioners failed to establish that the

monitoring stations above and below the action area (and even some within the action area) to determine the background concentration entering the area and the concentration leaving it. Whenever these stations register a potential exceedance, Mountain Valley is required to alert FERC and the Fish and Wildlife Service; conduct an inspection of the affected stream, monitoring equipment, and nearby erosion-and-sedimentation controls; identify potential non-Project sources of sedimentation; "make a preliminary determination of whether Project-related sediment in fact caused [an exceedance]"; and report all findings to the federal agencies. J.A. 341–45.

Petitioners complain that this gives "too much latitude" to Mountain Valley to decide whether an exceedance was Project related. Opening Br. at 47. But under the monitoring plan, it is the federal agencies that are responsible for making the ultimate determination regarding responsibility for an exceedance, not Mountain Valley. *See* J.A. 371–72 (noting the information reported by Mountain Valley, "along with the preliminary causation assessment that Mountain Valley is required to provide," allow the Fish and Wildlife Service "to *independently* determine whether any such exceedance is attributable to the [P]roject, and, if so, to request that FERC immediately reinitiate Section 7

"model bears no rational relationship to the [situation] to which it is applied," we must defer to the agency's choice of model. *San Luis & Delta-Mendota Water Auth. v. Locke*, 776 F.3d 971, 994 (9th Cir. 2014) (citation omitted).

The model here predicted no impacts to the various additional stream segments identified by Petitioners in their brief. Since Endangered Species Act regulations only require monitoring where take is expected to occur, *see* 50 C.F.R. § 402.14(i)(3) (requiring the action agency "to monitor the impacts of incidental take"), the agency did not err by refusing to require Mountain Valley to monitor these additional locations.

consultation" (emphasis added)). Petitioners counter that this still allows Mountain Valley "to select *which* facts surrounding an exceedance to present to the agencies." Reply Br. at 26 (emphasis added) (internal quotation marks omitted). If Petitioners are hinting that Mountain Valley cannot be trusted to accurately report the facts surrounding an exceedance, we reject that implication. Because the monitoring plan provides a "clear" mechanism for assessing responsibility for an exceedance, as well as a clear chain of command, we find the Fish and Wildlife Service's selected take surrogate appropriate.

III.

While Petitioners' more minor challenges lack merit, the serious errors detailed above at steps two and three of the jeopardy analysis render the 2020 BiOp arbitrary and capricious. We recognize that this decision will further delay the completion of an already mostly finished Pipeline, but the Endangered Species Act's directive to federal agencies could not be clearer: "halt and reverse the trend toward species extinction, whatever the cost." *Tenn. Valley Auth.*, 437 U.S. at 184. On remand, the Fish and Wildlife Service should consider this mandate carefully, especially given the precarious state of the candy darter.

"We have not addressed all of the [Petitioners'] complaints because, on remand, they can be aired and addressed in the renewed agency process." *Dow AgroSciences*, 707 F.3d at 475. At this point, we find it sufficient to vacate the 2020 BiOp and Incidental Take Statement and require the Fish and Wildlife Service "to address not only the flaws we identified but also any additional matters that may be raised on remand." *Id.*

VACATED AND REMANDED