EARTHJUSTICE

June 11, 2024

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cc:

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Pinto Valley Mine
Capstone Copper
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VIA CERTIFIED U.S. MAIL RETURN RECEIPT REQUESTED

Re: 60-day notice of violations of the Endangered Species Act related to the August 19, 2021 approval of Pinto Valley Mine operation and expansion

* * *

Dear Mr. Bosworth, and Mr. Humphrey:

On behalf of the Grand Canyon Chapter of the Sierra Club and Maricopa Audubon Society, we hereby provide notice in accordance with the citizen suit provision of the Endangered Species Act ("ESA"), 16 U.S.C. § 1540(g), that you are in violation of Section 7 of the ESA, *id.* § 1536.

In its August 19, 2021 Record of Decision, the Tonto National Forest ("Forest") approved a mining plan of operations that allows Pinto Valley Mine ("PVM") to expand and continue operating through 2039. In reaching that decision, the Forest prepared a biological assessment ("BA") on July 16, 2020, which found, among other things, that the mine's expansion and operations were likely to adversely affect the western yellow-billed cuckoo, not likely to destroy or adversely modify the cuckoo's critical habitat, and not likely to adversely affect the southwestern willow flycatcher. The Fish and Wildlife Service ("Service") prepared a biological opinion ("BiOp") on August 4, 2020 (AESO/SE 02EAAZ00-2020-F-0490), concluding that the mine was not likely to jeopardize the western yellow-billed cuckoo, destroy or adversely modify its critical habitat, or adversely affect the southwestern willow flycatcher. In short, the agencies concluded that the mine could expand and continue operating without harming the cuckoo, flycatcher, or critical habitat.

The Forest and Service committed three legal errors in reaching those conclusions. First, the Forest's BA and the Service's BiOp unlawfully omitted key portions of the species' habitat from consideration by defining the "action area" to exclude a perennial reach of Pinto Creek that will be dewatered by the mine's groundwater pumping. Second, the agencies relied on vague, speculative, and unenforceable mitigation measures that do not ensure the species' survival and recovery. Finally, the agencies failed to consider the mine's effects on listed species in combination with the harmful effects of ongoing and increasingly severe climate change.

If you do not remedy these ESA violations within 60 days, we intend to seek redress through litigation. *See id.* § 1540(g)(2)(A)(i).[1]

I. Background

A. The Endangered Species Act

The ESA is "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). Its purpose is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." 16 U.S.C. § 1531(b).

Section 7 of the ESA requires each federal agency to ensure that its actions are "not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. *Id.* § 1536(a)(2); *see also id.* § 1532(5) (defining "critical habitat"). In particular, section 7 provides that a federal agency proposing an action must (1) enlist the Service's help to identify listed species that may be present in the relevant area; if any are, (2) conduct a biological assessment to determine whether any listed species are "likely to be affected" by the action; and, if so, (3) enter into formal consultation with the Service. *Id.* § 1536(c)(1); 50 C.F.R § 402.14(a).

The formal consultation process culminates in the issuance of a biological opinion. Among other things, the biological opinion must provide the Service's opinion as to whether the action is likely to jeopardize the continued existence or recovery of a listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R § 402.14(h)(1). The biological opinion must

[1] Although our claims against the Service arise under the Administrative Procedure Act ("APA"), our claims against the Forest—including its arbitrary and capricious reliance on the facially flawed BiOp—arise under the ESA's citizen-suit provision. *See, e.g.*, *Washington Toxics Coal. v. EPA*, 413 F.3d 1024, 1034 (9th Cir. 2005) ("[S]uits to compel agencies to comply with the substantive provisions of the ESA arise under the ESA citizen suit provision, and not the APA."), *abrogated on other grounds as recognized in Cottonwood Env't L. Ctr. v. U.S. Forest Serv.*, 789 F.3d 1075, 1089 (9th Cir. 2015).

evaluate the effects of the action and cumulative effects on listed species and critical habitat, considering both survival and recovery. *See* 50 C.F.R §§ 402.14(g)(3), 402.02 (defining "jeopardize"); *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988). In fulfilling the consultation requirements of the ESA, both the Service and the Forest must use the best scientific data available. 16 U.S.C. § 1536(a)(2).

Regardless of the conclusions reached in the biological opinion, the action agency—here, the Forest—has an independent duty to ensure that its actions will not jeopardize listed species or result in the destruction or adverse modification of designated critical habitat. *Id.*

B. Pinto Creek and Pinto Valley Mine

Pinto Creek is a stream in Arizona that provides invaluable riparian habitat for fish and wildlife in a semi-arid desert within the Tonto National Forest. The creek runs 28 miles northward from the Pinal Mountains through the Sonoran Desert before emptying into Lake Roosevelt. This vital stream "has been listed by the American Rivers Organization as one of the country's most endangered rivers due to threats from proposed mining operations." *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1009 (9th Cir. 2007) (holding EPA mine pollution discharge permit violated federal Clean Water Act).

Pinto Creek and its riparian habitat sustain a variety of fish and wildlife, including the threatened western yellow-billed cuckoo and endangered southwestern willow flycatcher. Pinto Creek is also an important stopover area for these and other migratory birds on their way to nearby Lake Roosevelt and other locations.

The Pinto Valley Mine began operations in 1974. Mining activities in the succeeding decades have relied on groundwater[2] withdrawn from the Pinto Creek watershed via the "Peak Well" field and then transported to the rest of the mine site via pipelines crossing public lands on the Tonto National Forest. On average, the mine uses 9,722 gallons per minute, or approximately 15,682 acre-feet of water per year.

From 1998 through 2012, Pinto Creek flowed continuously, as measured a short distance below the Peak Well field. In fact, the United States Geological Survey recorded measurable streamflow every single day during this 15-year period. However, water flows and the health of Pinto Creek and its surrounding riparian ecosystem dramatically worsened in 2013. Only three months after the Capstone Copper Corporation acquired the Pinto Valley Mine, the creek's previously

[2] Here and throughout this letter, the term "groundwater" is used colloquially, referring to water below the surface of the ground. More technically, the mine's pumping removes "subflow," which, under Arizona water law, is a component of surface water.

measured surface flows abruptly stopped, dropping to zero for the first time in December 2013. Diminished flows have continued, with many months showing no flows in the perennial reach of the stream at all. *See* Pinto Valley Mine Final Environmental Impact Statement (April 2021) ("FEIS") Table 3-127.

The drawdown of surface flows at Pinto Creek has progressively worsened because of the mine's operations. The primary culprit is a reduction in "baseflows"—the movement of subsurface water into the creek that, combined with precipitation and surface runoff, keeps the stream flowing. The FEIS shows that the mine's groundwater pumping has "substantially reduced" baseflows into Pinto Creek, reducing it from 1,070 gallons per minute at the start of 2013 to just 188 gallons per minute at the end of 2018—an 82 percent reduction. FEIS at 3-450–51. This dewatering of Pinto Creek is devastating the fragile riparian habitat the creek supports.

Pinto Creek would have begun recovering from these effects if the mine had stopped operating when its prior right-of-way authorizations and special use permits expired between 2007 and 2017. However, the mine continued operating, and, in 2016, PVM submitted to the Forest Service a new mining plan of operations proposing to extend the life of the Pinto Valley Mine by 19 years (2020 to 2039), with closure and reclamation activities lasting for an additional 12 years. Without this extension and expansion, the mine would have been required to cease operations and commence reclamation activities "almost immediately," meaning within approximately 6 months of the Forest's decision. *E.g.*, FEIS at ES-5. But instead, the Forest approved the plan in an August 2021 record of decision ("ROD").

As a result, mine operations will continue for 19 additional years, delaying Pinto Creek's recovery from the devastating baseflow reductions that have already occurred. If the agency had denied or substantially altered PVM's plan, baseflows in Pinto Creek could have rebounded to over 1,000 gallons per minute and remained over 800 gallons per minute through 2039; whereas baseflows under the approved expansion plan will remain well under 200 gallons per minute during the same period. FEIS 3-459 (Figure 3-21). In other words, the mine's continued operation is suppressing baseflows by over 80 percent and will do so through 2039.

Thus, as a result of the Forest's approval, the ecologically invaluable segments of Pinto Creek that previously flowed year-round will flow at a greatly reduced rate (or not at all) for almost two decades longer than if the extension and expansion had not been approved.

C. The agencies' Section 7 consultation

The Forest consulted with the Service to make that approval. On June 16, 2019, the Forest submitted a document to the Service that identified five species and one critical habitat to be evaluated under Section 7: the western yellow-billed cuckoo

(and proposed critical habitat), southwestern willow flycatcher, Arizona hedgehog cactus, Gila topminnow, and ocelot. On August 21, 2019, the Service responded with a letter approving the list of species to be included in the Forest's BA.

The Forest submitted a draft BA to the Service on February 18, 2020, along with a request for formal consultation. The formal consultation request was based on the BA's determination that approving the mine's operations "may affect, [and is] likely to adversely affect" the yellow-billed cuckoo and its proposed critical habitat. The agencies also initiated informal consultation based on the Forest's determination of "may affect, not likely to adversely affect" for the Arizona hedgehog cactus and the southwestern willow flycatcher and its designated critical habitat. The BA found the action would not affect the ocelot or Gila topminnow.

The agencies held a series of teleconferences in March and April 2020. As a result of those conversations, the Forest revised the BA to, among other things, revise the action area; refine proposed mitigation measures; change the determination for the ocelot to "may affect, not likely to adversely affect"; and remove southwestern willow flycatcher critical habitat from the analysis.

On July 16, 2020, the Forest reached the following conclusions in its final BA:

Species	**Determination**
Ocelot	May affect, not likely to adversely affect
Arizona hedgehog cactus	May affect, not likely to adversely affect
Southwestern willow flycatcher	May affect, not likely to adversely affect
Western yellow-billed cuckoo Proposed critical habitat for western yellow-billed cuckoo	May affect, likely to adversely affect Not likely to result in destruction or adverse modification
Gila topminnow	No effect

BA at 7, Table ES.1.[3]

Between May and July 2020, the agencies conferred back and forth regarding the Service's draft BiOp. On August 4, 2020, the Service issued its BiOp, concurring with the BA's "not likely to adversely affect" determinations for the ocelot, Arizona hedgehog cactus, and southwestern willow flycatcher, and it noted that no review was required for the Gila topminnow "no effect" determination. BiOp at 1. The BiOp also determined that the mine's operations were not likely to jeopardize the

[3] Our copy of the BA lacks page numbers, so our citations to it use PDF pagination.

cuckoo or adversely modify or destroy its critical habitat. *Id.* at 24–25. It issued an Incidental Take Statement providing that the Fish and Wildlife Service "d[id] not anticipate the proposed action will incidentally take any western yellow-billed cuckoos." *Id.* at 25–26.

The Forest published a draft EIS evaluating the proposal under NEPA on December 13, 2019, followed by a final EIS and draft ROD released on April 9, 2021. It issued a final ROD approving PVM's proposed plan of operation on August 19, 2021.

II. The Service's BiOp, and the Forest's BA and approval of the mining plan of operations, violate the ESA.

The BA and BiOp—and the Forest's reliance on these documents in its approval of the expanded and continued operation of the mine and its related permits—violate the ESA by failing to account for the mine's massive groundwater withdrawals. The agencies knew that the proposed plan of operations would allow the mine to use approximately 15,682 acre-feet of water per year, including 2,536 acre-feet of fresh water. BiOp at 6. And they acknowledged that the "primary source" of fresh water is the Peak Well field, *id.* at 16, which sits "along and west of Pinto Creek" and extracts on average 3,500 gallons of water per minute, *id.* at 6.

The BiOp also determined that the mine's groundwater pumping has already significantly reduced baseflows into Pinto Creek—the "main watershed in the action area." *Id.* at 15. For example, the BiOp notes that, "from 2013–2018, Pinto Creek baseflow was substantially reduced from an initial rate of 1,070 gallons per minute to 188 gallons per minute," marking "an 82 percent reduction." *Id.* at 16; *see also, e.g.*, BA at 14. These baseflow reductions matter because "groundwater discharge sustains flows during the low-flow period[s]" in Pinto Creek's perennial reaches. BiOp at 16; *see also* BA at 11 ("Perennial flows within Pinto Creek during . . . low-flow period[s] are sustained entirely by discharge from the groundwater system."). With the duration of pumping extended by 19 years under the mine-plan approval,[4] the reductions in baseflow and surface flow—and associated destruction of riparian habitat—will continue well into the future. *E.g.*, BA at 53 (noting that continued pumping will "delay[] recovery of affected riparian vegetation").

Nonetheless, the BiOp concluded that the mine's intensive groundwater pumping will not jeopardize the western yellow-billed cuckoo or adversely modify its

[4] The BiOp and BA wrongly assumed that the proposed action would extend the mine's life by only 12 years rather than 19. *Compare, e.g.*, BiOp at 3, 4 *and* BA at 6 *with* FEIS at ES-1 *and* ROD at 4. The ESA and NEPA documents all provide that the mine would operate until 2039 under the proposed action. The inconsistency stems from the BiOp and BA's incorrect assumption that, without approval, operations would continue "through 2027," BiOp at 4, when in reality the mine would have been required to cease operations "almost immediately," FEIS at ES-5.

(riparian) critical habitat. And it concurred with the Forest's conclusion that this pumping will not adversely affect the southwestern willow flycatcher, which likewise relies on riparian habitat.

These determinations were erroneous for three reasons. First, the agencies restricted the action area to exclude most of Pinto Creek downstream of the Peak Well field, omitting a significant amount of impacted riparian habitat from their analysis. Second, the agencies relied on vague, speculative, and unenforceable mitigation measures that require the mine to do no more than conduct occasional surveys and monitoring. Finally, the agencies failed to evaluate the effects of the mine's pumping in combination with ever-worsening climate change.

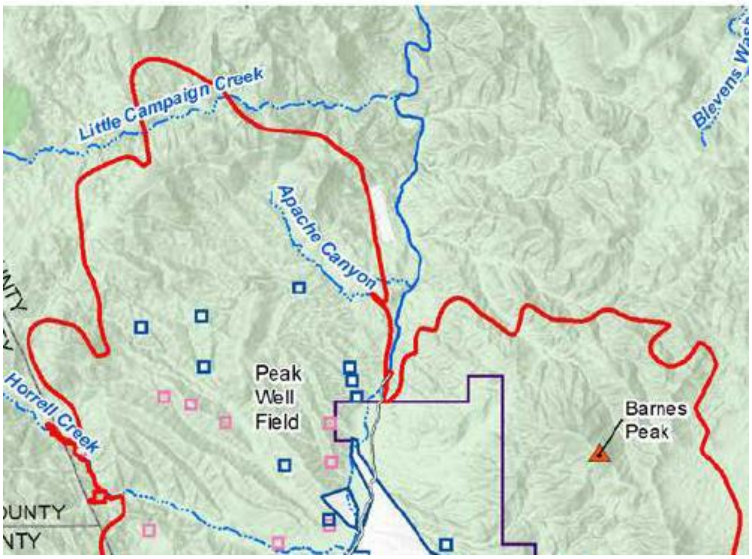
A. The BA and BiOp erroneously excluded affected reaches of Pinto Creek from the action area.

Under the ESA, the Forest and Service must analyze the "effects of the action"—meaning "all consequences to listed species or critical habitat"—as well as the "cumulative effects" on listed species or critical habitat. 50 C.F.R. §§ 402.02, 402.14(c), 402.14(g). In other words, the BiOp must consider "all the impacts" that could result from the mine's proposed plan of operations "using the best available science." *Ctr. for Bio. Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1156 (D. Ariz. 2002).

As part of that requirement, the BA and BiOp must properly define the "action area" of the project where anticipated effects will occur. The action area must encompass "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 C.F.R. § 402.02. To enable a reviewing court to determine whether an action area was properly defined, "[t]he agency must explain the 'scientific methodology, relevant facts, or rational connections linking the project's potential impacts' to the action area boundaries." *Nw. Env't Def. Ctr. v. Nat'l Marine Fisheries Serv.*, 647 F. Supp. 2d 1221, 1230 (D. Or. 2009) (quoting *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 902 (9th Cir. 2002)); *see also, e.g.*, *Pac. Coast Fed'n of Fishermen's Ass'n, Inc. v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1034 (9th Cir. 2001).

The BA and BiOp fail this standard. The action area is limited to "the area subject to groundwater drawdown of five feet or greater as modeled by SRK Consulting, Inc. (2019a)." BA at 29–30; *see* BiOp at 11, 34. According to the BiOp, this area includes "the farthest-reaching" effects of the action, including all areas "affected by water extraction." BiOp at 11. But the mine's groundwater pumping will dewater downstream reaches of Pinto Creek excluded from the action area. Specifically, the action area includes just 0.7 miles of "Pinto Creek North," a unit of yellow-billed cuckoo designated critical habitat that runs along Pinto Creek, and excludes the remaining 5.3 miles of that unit. *Id.* at 18. The mine's significant diminution of baseflows *at* the Magma Weir (just downstream of the Peak Well field) will affect

the reaches of Pinto Creek downstream of the weir, including the 5.3 miles of Pinto Creek North excluded from the action area. That reach is shown (in blue), running north from the action area (in red), in the upper middle of the image below:



Id. at 34 (Figure 1, cropped).

Indeed, the BiOp acknowledges that the mine's pumping has *already* dewatered portions of Pinto Creek outside the action area. For example, it notes that researchers discovered "abnormally high tree mortality" and "replacement of pool habitat by riffles and glides" along Pinto Creek downstream of the mine after PVM renewed groundwater pumping in 2013. BiOp at 16–17. The BA describes similar findings and explains that "this area is mostly located beyond the northern boundary of the action area." BA at 13.

Despite this known effect, the BA and BiOp do not explain why the downstream reaches of Pinto Creek—the "main drainage within the action area," BiOp at 15—were excluded. Instead, they arbitrarily and capriciously cut off the action area where baseflow reductions were *measured*, with no regard for downstream consequences.

This misstep violates the ESA in and of itself. *See Native Ecosystems Council*, 304 F.3d at 902 (finding Forest Service violated the ESA by limiting action area to preexisting "Bear Management Subunit" without "consider[ing] which areas would actually be affected by" a timber sale). It also undermines the BiOp's findings that (1) the mine's operations would not jeopardize the yellow-billed cuckoo; (2) the mine

will not destroy or adversely modify yellow-billed cuckoo critical habitat; and (3) the mine is not likely to adversely affect the southwestern willow flycatcher.[5]

1. Yellow-billed cuckoo

The Service reached its no-jeopardy conclusion based primarily on its finding that no cuckoos breed within the action area. BiOp at 19, 25. However, Pinto Creek North—the unit of critical habitat immediately downstream of the action area—is "consistently occupied by western yellow-billed cuckoos during the breeding season." BA at 45–46; *see also* Revised Designation of Critical Habitat for the Western Yellow-billed Cuckoo, 85 Fed. Reg. 11,458, 11,487 (Feb. 27, 2020) (finding Pinto Creek North "is used by the western yellow-billed cuckoo during the breeding season").

Thus, the improperly constrained action area undercuts a biological finding central to the no-jeopardy conclusion. This unexplained error renders the BiOp arbitrary, capricious, and unlawful.

2. Yellow-billed cuckoo critical habitat

The mis-defined action area undermines the critical habitat analysis too. The Service did not dispute that the mine will harm the cuckoo's habitat. To the contrary, it determined that the mine's pumping will "adversely affect[] approximately 308 acres of proposed cuckoo critical habitat" due to dewatering. BiOp at 21–22. But it concluded that this effect was insignificant because 308 acres is "0.06 percent" of the species' total critical habitat and "4.3 percent" of the critical habitat in Tonto Basin. *Id.* at 23, 25.

That reasoning ignores the true scope of impacts by overlooking the 373 acres of Pinto Creek North that were arbitrarily omitted from the action area. *See id.* at 18 (noting 54 acres of Pinto Creek North are in action area); 85 Fed. Reg. at 11,487 (providing that Pinto Creek North is 427 acres total). Because *all* of Pinto Creek North will be affected by the mine's pumping, the amount of critical habitat adversely affected is more than double what FWS evaluated: 681 acres (308 + 373), representing 9.7 percent of the species' critical habitat in Tonto Basin.

Moreover, the Service identified Pinto Creek North as part of "the core area" for the agency's "conservation strategy" in designating critical habitat. 85 Fed. Reg. at 11,487. Thus, the BiOp overlooked destruction of *highly* critical habitat,

[5] The arbitrarily constrained action undermines the Forest's analysis too, starting with the initial species screening that was conducted only "within the action area." BA at 31. The Forest should restart its ESA process by conducting an initial screen within *all* areas that the mine may affect, including the downstream reaches of Pinto Creek previously excluded from the action area.

undermining its determination that the proposed action would not "appreciably diminish[] the conservation role of proposed critical habitat." BiOp at 25; *see* 50 C.F.R. § 402.02 (defining "[d]estruction or adverse modification").[6]

3. Southwestern willow flycatcher

The flawed action area also undermines the BiOp's conclusion that the mine is not likely to adversely affect the southwestern willow flycatcher. Concurring with the Forest's determination, the Service found that the mine would not "cause any effects to breeding flycatchers" because breeding flycatchers have not been recently detected along Pinto Creek. BiOp at 33; *see* BA at 38–40. However, even though "no potential southwestern willow flycatcher breeding habitat was [modeled to be] present within the action area," there are "[n]ine patches of potential breeding habitat . . . just downstream of the action area." BA at 41. The BiOp did not consider whether impacts to this breeding habitat might affect species survival—or, critically, its *recovery*—because the habitat was arbitrarily excluded from analysis.

Moreover, the excluded portion of Pinto Creek "provides a direct south-north [migration] corridor to known [flycatcher] breeding sites along Roosevelt Lake." BA at 41. The BiOp found that "any reduction in riparian habitat quality along Pinto Creek will be an insignificant effect to migrating flycatchers because of their ability to move freely and take advantage of a wider diversity and quality of habitat." BiOp at 33. But this analysis is confined to the action area—overlooking potentially significant effects stemming from dewatering of additional habitat in Pinto Creek's downstream reaches.

In sum, the cuckoo no-jeopardy determination, the cuckoo critical habitat determination, and the flycatcher concurrence are all flawed due to the improperly defined action area. This error renders the BiOp arbitrary and capricious, and it was likewise arbitrary and capricious for the Forest—which is responsible for originally mis-defining the action area in its BA—to rely on the Service's findings. *See, e.g.*, *Ctr. for Bio. Diversity v. Salazar*, 804 F. Supp. 2d 987, 1010 (D. Ariz. 2011); *Rumsfeld*, 198 F. Supp. 2d at 1157.

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[6] The Forest and Service also erred by failing to issue a final biological opinion regarding yellow-billed cuckoo critical habitat. The critical habitat portion of the BiOp was issued as a "conference opinion" because, at the time of issuance, critical habitat had been proposed but not finalized. BiOp at 26; *see* 16 U.S.C. § 1536(a)(4); 50 C.F.R § 402.10. However, the cuckoo's critical habitat was formally designated after the BiOp was issued. Final Designation of Critical Habitat for the Western Yellow-billed Cuckoo, 86 Fed. Reg. 20,798 (Apr. 21, 2021). The Forest was therefore required to either (1) request in writing that the Service adopt the conference opinion as a biological opinion, 50 C.F.R § 402.10(d); or (2) reinitiate consultation pursuant to 50 C.F.R § 402.16(a)(4). It did neither, meaning the conference opinion for yellow-billed cuckoo critical habitat is incomplete and invalid.

B. The BiOp relies on vague and unenforceable mitigation measures.

Mitigation measures included in a biological opinion "must constitute a 'clear, definite commitment of resources,' and be 'under agency control or otherwise reasonably certain to occur.'" *Ctr. for Bio. Diversity v. Bernhardt*, 982 F.3d 723, 743 (9th Cir. 2020) (quoting *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 936 & n.17 (9th Cir. 2008)). The measures "must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." *Id.* (quoting *Rumsfeld*, 198 F. Supp. 2d at 1152). Furthermore, it is not enough that a process be reasonably certain; instead, the desired beneficial "*effects*" must be reasonably certain. *Ctr. for Bio. Diversity v. Haaland*, 87 F.4th 980, 988 (9th Cir. 2023); *see also, e.g.*, *Nat. Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 352 (E.D. Cal. 2007) (holding mitigation measures unlawful where a process would occur but the "process itself does not *require* any mitigation *actions* be taken").

The BiOp's mitigation measures here do not meet this standard. They consist of the following:

- "PVM will conduct yellow-billed cuckoo surveys every three years," with details of survey methodology to be determined and subject to change. BiOp at 11.

- "PVM will monitor Pinto Creek riparian habitat and yellow-billed cuckoo proposed critical habitat," with monitoring procedures to be determined. If monitoring shows that PVM activities cause (as-yet undefined) "impact thresholds," then PVM "will coordinate with" the Forest to "identify appropriate actions and/or mitigation measures to address the identified effects." *Id.*

- PVM will design and implement a water monitoring and mitigation plan for water resources within the action area. If this monitoring shows that undefined "thresholds" are exceeded, then PVM "will coordinate with" the Forest to "identify appropriate actions and/or mitigation measures to address the identified effects." *Id.*

These measures "refer only to generalized contingencies or gesture at hopeful plans." *Bernhardt*, 982 F.3d at 743. They are precisely the kind of vague, undefined, and unenforceable mitigation provisions that courts consistently reject

for violating the ESA, and they violate the ESA here.[7] It was arbitrary and capricious for the Forest to rely on them in approving PVM's plan of operations. *E.g.*, *Rumsfeld*, 198 F. Supp. 2d at 1157.

C. The BiOp fails to account for climate change.

Agency action is arbitrary and capricious if "the agency . . . entirely failed to consider an important aspect of the problem." *Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Thus, a biological opinion must consider and address the effects of climate change if—as here—the best available information "indicates that climate change will have a significant negative effect on the listed populations of endangered or threatened species." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 184 F. Supp. 3d 861, 873–74 (D. Or. 2016).

In considering the effects of climate change, an agency cannot merely provide "conclusory" statements or generalized descriptions; instead, it must meaningfully analyze the impact of climate change on the proposed action and its effects. *See, e.g.*, *Wild Fish Conservancy v. Irving*, 221 F. Supp. 3d 1224, 1234 (E.D. Wash. 2016). As always, the Service must use the best available scientific information to assess the effects of climate change. 16 U.S.C. § 1536(a)(2).

The BiOp here fails this requirement in two ways. First, it offers only a cursory, general discussion of climate change that is disconnected from its analysis of Pinto Creek's hydrology and riparian habitat. Second, the groundwater model undergirding the BiOp's findings relies on data explicitly found to be inaccurate.

The BiOp's only discussion of climate change is a single paragraph. In its entirety:

> Climate change, in combination with drought cycles, is likely to exacerbate existing threats to cuckoo habitat in the southwestern U.S., now and into the near future (85 FR 11475). Increased and prolonged drought associated with changing climatic patterns will adversely affect streams and riparian habitat by reducing water availability and altering food availability. The continued warming and drying of habitat will likely alter vegetation structure and composition and reduce the amount and quality of cuckoo habitat.

BiOp at 23.

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[7] Moreover, the mitigation plans are limited to the unlawfully constrained action area. BiOp at 11 (referring to monitoring "within the action area"); *see also* BA at 28, 54. Thus, even if the beneficial effects of PVM's surveys and monitoring were reasonably certain—and they are not—those effects would not extend to the downstream portions of Pinto Creek that the mine's pumping will dewater.

This paragraph is, at most, a "broad, general analysis of climate change" that offers no specific details or reasoned analysis with respect to Pinto Creek or Tonto Basin. *Nat'l Wildlife Fed'n*, 184 F. Supp. 3d at 923. Without more, the BiOp is therefore unlawful. *Id.*

Furthermore, the groundwater model relied on throughout the BiOp used historic rates of natural recharge, even though climate change has reduced those rates. The model, produced by SRK Consulting in 2019 (and supplemented in 2020), used historic data from 1981 to 2010 to assign mean annual precipitation values throughout the action area. SRK 2019 Report at 5, 23–24.[8] Using these historic data was arbitrary and capricious because, as SRK itself acknowledged, "more recent" datasets showed that mean annual precipitation decreased by 18.5 percent compared to the "longer-term" data used in the model. *Id.* at 23. The SRK report explains that it opted to use the older data to "maintain[] consistency" with a previous consultant's report. *Id.* at 24. But that explanation does not justify using data known to be outdated and inaccurate.[9]

The model's error mirrors *Wild Fish Conservancy*, 221 F. Supp. 3d at 1233. There, an agency's use of "historical stream-flow data from 1994 to 2014" was arbitrary and capricious because models that accounted for climate change predicted "a significant reduction in total snowpack and low-elevation snowpack, affecting streamflow and water temperatures." *Id.* Though the agency "discusse[d] the effects of climate change generally," it "proceed[ed] with analysis on the apparent assumption that there [would] be no change to the [creek's] hydrology." *Id.* at 1233–34. At minimum, the court held, the agency needed to "consider that the best available science, which it discusses elsewhere in the BiOp, suggest[ing] that baseline historical flow averages may not be effective predictors of future flows." *Id.* at 1234.

The same is true here. At minimum, the BiOp should have acknowledged the model's inaccuracy—overestimation of precipitation by 18.5 percent—and adjusted its findings accordingly. But it does not, rendering its conclusions arbitrary and capricious. *Id.*; *see also, e.g.*, *Nat. Res. Def. Council*, 506 F. Supp. 2d at 367 (finding BiOp unlawful because its conclusions were "based in part on the assumption that the hydrology of the water bodies affected by the [project] will follow historical

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[8] As with the BA, we use PDF pagination for citations to this report.

[9] The report states that, while the historic precipitation values were used for the "steady state" period of 2010 to 2012, "the recharge value was altered based on the yearly average precipitation changes in 2013 through 2018." SRK 2019 Report at 39. It does not explain how these values were "altered," what source(s) it used to make those alterations, or what values were ultimately used. In any case, at minimum, the 2010 to 2012 *baseline* was modeled on data that falsely overestimated precipitation, undermining modeled results for subsequent years.

patterns for the next 20 years"); *Kern Cnty. Farm Bureau v. Allen*, 450 F.3d 1072, 1080–81 (9th Cir. 2006) (finding plaintiff can show ESA violation by pointing to "data that was omitted from consideration").

III. Conclusion

In short, the 2020 BiOp violates the ESA by failing to account for the full scope of effects to Pinto Creek's threatened and endangered species. The mine's substantial groundwater pumping will dewater significantly more habitat than the BiOp contemplated; the mine's proposed mitigation measures do not come close to offsetting this harm; and unevaluated, climate-change-driven reductions in precipitation will further exacerbate the mine's harmful effects. These errors, which primarily originated with the Forest, made it arbitrary and capricious for the Forest to rely on the BiOp in approving PVM's mining plan of operations. The agencies must therefore reinitiate formal consultation to evaluate the full scope of harm to listed species.

Should you fail to do so—in a manner that addresses the concerns provided herein—we intend to seek redress through litigation.

Sincerely,

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