

FOR PUBLICATION
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

WILD FISH CONSERVANCY,
Plaintiff-Appellant,

v.

KENNETH L. SALAZAR, in his
official capacity as Secretary of
the Interior; UNITED STATES
FISH AND WILDLIFE SERVICE;
ROWAN W. GOULD, in his official
capacity as Acting Director of the
United States Fish & Wildlife
Service; JULIE COLLINS, in her
official capacity as Complex
Manager for the Leavenworth
National Fish Hatchery Complex,
Defendants-Appellees.

No. 09-35531
D.C. No.
2:05-cv-00181-LRS
OPINION

Appeal from the United States District Court
for the Eastern District of Washington
Lonny R. Suko, Chief District Judge, Presiding

Argued and Submitted
March 4, 2010—Seattle, Washington

Filed December 7, 2010

Before: A. Wallace Tashima, Raymond C. Fisher and
Marsha S. Berzon, Circuit Judges.

Opinion by Judge Berzon;
Partial Concurrence and Partial Dissent by Judge Fisher

COUNSEL

Brian A. Knutsen, Richard A. Smith, and Bridget Baker-White, Smith & Lowney, PLLC, Seattle, Washington, for the plaintiff-appellant.

John C. Cruden, Acting Assistant Attorney General, Thekla Hansen-Young, Ellen Durkee, J. Brett Grosko, and David C. Shilton, Attorneys, Environment & Natural Resources Division, Department of Justice, Washington, DC, Nolan Shishido, of Counsel, Office of Regional Solicitor, Department of the Interior, for the defendants-appellees.

OPINION

BERZON, Circuit Judge:

We are faced once again with the far-reaching effects of federal hydroelectric projects in the Columbia River Basin on the region's native fish species. *See, e.g., Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917 (9th Cir. 2008); *Nw. Res. Info. Ctr., Inc. v. Nw. Power Planning Council*, 35 F.3d 1371 (9th Cir. 1994). The fish at the heart of this particular controversy is not salmon, as in most of the earlier cases, and the potential threat to its survival and recovery is not a hydroelectric dam but a hatchery project intended to mitigate a dam's impact.

This action, brought by the Wild Fish Conservancy ("the Conservancy"), centers on a biological opinion ("BiOp") addressing the effects of the operations of the Leavenworth National Fish Hatchery ("the Hatchery") on the bull trout. *See*

U.S. Fish & Wildlife Serv., Biological Opinion for the Operation and Maintenance of the Leavenworth National Fish Hatchery Through 2011 (2008) [hereinafter “2008 BiOp”]. The bull trout is listed under the Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531-44, as threatened throughout its range. *See* Determination of Threatened Status for Bull Trout in the Coterminous United States, 64 Fed. Reg. 58,910 (Nov. 1, 1999). The 2008 BiOp, prepared by the U.S. Fish and Wildlife Service (“the Service”), concluded that the Hatchery’s operations from 2006 to 2011 were not likely to jeopardize the continued existence of the bull trout. Because the Service in several respects failed to articulate a rational connection between the facts found and the “no jeopardy” conclusion, we reverse and remand.

I.

A.

In 1938, Congress authorized the establishment of several salmon hatcheries to replace spawning grounds in the upper Columbia River made inaccessible by the completion of the Grand Coulee Dam, which blocks fish migration. *See* Mitchell Act, ch. 193, 52 Stat. 345 (1938); 83 Cong. Rec. H6075 (May 2, 1938) (statement of Rep. Rich). The Leavenworth National Fish Hatchery was built on Icicle Creek, just south of Leavenworth, Washington, beginning in 1939. Although funding responsibility for the Hatchery has shifted among federal agencies and now rests with the Bureau of Reclamation, the Service has managed and operated the Hatchery continuously since its construction. Currently, the Hatchery operates as a single-species facility, rearing only spring-run Chinook salmon.¹ Initially, salmon were trapped in the Columbia River

¹Although naturally spawned spring-run Chinook salmon in the upper Columbia River as well as some artificially propagated stocks are listed as endangered or threatened under the ESA, the Hatchery population is excluded from the listing because it is significantly divergent from the local natural populations. *See* Final Listing Determinations for 16 ESUs of West Coast Salmon, 70 Fed. Reg. 37,160, 37,175 (June 28, 2005).

and hauled to the Hatchery to spawn. The Hatchery no longer imports salmon into Icicle Creek, relying entirely on returning adult salmon to meet its production targets.

Unfortunately, and somewhat ironically, the Hatchery itself blocks fish passage in Icicle Creek (the “Creek”). When the Hatchery was constructed, a canal was built alongside the Creek; the Creek’s natural channel is now called the “historic channel.” The canal culminates in a concrete spillway; fish can travel downstream over the spillway but not upstream. Fish whose upstream passage is blocked by the spillway gather in a deep pool at its base (the “spillway pool”), and from there the returning salmon, as well as the occasional interloper, ascend a fish ladder to the Hatchery’s holding ponds. Adult salmon in the holding ponds are killed and the females’ eggs removed and incubated. The offspring are reared in the holding ponds and eventually released into Icicle Creek.

Unimpeded, the Creek’s historic channel would allow fish to circumvent the spillway and swim upstream. Passage through the historic channel is blocked, however, at the two points at which the historic channel meets the canal: At the top of the historic channel, radial gates, known as “dam 2,” divert water from the historic channel to the canal, and, when closed, also block fish passage through the historic channel. At the bottom, a weir, or fence, known as “dam 5,” prevents fish from entering the historic channel; boards can be removed from the weir to allow fish passage.

How does this configuration affect bull trout, the species with which we are concerned? Here’s how:

Bull trout exhibit either resident or migratory behavior. Resident bull trout live out their lives in the streams in which they were spawned. They are significantly smaller than migratory bull trout, measuring only six to twelve inches at maturity, and produce fewer eggs. Migratory bull trout, in

contrast, migrate as juveniles to larger bodies of water and return to their hatching place to spawn. They regularly reach twenty-four inches or more. Both resident and migratory bull trout can produce offspring that exhibit either resident or migratory behavior.

The Hatchery's barriers have seriously disrupted the migratory trout's migration and spawning activity. Between 1940 and 2001, migratory bull trout that hatched in the tributaries upstream of the Hatchery were able to migrate downstream over the Hatchery's spillway but were blocked entirely from returning upstream to spawn. Beginning in 2001, the Hatchery started adjusting its dams sporadically to allow occasional upstream fish passage for short periods of time. It also completed an environmental impact statement on a proposed habitat restoration project, a project that would include modifying dams 2 and 5 to allow for increased fish passage. That project has been delayed, however, and, according to the government, "is likely to take some time to implement."

Starting in 2006, after the Conservancy initiated this litigation, the Hatchery implemented two main measures to facilitate upstream passage for bull trout and other native fish. First, it began opening dams 2 and 5 at least partway for about ten months out of the year; passage remains blocked from approximately May 15 to July 7, during the salmon collection period. It also plans to use adaptive management approaches to open the dams early if enough salmon have been collected. Second, the Hatchery installed a trap near the fish ladder for the purpose of collecting bull trout and releasing them above the dams; any bull trout found in the salmon holding ponds will also be transported upstream.

B.

Section 7(a)(2) of the ESA requires federal agencies to consult with either the Fish and Wildlife Service or the National Marine Fisheries Service to "insure that any action autho-

rized, funded, or carried out by [the] agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species.” 16 U.S.C. § 1536(a)(2). The duty to consult applies to “ongoing agency action[s],” *Pac. Rivers Council v. Thomas*, 30 F.3d 1050, 1053 (9th Cir. 1994), as well as future actions. An “ongoing agency action” exists if the action “comes within the agency’s decisionmaking authority and remains so.” *W. Watersheds Project v. Matejko*, 468 F.3d 1099, 1109 (9th Cir. 2006) (internal quotation omitted).

Formal section 7 consultation begins when the “action agency” (here, the Service in its capacity as the operator of the Hatchery) transmits a written request to the “consulting agency” (here, the Service in its consulting capacity). *See* 50 C.F.R. § 402.14(c); *Salmon Spawning & Recovery Alliance v. Gutierrez*, 545 F.3d 1220, 1223 (9th Cir. 2008). The consulting agency then issues a biological opinion evaluating the “current status of the listed species” and the “effects of the action and cumulative effects on the listed species,” and offering a conclusion “as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species.” 50 C.F.R. § 402.14(g). To “jeopardize the continued existence” of a species is to “engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” *Id.* § 402.02. “[T]he jeopardy regulation requires [the Service] to consider both recovery and survival impacts.” *Nat’l Wildlife Fed’n*, 524 F.3d at 931.

Aside from making a jeopardy determination, the consulting agency must also consider whether the action will implicate another ESA provision, the general prohibition on “tak[ing]” of endangered species. ESA § 9, 16 U.S.C. § 1538. The ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). As

authorized by ESA section 4(d), 16 U.S.C. § 1533(d), the Service has issued regulations extending the take prohibition to threatened species, with certain exceptions. *See* 50 C.F.R. § 17.31. The take prohibition applies generally to bull trout in Washington, although fishing activities authorized under state, federal, or tribal laws and regulations are exempted. *See id.* § 17.44(w).

If the consulting agency concludes that an action is likely to jeopardize a listed species, it must recommend any “reasonable and prudent alternatives” that will avoid jeopardy. 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. § 402.14(h)(3). Also, if the consulting agency concludes that the action will not jeopardize the continued existence of a listed species but is likely to result in incidental takings, then it must issue an “incidental take statement” with the biological opinion. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). An incidental take statement exempts a specified number of incidental takings from the take prohibition of section 9.

Given this statutory structure, once the bull trout was listed as threatened, the Hatchery was obligated to consult with the Service to ensure that its operations were not jeopardizing the continued existence of the species, and also for authorization of any incidental takings. *See Pac. Rivers Council*, 30 F.3d at 1053. In its request for consultation, the Hatchery defined the agency action as the operation and maintenance of the Hatchery from 2006 through 2011. According to the 2008 BiOp, the Hatchery selected a five-year period because it planned two modifications to Hatchery operations during and soon after that period that would require it to reinitiate formal consultation: (1) replacement of the water intake system, expected to be completed by 2010, and (2) the habitat restoration project, projected to begin in 2013.²

²The Service filed a 28(j) letter with this court on February 18, 2010, reporting that the replacement of the water intake system had been delayed as a result of engineering difficulties; the Service now anticipates issuing a new biological opinion “before the close of 2011 at the latest.”

As to the Service's scheme for evaluating the impact of an action on the survival and recovery of the bull trout, the Service recognizes five bull trout population segments, which it terms "interim recovery units." Each unit contains several local populations, grouped into geographic "core areas." The Icicle Creek bull trout population is one of seven local populations in the Wenatchee River core area. This core area, in turn, is part of the Columbia River interim recovery unit, which contains about 90 core areas and 500 local populations, making it the largest by far of the five recovery units. The Service conducts its jeopardy determinations for the bull trout at the interim recovery unit level. *See* Determination of Threatened Status for Bull Trout, 64 Fed. Reg. at 58,930.

The 2008 BiOp found that the Icicle Creek bull trout population "has been and remains in decline." 2008 BiOp at 49. As the 2008 BiOp explained, for most of the time since 1940, all reproduction in the Icicle Creek bull trout population has depended on the smaller, less fecund resident bull trout that live out their lives upstream of the Hatchery, because the Hatchery structures have prevented migratory bull trout from returning upstream to spawn. *See id.* at 31-32. There is no spawning habitat downstream of the Hatchery, and migratory bull trout attempting unsuccessfully to return upstream do not appear to spawn elsewhere once their progress has been impeded. *See id.* at 40, 48.

Since 2002, very small numbers of adult migratory bull trout have occasionally been observed upstream of the Hatchery in Icicle Creek, suggesting that at least a few bull trout have been able to pass through the Hatchery dams during the periods they have been open. *See id.* at 43. The 2008 BiOp identifies several factors, however, that likely limit the effectiveness of the 2006-2011 operations and management in providing upstream fish passage: First, the approximately two-month period during which the dams are closed for salmon collection largely coincides with the period during which bull trout attempt to migrate upstream. *See id.* at 45-47. Second,

although the bull trout migration period may extend somewhat beyond the salmon collection period, migrating bull trout successful in traversing the historic channel face additional hurdles before they can reach the spawning habitat farther upstream. Most notably, another Hatchery structure, the intake dam, as well as a group of boulders, is in the way. *See id.* at 55-56. Although the intake dam is equipped with a fish ladder, the ladder location is “suboptimal.”³ *Id.* at 55. The boulders, and possibly the intake dam, are passable only during high flows, which typically occur in late spring and early summer. *See id.* at 56. Beginning in July, flow decreases and the boulder area becomes a barrier. The salmon collection period is scheduled to end on July 7 but may be extended for up to two weeks depending on salmon numbers. *See id.* at 10. Thus, in normal years, there is only a brief window during which migratory bull trout can pass the Hatchery structures and the boulders to spawn upstream, and in some years there may be no window at all.⁴ *See id.* at 69.

Finally, the Hatchery’s efforts to remove migratory bull trout from the spillway pool and salmon holding ponds and transport them upstream have not been successful. *See id.* at 72-73. Bull trout appear to avoid the fish trap and the salmon ladder. *See id.*

As a result of these factors, the Service expects “long-term negative [population] trends [within Icicle Creek] . . . to continue.” *Id.* at 85. The 2008 BiOp found that “in the short-term the risk of extirpation for the Icicle Creek population is moderately low. . . . [I]n the long-term that risk is higher, although

³The water intake system also presents a hazard to bull trout because it is inadequately screened. *See id.* at 79.

⁴Even if migratory bull trout are able to reach the spawning habitat, they will be able to spawn only if they can find a mate. Although migratory females can mate with resident males, migratory males apparently cannot mate with resident females. *See id.* at 71. Thus, if only small numbers of migratory bull trout pass the barriers, there may be a skewed sex ratio among them, which could prevent them from spawning. *See id.*

not as high as it was before formal [operations and maintenance] changes were made at the [Hatchery] in 2006.” *Id.* at 50. Despite the continued negative population trend for bull trout in Icicle Creek, the 2008 BiOp concluded that “the effect of improved upstream passage conditions caused by the proposed action . . . when added to the environmental baseline should improve, albeit in only a small way, the contribution of the Icicle Creek local population to the survival of the bull trout.” *Id.* at 86. Finally, the Service concluded that the action was “not likely to appreciably reduce the likelihood of both the survival and recovery of the bull trout in the wild.” *Id.* at 87.

C.

The Conservancy, then known as “Washington Trout,” filed this action in 2005, seeking declaratory and injunctive relief for alleged violations of the ESA and the National Environmental Policy Act (“NEPA”). Pursuant to a partial settlement, the Hatchery engaged in formal ESA section 7 consultation with the Service, resulting, in 2006, in a biological opinion (“2006 BiOp”). When the Conservancy challenged the 2006 BiOp in an amended complaint, the Service moved for and was granted a voluntary remand. In 2008, the Service issued the 2008 BiOp under review here, thereby superseding the 2006 BiOp. The Conservancy, still concerned that the Icicle Creek bull trout population was being adversely affected, challenged the 2008 BiOp in a second supplemental complaint.

Both parties moved for summary judgment. The district court granted the Service’s motion and denied the Conservancy’s. It concluded that the 2008 BiOp was “sufficiently well-documented and explained”; that the Service “appropriately defined and justified the 5-year term of the proposed action”; that the “no jeopardy” conclusion was not arbitrary and capricious. The Conservancy timely appealed.

II.

We review the district court's decision and analysis on summary judgment *de novo*. *See Nat'l Wildlife Fed'n*, 524 F.3d at 927. We must affirm the district court's grant of summary judgment to the Service unless the agency's action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Although we cannot substitute our own judgment for that of the agency, we must "engage in a careful, searching review to ensure that the agency has made a rational analysis and decision on the record before it." *Nat'l Wildlife Fed'n*, 524 F.3d at 927.

A.

We consider first whether the Service permissibly defined the scope of the action as the operations and management of the Hatchery for a period of five years. The Conservancy objects to framing the operation of an ongoing project as a short-term action, arguing that the Service's choice of the action's scope allowed it to avoid considering whether the operations of the Hatchery would lead to the extirpation of the Icicle Creek bull trout population at some point beyond the five-year period, as well as whether that loss, if it occurred, would compromise the interim recovery unit. The Service maintains that its choice of the five-year term was not arbitrary and capricious because, as the 2008 BiOp states, the Hatchery anticipated that the replacement of its water intake system in 2010 (now delayed, as we have noted) would require it to reinitiate section 7 consultation.⁵

[1] Evaluating the scope of an agency action can be significant in determining the adequacy of a biological opinion.

⁵The 2008 BiOp cites another upcoming project, the habitat restoration project, for which construction is projected to begin in "approximately 2013," as an additional reason for the 2011 end date, *see* 2008 BiOp at 15, but the Service does not mention this reason in its brief.

“[T]he scope of the agency action is crucial because the ESA requires the biological opinion to analyze the effect of the *entire* agency action.” *Conner v. Burford*, 848 F.2d 1441, 1453 (9th Cir. 1988). We “interpret the term ‘agency action’ broadly,” because “caution can only be exercised if the agency takes a look at all the possible ramifications of the agency action.” *Id.* (internal quotation marks and alterations omitted).

Conner rejected biological opinions addressing only the first, preliminary stage in a multistage project. The case involved the federal government’s issuance of more than 700 leases for oil and gas exploration in two national forests. Before the leases were issued, the Service prepared a biological opinion for each forest. Concluding that there was “insufficient information available to render a comprehensive biological opinion beyond the initial lease phase,” *id.* at 1452, the Service considered the effects only of the leases themselves, not of the oil and gas activity to follow on the leased land. *Id.* at 1453. Instead of comprehensive biological opinions at the leasing stage, the Service included in the leases stipulations requiring additional environmental consultation prior to any “surface-disturbing activities.” *Id.* at 1455.

We held that the limited scope of the biological opinions violated the ESA. The Service’s obligation, we said, was “to analyze the effect of the *entire* agency action.” *Id.* at 1453. Because “[p]umping oil and not leasing tracts is the aim of congressional mineral leasing policy,” the agency action necessarily encompassed “not only leasing but leasing and all post-leasing activities through production and abandonment.” *Id.* (internal quotation marks and alterations omitted). The Service’s proposal to conduct “incremental-step consultation” was an inadequate alternative. That approach might result, for example, in the “piecemeal chipping away of habitat” for endangered species. *Id.* at 1454. The Service was thus “required to prepare, at the leasing stage, a comprehensive biological opinion” considering “all phases of the agency

action.” *Id.* Because it had not done so, the biological opinions were invalid.

The Service contends that *Conner* is inapposite because the five-year term of operations and management *is* the entire agency action.⁶ What the Service’s argument does not acknowledge is that the Hatchery has been operating for seventy years and is expected to continue operating into the future. The Hatchery simply made a decision, endorsed by the Service, to define the action as a five-year term of operations, when it might as easily have chosen a thirty-year term or a one-year term.

[2] The delineation of the scope of an action can have a determinative effect on the ability of a biological opinion fully to describe the impact of the action on the viability of the threatened species, here the bull trout. For example, limiting the analysis of the Hatchery’s impact on the bull trout to a one-month term of operations would almost certainly be arbitrary and capricious. The time period under study would likely be too short to capture *any* effects on the bull trout, even though, as the 2008 BiOp under review recognizes, the Hatchery will have a negative impact over a five-year period.

[3] The Hatchery must ensure that it does not “engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery” of the bull trout in the Columbia River interim recovery unit. 50 C.F.R. § 402.02. The artificial division of a continuing operation into short terms can undermine the consulting agency’s ability to determine accurately the species’ likelihood of survival and recovery, as the example just given illustrates.

⁶The Service relies primarily on *Cabinet Mountains Wilderness v. Peterson*, 685 F.2d 678 (D.C. Cir. 1982), a case we regarded as inapposite in *Conner*. See 848 F.2d at 1457. As in *Conner*, *Cabinet Mountains* is not pertinent because it did not address whether the agency correctly determined the time-limited scope of the action covered by the BiOp.

This problem is exacerbated by the fact that the ESA regulation requires consideration of whether the action will “reduce *appreciably* the likelihood of both the survival and recovery” of the affected species. *Id.* (emphasis added). There could be some impact, but not an appreciable impact, in each of several subdivided periods of operation that, in cumulation, have an undeniably appreciable impact. For instance, if the Service were to analyze ongoing Hatchery operations as a series of ten five-year actions, it might find a likely net decrease of five to ten bull trout over each five-year period, and might conclude that an incremental reduction in the local population of that magnitude would not *appreciably* reduce the likelihood of survival and recovery of the interim recovery unit. But if instead the Service were to consider the *entire* reduction in the local population over fifty years, it might then find an appreciable impact on the interim recovery unit.⁷

[4] One reason for the potential discrepancy in outcomes depending on the temporal scope of the analysis is that, in conducting its jeopardy analysis, the Service considers the effects of the action “that will be added to the environmental baseline.” *Id.* The baseline includes “the past and present impacts of all Federal, State, or private actions and other human activities in the action area.” *Id.* Thus, if the Service conducts a series of short-term analyses, the baseline effectively resets at the beginning of each period. While the Service must consider the baseline in its analysis, “[a]gency action can only ‘jeopardize’ a species’ existence if that agency action causes some deterioration in the species’ pre-action condition.” *Nat’l Wildlife Fed’n*, 524 F.3d at 930. In other words, “an agency only ‘jeopardize[s]’ a species if it causes some new jeopardy.” *Id.*

⁷If the downward trend grew steeper as the population got smaller, as could be the case if the same proportion of individuals was prevented from reproducing each year, the overall exponential decline in the population might be all the more likely to appear “appreciable” when considered from a longer-term perspective.

To illustrate the problem: If the Service were to project that Hatchery operations over a fifty-year term would result in the extirpation of the Icicle Creek bull trout population, the loss of that local population, depending on the role it played in the larger interim recovery unit, might be significant enough to “reduce appreciably the likelihood of both the survival and recovery” of the interim recovery unit. A series of short-term analyses, on the other hand, could mask the long-term impact of Hatchery operations. If the Service were to determine in year 45, for example, that Hatchery operations over the next five years would eradicate the local bull trout population, the local population in year 45—the baseline year—might already have become so small, and its role in the interim recovery unit therefore so diminished, that its loss could not be said to *reduce appreciably* the likelihood of survival and recovery of the interim recovery unit.

[5] As we observed in other circumstances in *National Wildlife Federation*, “[u]nder this approach, a listed species could be gradually destroyed, so long as each step on the path to destruction is sufficiently modest. This type of slow slide into oblivion is one of the very ills the ESA seeks to prevent.” *Id.*; see also *Am. Rivers v. U.S. Army Corps of Eng’rs*, 271 F. Supp. 2d 230, 255 (D.D.C. 2003) (“If FWS were allowed to apply such a limited scope of consultation”—in that case, one year—“to all agency activities, any course of agency action could ultimately be divided into multiple small actions, none of which, in and of themselves, would cause jeopardy.”)⁸ Although it is not for us to dictate precisely how long the term of the analysis should be in this case, it must be long enough for the Service to make a meaningful determination as to

⁸Serial short-term biological opinions also present another problem: If the period of operations concerned is short, a BiOp may become moot before judicial review occurs, or, as here, may be reviewed relatively late in the period covered. See *Am. Rivers v. Nat’l Marine Fisheries Serv.*, 126 F.3d 1118, 1123-24 (9th Cir. 1997) (holding that a new biological opinion generally renders moot any challenges to the validity of the previous one).

whether the *ongoing* operation of the Hatchery “reasonably would be expected . . . to reduce *appreciably* the likelihood of both the survival and recovery” of the Columbia River interim recovery unit. 50 C.F.R. § 402.02 (emphasis added). Particularly given the long life of this facility and the absence of any indication that the Hatchery might close down altogether in the foreseeable future, five years is not sufficient.

[6] The Service maintains that the choice of a five-year term of operations was justified in this case because the Hatchery plans to reinitiate Section 7 consultation after replacing its water intake system sometime in the near future. But the 2008 BiOp does not explain why the Hatchery’s proposed infrastructure improvement project should relieve the Service of the obligation to prepare a “comprehensive biological opinion[] considering all stages of the agency action.” *Conner*, 848 F.2d at 1454. The 2008 BiOp estimates that the current water intake system, which is poorly screened, is likely to kill one bull trout per year and injure another. *See* 2008 BiOp at 92. Additionally, the intake dam—along with the boulder field—is one of two barriers encountered by bull trout who successfully pass upstream of dams 2 and 5. Thus, the water intake system has a comparatively minor effect on bull trout. The far greater threat is the closure of dams 2 and 5, which is expected to injure as many as twenty migratory bull trout per year by “significantly disrupting their breeding behavior,” in turn preventing an indeterminate number of births. 2008 BiOp at 92; *see also id.* at 67-68. Although the 2008 BiOp asserts that the new water intake system “will result in major changes to [operations and maintenance],” *id.* at 14, it makes no suggestion as to what those changes will entail, including whether there will be any effects on fish passage.⁹

⁹We recognize that an agency managing an ongoing facility could conceivably plan to change its infrastructure so substantially that it would ultimately have to overhaul its entire operating regime. In such a situation, there might be so little continuity between the way the facility operated in

Additionally, although the Service suggests that including the effects of the new water intake system in the 2008 BiOp would have been entirely speculative because there was no “concrete proposal” to consider, that suggestion is not accurate. On the contrary, the 2008 BiOp states that the Service and the Bureau of Reclamation had already approved a “preferred alternative design for the new water intake system” and set aside funding “for implementation of this alternative.” *Id.* at 14. Thus, the Service had enough information about the proposed new system to include a meaningful analysis of its potential effects, including any anticipated changes in the operation of dams 2 and 5 as a result of the new system, in the 2008 BiOp.

[7] Moreover, regardless of any uncertainty regarding the proposed infrastructure improvement, it was incumbent on the Service “to use the best information available to prepare [a] comprehensive biological opinion[] considering all stages of the agency action.” *Conner*, 848 F.2d at 1454. We concluded in *Connor* that “incomplete information about post-leasing activities does not excuse the failure to comply with the statutory requirement of a comprehensive biological opinion using the best information available.” *Id.* (citing 16 U.S.C.

the present and the way it would operate in the future, and its future operations might be so unpredictable, that the consulting agency would be justified in preparing a short-term biological opinion. That is not the case here.

The fact that an agency must reinitiate formal consultation “[i]f the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion” does not, standing alone, justify preparing a short-term biological opinion. 50 C.F.R. § 402.16(c). To avoid the need for further consultations, an agency can address any already planned subsequent modifications in its BiOp, something that the Service failed to do, as discussed in more detail below. Moreover, any renewed consultation and BiOp with regard specifically to relatively minor subsequent modifications can be accomplished considerably more expeditiously if there is an existing BiOp covering the operations for that period than if there is not.

§ 1536(a)(2)). We held that the Service was required to “develop projections of oil and gas activities which may indicate potential conflicts between development and the preservation of protected species.” *Id.* Likewise, in this case, the Service was required to use the best information available, including information about future infrastructure improvements, to consider the effects of the Hatchery’s ongoing operations on the bull trout.

The Hatchery and the Service remain under a continuing duty to reinitiate consultation “[i]f new information reveals effects of the action that may affect listed species . . . in a manner or to an extent not previously considered,” or “[i]f the . . . action is subsequently modified in a manner that causes an effect to the listed species . . . that was not considered in the biological opinion.” 50 C.F.R. § 402.16(b), (c); *see Conner*, 848 F.2d at 1458 n.42; *see also N. Alaska Env’tl. Ctr. v. Kempthorne*, 457 F.3d 969, 981 (9th Cir. 2006) (upholding a biological opinion relying on a “reasonable and foreseeable oil development scenario” and noting that “[i]f future actions differ from the 2008 BiOp assumptions, BLM must reinitiate consultation with the FWS” (citing 50 C.F.R. § 402.16(b))). The duty to reinitiate consultation in the future, however, does not diminish the Service’s obligation to prepare a comprehensive biological opinion now.

[8] To give meaning to the ESA’s exhortation that agencies ensure that their actions are “not likely to jeopardize the continued existence of any endangered species or threatened species,” 16 U.S.C. § 1536(a)(2), the Service was required to issue a comprehensive biological opinion taking a long view of the Hatchery’s effects on the bull trout, or to explain adequately why any such effort would be unproductive in assessing the long-term impact of the Hatchery’s operations on the bull trout. Here, the Service did neither. The decision to limit the analysis in the 2008 BiOp to a five-year term of operations and management was therefore arbitrary and capricious.

B.

[9] Even if the Service had been justified in defining the action as a five-year period, it still had to consider the immediate and long-term effects of the action and “articulate[] a rational connection between the facts found and the conclusions made.” *Pac. Coast Fed’n of Fishermen’s Ass’ns v. Bureau of Reclamation*, 426 F.3d 1082, 1090 (9th Cir. 2005). The ESA’s implementing regulations define the “effects of the action” as the “direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.” 50 C.F.R. § 402.02. Indirect effects are “those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.” *Id.*

The 2008 BiOp found that the Icicle Creek bull trout population is the smallest local population in the Wenatchee River core area and the most vulnerable to extirpation. *See* 2008 BiOp at 66. The population trend has been negative for nearly 70 years, since the Hatchery was constructed. *See id.* Between 1940 and 2001, only the smaller and less fecund resident bull trout had access to the spawning areas upstream of the Hatchery; emigrating migratory bull trout were unable to return. Although there is little data on the size of the resident bull trout population, the number of spawning individuals is assumed to be fewer than twenty. As a result, according to the 2008 BiOp, “[i]nbreeding depression, genetic drift, and other consequences of very small population size are a significant concern for this population.” *Id.* at 66.

The survival and recovery of the Icicle Creek bull trout population is “largely dependent on” the ability of migratory bull trout to reach the historically accessible spawning areas upstream of the Hatchery. *Id.* Because they are larger and more prolific, returning migratory bull trout would contribute to the local population by “reducing competition, demo-

graphic, distributional, and genetic risks.” *Id.* The Service estimates that 100 to 200 migratory bull trout would visit the spawning grounds annually “if unimpeded passage were provided over a time period long enough for the population to respond.” *Id.* at 50.

During the 2006-2011 period of operations, the Service expects “low numbers” of migratory bull trout to travel upstream past the Hatchery’s barriers. *Id.* at 71. “[T]hese fish . . . have the potential to migrate to and possibly spawn in upper Icicle Creek.” *Id.* Over the two-year period from 2006 to 2007, a total of six migratory bull trout were seen upstream of the Hatchery within ten miles or less of spawning areas, but it is unknown what gender they were (and so whether they were able to mate with each other or resident bull trout) or whether they spawned. *Id.* “If only a small number of migratory bull trout can pass the [Hatchery], the probability that the group has a skewed sex ratio is greater, simply due to random chance and a small sample size.” *Id.* The 2008 BiOp found that “[i]n order to *stabilize* or achieve a positive population growth trajectory in Icicle Creek, at least a few pairs of male and female migratory bull trout would probably need to successfully spawn in Icicle Creek *annually*.” *Id.* at 49 (emphasis added). And, the 2008 BiOp also concluded that “the proposed action is still likely to at least reduce, *and in some years preclude*, demographic and genetic contributions by migratory bull trout to the small resident bull trout population in Icicle Creek.” *Id.* at 71 (emphasis added). If the action would prevent *any* migratory bull trout from spawning successfully in some years and would permit only six trout of unknown gender to make it upstream in two years, then there is no way the population could meet the minimum requirements to stabilize: “at least a few pairs of male and female migratory bull trout . . . successfully spawn[ing] in Icicle Creek annually.” *Id.* at 49. Thus, as the 2008 BiOp projected, “long-term negative [population] trends [within Icicle Creek] are likely to continue.” *Id.* at 85.

[10] The Service failed adequately to explain how this conclusion can be squared with its ultimate determination that the 2006-2011 operations and maintenance “reasonably would [not] be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery” of the Columbia River interim recovery unit. 50 C.F.R. § 402.02. Contrary to the dissent’s repeated assertions, we make no determination regarding whether the Service could have issued a rational no jeopardy conclusion in light of continuing negative population trends. *See* Dissent at 19625-27. It is not our role to decide whether the findings in the 2008 BiOp require a jeopardy conclusion. Instead, as noted, we must determine whether the agency “articulated a rational connection between the facts found and the conclusions made.” *Pac. Coast Fed’n*, 426 F.3d at 1090. We must hold that it did not.

To begin with, although the Service found that the action would “at least reduce, and in some years preclude” migratory bull trout spawning and that the local bull trout population would continue to decline, it concluded inexplicably that the action was “not likely to change the current distribution and abundance of the bull trout in the action area.” 2008 BiOp at 84. If the population trend is “negative,” as the Service found, *id.* at 85, then, in ordinary English, there will be fewer fish in 2011 than there were in 2006. Yet the Service concluded that the “current distribution and abundance of the bull trout in the action area” is “not likely to change.” Translating again into ordinary English, that means there *won’t* be fewer fish in 2011 than there were in 2006. How can that be, given the negative population trend? It cannot.

The 2008 BiOp offered two reasons for its dubious conclusion that the “current distribution and abundance of the bull trout in the action area” is “not likely to change”: (1) the persistence of the Icicle Creek bull trout population since 1940; and (2) the detection of six migratory bull trout upstream of the Hatchery in 2006 and 2007. *See id.* at 84. Elaborating on the second reason, the 2008 BiOp asserted that the periodic

breeding of migratory and resident bull trout that would “potentially” occur during the term of the action “is likely to contribute to maintaining and improving the viability of this local population and its contribution to the viability of the core area and interim recovery unit populations of the bull trout.” *Id.*

Neither reason adequately explains the contradiction between the Service’s findings and its conclusion. First, the fact that the local population has survived since 1940 does not provide any information about how much longer it can hold on. If there are now fewer than twenty spawning individuals and the population continues to decline, then, absent some intervention, the population will eventually reach zero, its long prior existence notwithstanding. Moreover, even before a population is extinguished, it may reach a point at which it is no longer recoverable: “a species can often cling to survival even when recovery is far out of reach.” *Nat’l Wildlife Fed.*, 524 F.3d at 931. The Service has not determined when the tipping point precluding recovery of the Icicle Creek bull trout population is likely to be reached, nor, necessarily, whether it will be reached as a result of the 2006-2011 operations and maintenance of the Hatchery.

Second, the discovery of a small number of migratory bull trout upstream of the Hatchery in 2006 and 2007 does not, in light of the 2008 BiOp’s other findings, support the Service’s conclusion that the 2006-2011 action will not affect bull trout distribution and abundance in Icicle Creek. The Service found that the action was likely to “reduce, and in some years preclude, demographic and genetic contributions by migratory bull trout to the small resident bull trout population.” 2008 BiOp at 71 (emphasis added). True, before 2001, there were no migratory bull trout spawning successfully, and under the 2006-2011 operations and maintenance there may—possibly—be a very few, although that is far from certain. But any positive impact from the small number of migratory bull trout upstream can only occur if that impact is not offset by the

number of bull trout who are not born or die because the Hatchery impairs upstream migration.

The Service found that between 2001, the first year the Hatchery began adjusting its dams to allow some upstream migration, and 2007, the second year of the action period, there was *no* net gain: “Not enough migratory bull trout are likely to have passed upstream of the [Hatchery] and successfully spawned between 2001 and 2007, to fully offset the reduced [bull trout] B[irths] and I[mmigration], plus increased D[eaths], caused by [operations and maintenance] at [the Hatchery].” *Id.* at 49. Moreover, the 2008 BiOp found that stabilizing the local population would require “at least a few pairs of male and female migratory bull trout . . . successfully spawn[ing] in Icicle Creek annually,” *id.*, but the action would likely preclude *any* spawning by migratory bull trout in some years. That is why, presumably, the bottom line of the Service’s findings is that as a result of the 2006-2011 action, the local bull trout population will continue to decline. As noted, the Service failed to draw a rational link between that finding and its conclusion that the action would not affect the “current distribution and abundance of the bull trout in the action area.”

Nor did the Service articulate a rational connection between its findings and its ultimate conclusion—that the action would not cause jeopardy at the recovery unit scale. The Service has identified the following “survival and recovery needs” for the Columbia River unit: “maintain or expand the current distribution of the bull trout within core areas; maintain stable or increasing trends in bull trout abundance; maintain/restore suitable habitat conditions for all bull trout life history stages and strategies; and conserve genetic diversity and provide opportunities for genetic exchange.” *Id.* at 84. In considering the impact of the action on the Columbia River interim recovery unit, the Service concluded:

[T]he proposed action is likely to contribute to the survival of the bull trout by providing some

upstream passage opportunities for migratory bull trout in Icicle Creek, but is not likely to appreciably increase its recovery at the action area, core area, interim recovery unit, and range-wide scales because it will impair upstream passage of migratory bull trout during the optimal period of in-stream flows. . . . However, the effect of improved upstream passage conditions caused by the proposed action . . . should improve, albeit in only a small way, the contribution of the Icicle Creek local population to the survival of the bull trout.

For the above reasons, the effects of implementing the proposed [Hatchery] operations from May 2006 through December 2011, are not likely to substantively change the capacity of the Columbia River interim recovery unit to provide both the survival and recovery functions assigned to it. For that reason, the proposed action is not likely to appreciably reduce the likelihood of both the survival and recovery of the bull trout in the wild.

Id. at 86-87. This conclusion simply does not account for the finding that the number of bull trout in Icicle Creek would continue to decrease over the action period. The 2008 BiOp does not explain how a “negative” population trend in Icicle Creek could “improve . . . the contribution of the Icicle Creek bull trout population to the survival of the bull trout.” It may be that, as we conjectured in the preceding section, the decrease in the local population over the five-year period under study would not have an “appreciable” negative impact on the interim recovery unit. But how it could have a *positive* impact remains unclear.

The Service might also have found that even if the Icicle Creek bull trout population *were* extirpated, its loss would not jeopardize the survival or recovery of the Columbia Creek interim recovery unit. But it did not make that finding, and it

is far from obvious that the extirpation of the Icicle Creek population would be harmless. The 2008 BiOp reports that bull trout populations in the Columbia River interim recovery unit are generally declining and are strong in only 6 to 24 percent of the occupied range. *See id.* at 19. The Wenatchee River core area is particularly important to the recovery unit because it is a “relative stronghold” for bull trout in the upper Columbia River area. *Id.* at 36. Further, the Icicle Creek local population is important to the core area because its location in the lower basin “could insulate this population from disturbances in the upper basin that would affect most of the others.” *Id.* at 50. At oral argument, the Service emphasized the buffer function the Icicle Creek population might play if other local populations in the core area were threatened.

[11] In sum, the Service was “obligated to articulate a rational connection between the facts found and the conclusions made.” *Pac. Coast Fed.*, 426 F.3d at 1091 (internal quotation marks and alteration omitted). It did not do so. Because “an agency’s action must be upheld, if at all, on the basis articulated by the agency itself,” *id.*, we must reverse and remand on this basis as well.

C.

The 2008 BiOp was also required to consider the effects of activities interrelated with the proposed agency action. *See* 50 C.F.R. § 402.02. The Hatchery uses about 100,000 pounds of fish food to feed the salmon it rears each year, resulting in 30,000 pounds of solid wastes. *See* 2008 BiOp at 80. The Hatchery uses a pollution abatement pond to collect these wastes. Periodically, waste is removed from the pond and spread out on dry ground at the Hatchery.

The Conservancy contends that the Service did not address the effects of cleaning the pollution abatement pond. In particular, the Conservancy is concerned about the effects of runoff from the wastes spread on land at the Hatchery. The 2008

BiOp reports that the fish food used at the Hatchery “is a source of very small amounts of PCBs [polychlorinated biphenyls],” although samples collected from the top layer of sediments in the pollution abatement pond “did not have significantly elevated levels of PCBs.” *Id.* at 66. The Conservancy worries that runoff associated with the cleaning of the pollution abatement pond may contain PCBs and pesticides that could adversely affect bull trout.

[12] We agree with the Service that the 2008 BiOp adequately considered the effects of runoff. In the section entitled “Release of Effluent into Icicle Creek,” the Service described the operation of the pollution abatement pond and noted that it was last cleaned in 2007. *Id.* at 80. It concluded that “hatchery effluent release into Icicle Creek is unlikely to cause adverse effects to the bull trout.” *Id.* at 81.

Although the Service’s discussion of the effects of the pollution abatement pond could have been more detailed, we are satisfied that the agency did not “entirely fail[] to consider an important aspect of the problem,” as it did give the matter some consideration. *Lands Council v. McNair*, 537 F.3d 981, 987 (9th Cir. 2008) (en banc), *abrogated in part on other grounds*, *Winter v. Nat. Res. Def. Council*, 129 S. Ct. 365, 375 (2008). Moreover, there is no indication that the runoff issue is an important aspect of the jeopardy determination. The Service points to the results of a 2005 study of PCB and pesticide concentrations in Icicle Creek, the pollution abatement pond, and Hatchery salmon, reported in the Biological Assessment for Operation and Maintenance of the Leavenworth National Fish Hatchery. According to the Biological Assessment, “[d]ata show that [the Hatchery] is not adversely impacting the PCB or pesticide concentrations in Icicle Creek below the hatchery and hatchery fish are not accumulating PCB or pesticides to levels of concern.” U.S. Fish & Wildlife Serv., Biological Assessment for Operation and Maintenance of Leavenworth National Fish Hatchery 61 (2006).

[13] We therefore reject the Conservancy’s contention that the 2008 BiOp is invalid because it did not adequately address the effects of the pollution abatement pond.

D.

[14] When the Service concludes that a proposed agency action will not jeopardize the continued existence of the species but is likely to result in incidental takings, it issues an “incidental take statement” with the biological opinion. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). The statement must “specif[y] the impact of such incidental taking on the species,” as well as “those reasonable and prudent measures . . . necessary or appropriate to minimize such impact.” 16 U.S.C. § 1536(b)(4). The statement acts as a safe harbor, exempting the specified amount of incidental taking from the take prohibition of ESA section 9. “If during the course of the action the amount or extent of incidental taking, as specified [in the statement], is exceeded, the Federal agency must reinitiate consultation immediately.” 50 C.F.R. § 402.14(i)(4).

Here, the Service issued an incidental take statement (“Statement”) setting the following annual limits on incidental take: (1) one bull trout killed and one harmed by the water intake system; and (2) twenty migratory bull trout injured because their access to historically accessible spawning habitat is impaired, significantly disrupting their breeding behavior. *See* 2008 BiOp at 92. The Conservancy challenges the adequacy of the Statement on two separate grounds.

1.

First, the Conservancy contends that the Statement does not account for the full extent of incidental take. The Hatchery facilitates an active tribal Chinook salmon fishery at the base of its spillway pool, and the 2008 BiOp estimated that some bull trout would be harvested incidentally by tribal anglers. *See* 2008 BiOp at 73. Take of bull trout in accordance with

state and tribal fishing regulations is exempt from the ESA's take prohibition. *See* 50 C.F.R. § 17.44(w)(2). Nonetheless, the Conservancy maintains that the Hatchery takes bull trout by closing dam 5 during the bull trout's spring migration, which results in large numbers of bull trout lingering in the spillway pool, where they may fall prey to tribal anglers fishing for Chinook salmon. If this "take" were included in the Statement, then the Hatchery would be required to comply with reasonable and prudent measures to minimize the take. *See* 16 U.S.C. § 1536(b)(4).

[15] We conclude that it was reasonable for the Service not to attribute to the Hatchery the take of bull trout by tribal anglers. Tribal fishing rights in Icicle Creek are guaranteed by treaties and other agreements. *See United States v. Confederated Tribes of Colville Indian Reservation*, 606 F.3d 698 (9th Cir. 2010). Although the Hatchery's operations likely do increase the numbers of bull trout lingering in the spillway pool, were the Hatchery to change its operations with the result that the spillway pool became less productive as a Chinook salmon fishing area, the Service might very well be obligated to provide alternative locations for the tribal fishery—which might also result in the taking of bull trout. Take of bull trout by tribal anglers is exempt from the ESA wherever it occurs, as long as tribal regulations are followed. Holding the Hatchery responsible for take by tribal anglers would be incongruent with the special rule exempting tribal fishing from the ESA's take prohibition. It was therefore not arbitrary and capricious for the Service to exclude take associated with the tribal fishery from the Statement.

2.

Second, the Conservancy argues that the Statement does not include adequate monitoring requirements. The Statement anticipates that up to twenty migratory bull trout will be injured each year, because Hatchery operations will significantly disrupt their breeding behavior by preventing or delay-

ing their spawning migration. Yet, the Statement does not require the Hatchery to monitor and report the actual number of bull trout so harmed.

“Incidental Take Statements set forth a ‘trigger’ that, when reached, results in an unacceptable level of incidental take, invalidating the safe harbor provision, and requiring the parties to re-initiate consultation.” *Ariz. Cattle Growers’ Ass’n v. U.S. Fish & Wildlife Serv.*, 273 F.3d 1229, 1249 (9th Cir. 2001). Preferably, the trigger is numerical, but the Service may use a surrogate—for example, changes in ecological conditions affecting the species. *Id.* at 1250. If a surrogate is used, the agency must articulate a rational connection between the surrogate and the taking of the species. *Id.* at 1250-51. This court has rejected a surrogate trigger so vague that it failed to “provide a clear standard for determining when the authorized level of take has been exceeded,” *id.* at 1251, and a surrogate so broad—“all spotted owls” associated with the project—that it “could not adequately trigger reinitiation of consultation.” *Or. Natural Res. Council v. Allen*, 476 F.3d 1031, 1038 (9th Cir. 2007).

The Service contends that the Statement is adequate because it provides a clear numerical cap on take—twenty bull trout prevented from spawning—beyond which consultation must be reinitiated. Unlike the other anticipated takings discussed in the Statement, however, the twenty-bull trout limit is not accompanied by a monitoring and reporting requirement. For example, the Statement requires the Hatchery to monitor and report the number and types of fish caught in the water intake system. *See* 2008 BiOp at 94-95. The question, then, is whether the consulting agency is responsible only for providing a clear cap, leaving it up to the action agency to monitor take and reinitiate consultation when the trigger is met, or whether the consulting agency must also set out monitoring and reporting requirements.

[16] The ESA’s implementing regulations provide that “[i]n order to monitor the impacts of incidental take, the Fed-

eral agency or any applicant must report the progress of the action and its impact on the species to the Service *as specified in the incidental take statement.*” 50 C.F.R. § 402.14(i)(3) (emphasis added). The regulation makes clear that the Service is responsible for specifying in the statement how the action agency is to monitor and report the effects of the action on listed species.

[17] Here, the Service has set a clear numerical cap, but a numerical cap is useful only insofar as the action agency is capable of quantifying take to determine when the trigger has been met. *See Or. Natural Res. Council*, 476 F.3d at 1039 (explaining that the incidental take statement must “set a clear standard for determining when the authorized level of take ha[s] been exceeded”); *Natural Res. Def. Council, Inc. v. Evans*, 279 F. Supp. 2d 1129, 1187 (N.D. Cal. 2003), cited with approval in *Or. Natural Res. Council*, 476 F.3d at 1038 (“It is arbitrary and capricious to set the trigger at one animal unless defendants can adequately detect the taking of a single animal.”). Thus, the Service must either specify monitoring and reporting requirements with respect to the twenty-bull trout limit or, if appropriate, select a surrogate trigger that *can* be monitored. Therefore, we hold that the ITS failed to establish a meaningful trigger for renewed consultation after the take exceeded authorized levels.

E.

[18] Finally, ESA section 7 also imposes on the Hatchery a substantive duty to ensure that its operations are not likely to jeopardize the continued existence of the bull trout. “Arbitrarily and capriciously relying on a faulty Biological Opinion violates this duty.” *Defenders of Wildlife v. EPA*, 420 F.3d 946, 976 (9th Cir. 2005), *rev’d on other grounds, Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007). An agency’s reliance on a biological opinion based on “admittedly weak” information satisfies its ESA obligations as long as the challenging party can point to no new informa-

tion undercutting the opinion's conclusions. *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990). Where the opinion's flaws are "legal in nature," however, "[d]iscerning them requires no technical or scientific expertise," and the failure to do so may result in "an action based on reasoning 'not in accordance with law' and . . . thus arbitrary and capricious." *Defenders of Wildlife*, 420 F.3d at 976.

[19] Here, the Service committed legal error by limiting the scope of the action to five years; failing to articulate a rational connection between its findings in the 2008 BiOp and its no jeopardy conclusion; and issuing an inadequate incidental take statement. The Hatchery's reliance on a legally flawed biological opinion was arbitrary and capricious. The Hatchery therefore violated its substantive duty to ensure that its operations and maintenance did not jeopardize the continued existence of the bull trout.

III.

[20] We conclude that the 2008 BiOp is arbitrary and capricious because the Service limited the analysis to a five-year period, failed to articulate a rational connection between the facts found and the conclusions made, and issued an incidental take statement lacking adequate monitoring and reporting requirements. Additionally, the Hatchery violated its substantive duty to ensure that its operations did not jeopardize the continued existence of the bull trout. We reverse and remand to the district court with directions to grant the Conservancy's motion for summary judgment and to grant injunctive relief until the Service complies with its obligations under the ESA.

REVERSED and REMANDED.

FISHER, Circuit Judge, concurring in part and dissenting in part:

Prompted by this litigation, the U.S. Fish and Wildlife Service has attempted to minimize the effect of the Leavenworth National Fish Hatchery (“the Hatchery”) on the small population of bull trout in Icicle Creek. My colleagues in the majority find these efforts insufficient to meet the strictures of the Endangered Species Act (“ESA”) and place two substantial burdens on the Fish and Wildlife Service (“the Service”) that the ESA does not require. First, the majority requires the Service to address operations and maintenance on an unlimited time horizon, despite planned modifications that will further reduce the Hatchery’s impact on the bull trout. Second, the majority requires the Service to attribute continuation of a 70-year population decline to planned Hatchery operations, rather than recognizing that trend and the structures that caused it as the environmental baseline. I respectfully dissent from these aspects of the majority’s opinion.

I.

The majority first concludes that the Service acted arbitrarily or capriciously by limiting its analysis to the five-year term of the 2006 to 2011 Operations and Maintenance Plan (“the O&M Plan”). *See Op.* at 19599-19606. As the majority notes, Section 7 of the ESA requires consultation concerning any agency action that may “jeopardize the continued existence of an endangered species or threatened species or result in the destruction or adverse modification of habitat of such species.” 16 U.S.C. § 1536(a)(2). The ESA defines agency action as “any action authorized, funded, or carried out by such agency.” *Id.* The applicable regulation further defines “action” as

all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas.

Examples include, but are not limited to . . . actions directly or indirectly causing modifications to the land, water, or air.

50 C.F.R. § 402.02.

Here the Service had a reasonable rationale to limit the scope of the agency action considered in the 2008 Biological Opinion to a five-year period: the projected completion of a new water intake system in 2011 that will reduce annual adverse impacts on the bull trout when completed. *See* U.S. Fish & Wildlife Serv., *Biological Opinion for the Operation and Maintenance of the Leavenworth National Fish Hatchery Through 2011*, at 14-15 (2008) (“2008 BiOp.”). As both the 2008 BiOp and the accompanying Incidental Take Statement (“ITS”) acknowledge, the current water intake system harms bull trout annually, and the majority recognizes that improving this system will require a new BiOp. *See* Op. at 19595 n.2. The Service also intends to undertake a broader habitat restoration project at the Hatchery. Although this project cannot begin until adequate funding has been secured and further consultation has occurred, *see* 2008 BiOp at 15, it demonstrates the significant differences between the environmental impacts during the period covered by the O&M Plan and future operations. Perhaps most importantly, allowing the Service in these circumstances to define an action as the multi-year operation of an ongoing program promotes renewed analysis based on a growing foundation of data, analysis and mitigation experiments. The majority’s contention that the Service “might as easily have chosen a thirty-year term or a one-year term,” Op. at 19601, is unfairly dismissive of the agency’s reasonable response to the facts on the ground (and in the river).

It seems quite reasonable for the Service to assess the present and future impacts of a fixed period of operations rather than to assess operations on an indefinite time horizon, which would require the demonstrably false assumption that the Ser-

vice will never meaningfully change Hatchery operations. Cf. *Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Reclamation*, 426 F.3d 1082, 1088-92 (9th Cir. 2005) (faulting a 10-year BiOp for failing to explain why mitigating action was delayed until year nine, not for being limited to 10 years). The majority's repeated assertion that a BiOp addressing five years of operation and management is not a " 'comprehensive biological opinion[] considering all stages of the agency action,' " Op. at 19604, 19605 (quoting *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)), begs the question and fails to afford the Service appropriate flexibility to define the scope of its action. The majority guarantees that an ongoing program that fails to remedy immediately a slowly declining population will be found to jeopardize the existence of a threatened or endangered species.

A BiOp addressing a fixed term of operations can and must address long-term implications. However, ESA consultation need address only long-term effects of the agency action at issue, rather than additional agency actions that may or may not occur in the future. See 50 C.F.R. § 402.02 (defining "indirect effects" as "those that are caused by the proposed action and are later in time, but are still reasonably certain to occur" (emphasis added)); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 930 (9th Cir. 2008) ("[T]he proper baseline analysis is . . . what jeopardy might result from the agency's proposed actions in the present and future human and natural contexts." (internal quotation marks and citations omitted)). The 2008 BiOp expressly considered these "indirect effects." 2008 BiOp at 67. Although the BiOp acknowledged that the proposed action is unlikely "to prevent the number of migratory spawners from being large enough to cause an increasing population trend, or to fully alleviate long-term genetic risks to the population," *id.* at 85, given that the population has persisted for over 70 years without access to migratory spawners, it was not irrational for the Service to conclude that five additional years of limited access would not "reduce appreciably the likelihood of both the survival

and recovery” of the local population, let alone the interim recovery unit. 50 C.F.R. § 402.02; *cf. Am. Rivers v. U.S. Army Corps of Engrs.*, 271 F. Supp. 2d 230, 254-55 (D.D.C. 2003) (finding that plaintiffs were likely to succeed on the merits because the Army Corps “narrowly focus[ed] its analysis on the impacts of the 2003 high summer flows on . . . this year only, instead of evaluating both the present and future effects of the 2003 low summer flows” (emphasis added)). Future BiOps may find that continued operation of the Hatchery will push the Icicle Creek population to a tipping point, but the 2008 BiOp provides a rational explanation why this particular O&M Plan will not appreciably increase the likelihood that such a point will be reached.

Rejecting appellant’s challenge to the 2008 BiOp would not, as the majority envisions, authorize death of the bull trout by a thousand cuts. A short-term BiOp is reasonable in this case because the Service plans major improvements in the near term that will significantly alleviate the bull trout take. Should the Service continue to resort to short-term BiOps in the future, however, that approach would be increasingly unlikely to satisfy the ESA, regardless of the justification. Allowing this short-term BiOp would not foreclose future analysis of any period of time in which the agency’s action would reduce “*appreciably* the likelihood” of survival and recovery. *Contra* Op. 19602 (emphasis in original). Indeed, a reasonable definition of an appreciable effect surely would include “a likely net decrease of five to ten bull trout over [a] five-year period”, *id.*, when the starting population is believed to number fewer than 20 spawning individuals. *See* 2008 BiOp at 66. There is, however, no support in the record for the notion that such a decline is likely during the period addressed by the 2008 BiOp, let alone that the Service would continue to reach no-jeopardy conclusions if similar, cumulative decreases were to occur a second or third time.

Finally, the majority fears that the Service would permit serial reductions in the Icicle Creek population until its “role

in the interim recovery unit [is] so diminished, that its loss could not be said to reduce *appreciably* the likelihood of survival and recovery of the interim recovery unit.” Op. 19603 (emphasis in original). But, if the small Icicle Creek population plays a significant role, that importance must be based on genetic and geographic diversity, not the population’s contribution to gross numbers. Even if one or more short-term assessments permitted small further reductions in the Icicle Creek population, its genetic and geographic importance to the interim recovery unit would remain unchanged, and the loss of this diversity would have to be taken into account in future jeopardy assessments.

The majority tries to shoehorn this case into the rule we established in *Conner v. Burford*, 848 F.2d 1441 (9th Cir. 1988). *See* Op. at 19599-19601. *Conner* is not on point. There we held that an incremental approach to a BiOp was not permissible when the scope of the planned agency action — a lease of federal land for oil exploration, development and production — included activity beyond the exploration phase reviewed in the BiOp. *See id.* at 1443-44, 1452. Unlike *Conner*, the O&M Plan does not authorize activity beyond the duration or scope of the BiOp; the purpose of the planned activities is complete at the end of the authorized agency action. *Cf. id.* at 1453 (“‘[P]umping oil’ and not ‘leasing tracts’ is the aim of congressional [mineral leasing].” (quoting *North Slope Borough v. Andrus*, 642 F.2d 589, 608 (9th Cir. 1980) (alterations in original))).

The D.C. Circuit’s decision in *Cabinet Mountains Wilderness v. Peterson*, 685 F.2d 678, 681 (D.C. Cir. 1982), provides a more apt analysis. *Cabinet Mountains Wilderness* approved a BiOp that addressed only a three-year exploration plan because “[a]pproval was expressly limited to the proposed exploratory drilling activities[, and] further activities such as developmental exploration or mineral extraction would require a comprehensive examination of environmental effects.” *Id.* at 681. Although the D.C. Circuit did not place

its express imprimatur on the duration of the drilling plan, it rejected the plaintiffs' contention that the BiOp failed to account for cumulative impacts to grizzly habitat and determined that only concurrent "timber sales and roads were relevant in addressing the problem of cumulative impacts." *Id.* at 683-84. The majority's dismissal of *Cabinet Mountains Wilderness* in a footnote, *see Op.* at 19601 n.6, fails to grapple with the decision. I recognize that *Cabinet Mountain Wilderness* did not expressly hold that an agency may segregate a fixed period of operations in a BiOp, but *Conner* did not expressly hold that an agency may not do so. *Cabinet Mountain Wilderness* remains the more analogous authority.

We are faced with a BiOp addressing a distinct five-year plan for operations and management, using existing infrastructure prior to planned improvements. Unlike *Connor*, the BiOp addresses the approved agency action in its entirety. And like *Cabinet Mountain Wilderness*, the O&M Plan is expressly limited to a limited period and range of activities; any further operation will require renewed environmental review. I therefore part company with my colleagues' conclusion that the decision to address only five years of management activities was arbitrary and capricious.

II.

The majority holds that it is impossible to issue a rational no jeopardy conclusion in light of the Service's finding that "long-term negative [population] trends [within Icicle Creek] are likely to continue." *Op.* at 19608 (quoting 2008 BiOp at 85) (modifications in original). The majority, however, fails to address the appropriate environmental baseline and merely assumes that the long-term trend is attributable to the current action. *See Op.* at 19607-13. The 2008 BiOp includes the Hatchery's historical structures and operations in the environmental baseline, *see* 2008 BiOp at 66, and Wild Fish Conservancy has abandoned on appeal its argument that this inclusion was improper.

Department of the Interior regulations define the environmental baseline as including

the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.

50 C.F.R. § 402.02. Of course planned operation and maintenance of the Hatchery cannot be included in the baseline. *See Nat'l Wildlife Fed'n*, 524 F.3d at 930-31 (“Although we acknowledge that the existence of the dams must be included in the environmental baseline, the operation of the dams is within the federal agencies’ discretion . . .”). The 2008 BiOp correctly determined that the O&M Plan will harm the Icicle Creek bull trout population. *See, e.g.*, 2008 BiOp at 85 (“The proposed action is likely to cause impaired passage conditions for the bull trout in Icicle Creek each year . . .”). The BiOp, however, included the continued presence of Hatchery facilities, including obstructions to bull trout migration put in place during past operations, as components of the environmental baseline. *See* 2008 BiOp at 32; *Nat'l Wildlife Fed'n*, 524 F.3d at 930 (“The current existence of the [federal] dams constitutes an ‘existing human activity’ which is already endangering the fishes’ survival and recovery.” (quoting *Alcoa v. Administrator, Bonneville Power Admin.*, 175 F.3d 1156, 1162 n.6 (9th Cir. 1999))). Similarly, the BiOp included in the baseline a 70-year population decline and the risks that accompany a small remaining population. *See* BiOp at 66.

With the scope of both the proposed agency action and the environmental baseline in mind, the Service successfully “articulated a rational connection between the facts found and the [no jeopardy] conclusions made.” *Pac. Coast*, 426 F.3d at 1090 (citing *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual*

Auto. Ins. Co., 463 U.S. 29, 43 (1983)). The continuation of long-term negative population trends results from the continuing presence of obstacles to fish passage through Icicle Creek, and the Service's inaction — its failure to remove those obstacles — is not a part of activity whose effects are considered in the BiOp. There is no contradiction between the remaining effects and the Service's conclusion that the present and long-term effects of the O&M Plan are not likely to reduce appreciably the bull trout's likelihood of survival and recovery of the interim recovery unit.

Nor was it irrational for the Service to conclude that the O&M Plan, in concert with the environmental baseline, was “not likely to change the current distribution and abundance of the bull trout in the action area.” 2008 BiOp at 84. By reducing the period in which preexisting obstacles bar passage of bull trout to spawning grounds, the O&M Plan reduced the rate of decline, and we have no reason to disbelieve the Service's conclusion that the marginal decline over a five year period — while improvements are made to the intake system and plans are laid for habitat rehabilitation — would affect distribution and abundance in an ecologically meaningful manner. This does not guarantee that there “won't be fewer fish in 2011 than there were in 2006.” Op. at 19609. But that claim was never made by the Service and is not necessary to its no-jeopardy conclusion.

The majority also contends that the 2008 BiOp fails to “explain how a ‘negative’ population trend in Icicle Creek could ‘improve . . . the contribution of the Icicle Creek bull trout population to the survival of the bull trout.’ ” Op. at 19612 (quoting 2008 BiOp 86-87). The majority, however, omits a crucial phrase from the quoted text. The BiOp states in full:

However, the effect of improved upstream passage conditions caused by the proposed action, as evidenced by some migratory bull trout observations in spawning habitat within Icicle Creek above the

[Hatchery] in 2006 and 2007, *when added to the environmental baseline* should improve, albeit in only a small way, the contribution of the Icicle Creek local population to the survival of the bull trout.

Slowing a localized decline improves a population's contribution to the broader survival of the species, both by preserving genetic diversity in the short term and widening the time frame in which further improvements can be made to reverse the trend entirely. More importantly, any contradiction in this analysis is irrelevant to the Service's broader conclusion that "the proposed action . . . is not likely to appreciably increase [the Bull Trout's] recovery at the action area, core area, interim recovery unit, and range-wide scales." 2008 BiOp at 86.

* * * * *

In sum, the Service provided a rational basis for its no jeopardy conclusion. To conclude otherwise requires neglecting the environmental baseline and distrusting agency experts' analysis of the scope and relevance of continued population decline, mitigated by remedial agency action. I therefore disagree with my colleague's conclusion that the Service's analysis in the 2008 BiOp is irrational. For these reasons, I respectfully dissent from Parts II.A, II.B, II.E and III. of the majority opinion, but otherwise concur.