

FOR PUBLICATION
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

TROUT UNLIMITED; AMERICAN
RIVERS; PACIFIC RIVERS COUNCIL
WILD STEELHEAD COALITION;
NATIVE FISH SOCIETY; SIERRA CLUB,
Plaintiffs-Appellees,

v.

D. ROBERT LOHN, in his official
capacity as Regional Administrator
of National Marine Fisheries
Service Northwest Regional
Office; NATIONAL MARINE FISHERIES
SERVICE,

*Defendants-cross-claimants-
Appellees,*

BUILDING INDUSTRY ASSOCIATION OF
WASHINGTON; WASHINGTON STATE
FARM BUREAU; COALITION FOR
IDAHO WATER; IDAHO WATER USERS
ASSOCIATION,

Defendant-intervenors-Appellants.

No. 07-35623

D.C. No.
CV-06-00483-JCC

TROUT UNLIMITED; AMERICAN
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WILD STEELHEAD COALITION;
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v.

BUILDING INDUSTRY ASSOCIATION OF
WASHINGTON; WASHINGTON STATE
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ASSOCIATION,

Intervenors,

D. ROBERT LOHN, in his official
capacity as Regional Administrator
of National Marine Fisheries
Service Northwest Regional
Office; NATIONAL MARINE FISHERIES
SERVICE,

Defendants-Appellants.

No. 07-35750
D.C. No.
CV-06-00483-JCC
OPINION

Appeal from the United States District Court
for the Western District of Washington
John C. Coughenour, District Judge, Presiding

Argued and Submitted
October 20, 2008—Seattle, Washington

Filed March 16, 2009

Before: Diarmuid F. O’Scannlain, Pamela Ann Rymer, and
Andrew J. Kleinfeld, Circuit Judges.

Opinion by Judge O’Scannlain

COUNSEL

Damien M. Schiff, Pacific Legal Foundation, Sacramento, California, argued the cause for the defendant-intervenors-appellants. Brian T. Hodges and Sonya D. Jones, Pacific Legal Foundation, Bellevue, Washington, and James S. Burling, Pacific Legal Foundation, Sacramento, California, filed the briefs.

Patti Goldman, Earthjustice, Seattle, Washington, argued the cause for the plaintiffs-appellees and filed the brief. Jan Haselman, Earthjustice, Seattle, Washington, was on the brief.

Ellen J. Durkee and David C. Shilton, Environmental & Natural Resources Division, U.S. Department of Justice, argued the cause for the defendants-appellees-appellants and filed the briefs. Michael Bancroft and Chris McNulty, NOAA Office of General Counsel, Seattle, Washington, and Ronald J. Tenpas, Assistant Attorney General, and Lisa Russell, U.S. Department of Justice, were on the brief.

OPINION

O'SCANNLAIN, Circuit Judge:

We must decide whether the National Marine Fisheries Service may distinguish between natural and hatchery-spawned salmon and steelhead when determining the level of protection the fish should be afforded under the Endangered Species Act.

I

A

Pacific Coast salmon are anadromous fish, meaning that they can survive both in saltwater and in freshwater. The

salmon hatch out of eggs laid in freshwater rivers and streams, then migrate often hundreds of miles to the ocean, where they live for years before returning to their natal streams to spawn and to die. Steelhead, a closely related species, perform the same migration but are able to spawn multiple times. In the Pacific Northwest, anadromous salmon and steelhead populate the Columbia River and its tributaries, including the Willamette River, the Snake River, the Okanogan River, and the Yakima River.

Pacific salmon have a long and turbulent evolutionary history. Salmon have survived geological disruptions such as the rotation of the Cascade Mountains, which caused coastal rivers to change their patterns; the most recent ice age, which covered the present location of Seattle with a sheet of ice 4,000 feet thick; and the warming and frequent floods attendant on the thawing of that glacier. Such natural challenges have resulted in a set of genetically diverse salmon populations. Accordingly, salmon populations can vary greatly even if geographically close, depending on their adaptations to conditions in the natal stream.

Human development in the Pacific Northwest has long threatened many salmon and steelhead species with extinction.¹ “[F]orestry, agricultural, mining, and urbanization activities . . . have resulted in the loss, degradation, simplification, and fragmentation of habitat.” Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead, 71 Fed. Reg. 834, 856 (Jan. 5, 2006). In particular, “logging, road construction, [and] urban development” have caused “declines in [steelhead populations] in the past several decades.” *Id.* These declines have caused concern to environmental organizations and fisheries alike.

¹In this opinion, we use the term “species” to include “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” 16 U.S.C. § 1532(16).

To compensate for reduced natural salmon populations, “extensive hatchery programs have been implemented throughout . . . the West Coast.” *Id.* at 857. Such programs artificially increase salmon abundance by capturing and killing returning adult females, harvesting their eggs, and fertilizing them with the sperm of returning adult males. After being kept in the hatchery during their youth, hatchery salmon are released into the wild, where most complete the same migration to and from the ocean as natural salmon do. After hatchery salmon return to their natal stream, they are killed and the assisted fertilization process is repeated. Not all hatchery fish return to the hatchery, however; some stray from the hatchery to mate and spawn in the wild.

Hatchery programs generally have two goals which can conflict with one another: to increase the number of salmon available for fishing, and to prevent natural salmon from becoming extinct. “While some of the programs . . . have been successful in providing fishing opportunities, many such programs have posed risks to the genetic diversity and long-term reproductive fitness of local natural steelhead populations.” *Id.* The risks hatchery programs pose to natural fish include:

excessive mortality of natural steelhead in fisheries targeting hatchery-origin steelhead; competition for prey and habitat; predation by hatchery-origin fish on younger natural fish; genetic introgression by hatchery-origin fish that spawn naturally and interbreed with local natural populations; disease transmission; degraded water quality and quantity, and impediments to fish passage imposed by hatchery facilities.

Id. Interbreeding poses particular risks to natural salmon populations because it can result in decreased genetic differentiation. On the other hand, “the use of conservation hatcheries may play an important role, under appropriate circumstances,

in reestablishing depressed West Coast [salmon and] steelhead stocks.” *Id.*; see also Proposed Listing Determinations for 27 ESUs of West Coast Salmonids, 69 Fed. Reg. 33,102, 33,142 (June 14, 2004).

B

Congress enacted the Endangered Species Act (“ESA”) in 1973 “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.” 16 U.S.C. § 1531(b). The ESA’s “primary purpose . . . is to prevent animal and plant species endangerment and extinction caused by man’s influence on ecosystems, and to return the species to the point where they are viable components of their ecosystems.” H.R. Rep. No. 95-1625, at 5 (1978), reprinted in 1978 U.S.C.C.A.N. 9453, 9455.

As part of this mandate, the ESA requires the National Marine Fisheries Service (“NMFS”) to do three things that are at issue in these appeals. First, NMFS must decide whether a population of fish or wildlife constitutes a “species” or a “distinct population segment” within the meaning of the ESA. The ESA defines “species” to include “any subspecies of fish or wildlife or plants, and any *distinct population segment* of any species of vertebrate fish or wildlife which interbreeds when mature.” 16 U.S.C. § 1532(16) (emphasis added). “The ability to designate and list [distinct population segments] allows the [agency] to provide different levels of protection to different populations of the same species.” *Nat’l Ass’n of Home Builders v. Norton*, 340 F.3d 835, 842 (9th Cir. 2003). The ESA does not define the term “distinct population segment.”

Second, after deciding whether a population of fish or wildlife constitutes a “species” or a “distinct population segment,” NMFS must decide whether to “list” the species or distinct population segment. A species or distinct population segment may be listed as either “endangered” or “threatened.” 16

U.S.C. § 1533(a)(1). An “endangered” species “is in danger of extinction throughout all or a significant portion of its range.” *Id.* § 1532(6). A “threatened” species “is likely to become an endangered species within the foreseeable future.” *Id.* § 1532(20). A species may be considered “threatened” or “endangered” because of “(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.” *Id.* § 1533(a)(1)(A)-(E). The ultimate listing determinations must be based “solely on . . . the best scientific and commercial data available after conducting a review of the status of the species.” *Id.* § 1533(b)(1)(A).

Third, if NMFS decides to list a species or a distinct population segment as “endangered” or “threatened,” it must accord the species or the distinct population segment various legal protections. For example, an endangered species may not be “take[n],” meaning that no one may “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” it. *Id.* §§ 1538(a)(1)(B), 1532(19). A threatened species, on the other hand, is subject to NMFS’s discretionary protection. *See id.* § 1533(d) (“Whenever any species is listed as a threatened species . . . the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species.”). “Conservation” measures “may include regulated taking” in “the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved.” *Id.* § 1532(3).²

²Regulations regarding taking are referred to as “§ 4(d) regulations,” a reference to the original section in the ESA.

C

Over the past two decades, NMFS has adopted regulations applying the ESA's mandates to salmon and steelhead populations in the Pacific Northwest. These regulations have been modified over the years in response to scientific evidence and to legal challenges. To provide context for the present appeals, we describe how the modern regulations at issue here developed.

In 1991, NMFS issued a Policy Statement defining a “distinct population segment” (“DPS”), and hence a “species” under the ESA, as an “evolutionarily significant unit” (“ESU”) “of the biological species.” Policy on Applying the Definition of Species, 56 Fed. Reg. 58,612, 58,618 (Nov. 20, 1991) (the “ESU Policy”). An ESU “must satisfy two criteria . . . (1) It must be substantially reproductively isolated from other conspecific population units; and (2) It must represent an important component in the evolutionary legacy of the species.” *Id.* The first criterion—reproductive isolation—is based upon “movements of tagged fish, recolonization rates of other populations, measurements of genetic differences between populations, and evaluations of the efficacy of natural barriers.” *Id.* The second criterion—the population’s contribution to the evolutionary legacy of the species—is based upon “the ecological/genetic diversity of the species as a whole. In other words, if the population became extinct, would this event represent a significant loss to the ecological/genetic diversity of the species?” *Id.*

Five years later, NMFS and the U.S. Fish and Wildlife Service adopted a joint policy which slightly modified the three factors to be considered in a listing decision for a “distinct population segment.” The joint policy (the “1996 DPS policy”) describes these factors as (1) the “[d]iscreteness of the population segment in relation to the remainder of the species to which it belongs,” (2) “[t]he significance of the population segment to the species to which it belongs,” and (3) “[t]he

population segment's conservation status in relation to the [ESA's] standards for listing (i.e., is the population segment, when treated as if it were a species, endangered or threatened?).” Policy Regarding the Recognition of Distinct Vertebrate Population Segments, 61 Fed. Reg. 4,722, 4,725 (Feb. 7, 1996). NMFS applies the joint policy to steelhead populations but the original 1991 policy to Pacific salmon populations. *Id.* at 4,722.

In 1993, NMFS concluded that hatchery fish could be part of the same ESU as natural fish. The agency issued an Interim Hatchery Policy which reasoned that “[g]enetic resources important to the species’ evolutionary legacy may reside in hatchery fish as well as in natural fish.” Interim Policy on Artificial Propagation of Pacific Salmon, 58 Fed. Reg. 17,573, 17,574 (Apr. 5, 1993). Hatchery fish otherwise meeting the two criteria for a natural population’s ESU would nevertheless be excluded from that ESU, and not included in the listed species, if information indicated that:

- (1) the hatchery population in question is of a different genetic lineage than the listed natural populations,
- (2) artificial propagation has produced appreciable changes in the hatchery population in characteristics that are believed to have a genetic basis, or
- (3) there is substantial uncertainty about the relationship between existing hatchery fish and the natural population.

Id. at 15,575.

Although hatchery fish could be part of the same ESU as natural fish, NMFS decided that, absent exceptional circumstances, only natural fish could be listed as endangered or threatened. *See id.* at 17,575 (“In general, [hatchery] fish will not be included as part of the listed species.”). NMFS decided that only those hatchery fish “considered to be essential for recovery [of the natural population]” could be listed alongside

the natural fish.³ *Id.* According to the Interim Hatchery Policy, hatchery fish might be considered “essential to recovery” if “the natural population faces a high, short-term risk of extinction, or if the hatchery population is believed to contain a substantial proportion of the genetic diversity remaining in the species.” *Id.*

The Interim Hatchery Policy lasted only until 2001, when Alsea Valley Alliance (“Alsea Valley”), the appellant in a companion case,⁴ successfully challenged NMFS’s decision to distinguish between natural and hatchery fish for listing purposes, after finding both to be within the same ESU. Applying the Interim Hatchery Policy, NMFS had included nine hatchery populations of Oregon coast coho salmon within the same ESU as natural coho salmon, but had listed only the natural portion of the ESU as threatened. *See* 50 C.F.R. § 227.4 (1999); 63 Fed. Reg. 42,587, 42589 (Aug. 10, 1998). Alsea Valley challenged that distinction in the United States District Court for the District of Oregon, arguing that “the ESA does not allow the Secretary to make listing distinctions below that of species, subspecies or a distinct population segment of a species.” *Alsea Valley Alliance v. Evans (Alsea I)*, 161 F. Supp. 2d 1154, 1161 (D. Or. 2001).

The district court agreed with Alsea Valley, concluding that “NMFS may consider listing only an *entire* species, subspecies or distinct population segment.” *Id.* at 1162. Because NMFS had placed the hatchery coho and the natural coho in the same ESU, the district court reasoned, NMFS was required to list *both* hatchery and natural coho as endangered,

³The offspring of artificially propagated salmon that are born in the wild are counted as natural salmon. *See* 58 Fed. Reg. at 17,575 (“Under any scenario, progeny of fish from the listed species that are propagated artificially are considered part of the listed species and are protected under the ESA.”)

⁴Alsea Valley’s claims are addressed in a memorandum disposition filed concurrently with this opinion. *See Alsea Valley Alliance v. Lautenbacher*, No. 07-35824 (9th Cir. 2009).

or *neither* hatchery nor natural coho as endangered. Accordingly, the district court struck down the Oregon coast coho listing as arbitrary and capricious.

Rather than appeal the district court's decision, NMFS revised its Interim Hatchery Policy to eliminate the distinction between natural and hatchery fish in listing determinations. After 162 days of public comment, NMFS issued a Final Hatchery Listing Policy on June 28, 2005. *See* Policy on the Consideration of Hatchery-Origin Fish, 70 Fed. Reg. 37,204 (June 28, 2005). That policy is a central subject of the present appeals.

The 2005 Hatchery Listing Policy reaffirms that hatchery fish may be part of the same ESU as natural fish, but alters NMFS's listing practices in several ways. To comply with *Alsea I*, the Hatchery Listing Policy provides that hatchery fish that are part of the same ESU as natural fish "will be included in any listing of the ESU." *Id.* at 37,215. In addition, the Hatchery Listing Policy requires NMFS to consider the status of the ESU *as a whole* rather than the status of only the natural fish within the ESU when determining whether an ESU should be listed as endangered or threatened. *Id.* However, under the policy, a listing determination still places primary importance on the viability of natural, self-sustaining populations, providing that "[h]atchery fish will be included in assessing an ESU's status in the context of their contributions to conserving natural self-sustaining populations." *Id.* The Hatchery Listing Policy also requires status determinations to be based upon abundance, productivity, genetic diversity, and spatial distribution of the ESU. *Id.* Noting that hatchery fish can be both helpful and harmful to natural fish, the policy also allows NMFS to use its discretionary authority via § 4(d) regulations to provide for the take of certain hatchery fish, even if the ESU to which they belong is listed as threatened. *Id.* at 37,215-16.

Around this time, NMFS issued § 4(d) regulations with respect to the taking of ESUs deemed threatened. Under the regulations, naturally spawned and hatchery salmon with intact adipose fins may not be taken. *See* Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, 70 Fed. Reg. 37,160, 37,194-95 (June 28, 2005). On the other hand, hatchery fish with clipped adipose fins may be taken.⁵ *Id.*

D

These appeals primarily involve NMFS's decision, in accordance with the 2005 Hatchery Listing Policy, to down-list a population of Upper Columbia River steelhead from endangered to threatened.

The Upper Columbia River steelhead is an inland steelhead ESU in the Columbia River Basin upstream from the Yakima River, Washington to the United States-Canada border, which suffered major population declines due to dam construction in the 1930s and 1940s. During the following decades, this steelhead ESU became homogenized due to hatchery practices and from the proliferation of hatchery fish. By 1997, NMFS had listed the steelhead as endangered based on low abundance, both in absolute numbers and in relation to the numbers of hatchery fish sharing the habitat. Listing of Several Evolutionarily Significant Units (ESUs) of West Coast Steelhead, 62 Fed. Reg. 43,937 (Aug. 18, 1997). In the 1997 "endangered" listing, NMFS referenced the effect of hatchery and harvest management as factors affecting the endangerment of the ESU.

In 2004, however, NMFS added hatchery populations to the Upper Columbia River steelhead ESU. Applying the 1993

⁵The regulations' purpose is to allow the management of the hatchery fish population. Prior to release, hatcheries may clip adipose fins to indicate such fish may be taken. *See supra* note 1.

ESU Policy, which focuses on “reproductive isolation” and the species’ “evolutionary legacy,” NMFS created a ESU composed of natural steelhead and various stocks of hatchery steelhead. 69 Fed. Reg. at 33,102. To determine which hatchery fish to include in the ESU, NMFS relied on a Salmon and Steelhead Hatchery Assessment Group which used available information to assess the relatedness of each hatchery stock to the natural population on the basis of stock origin and the degree of genetic divergence between the hatchery stock and the natural population. *Id.* at 33,111. The result was a modified Upper Columbia River steelhead ESU that included six hatchery stocks as well as resident rainbow trout populations that co-occur with the anadromous populations. NMFS rejected petitions filed by Trout Unlimited seeking to split natural and hatchery fish into separate ESUs. Then, partly because the modified ESU contained hatchery fish as well as natural fish, NMFS downlisted the Upper Columbia River steelhead from “endangered” to “threatened.”

Trout Unlimited and other environmental conservation organizations subsequently brought this action. They challenge (1) NMFS’s rejection of Trout Unlimited’s petitions to separate natural fish and hatchery fish into different ESUs, and (2) the downlisting of the Upper Columbia River steelhead ESU from “endangered” to “threatened.” As part of its second claim, Trout Unlimited argues that the 2005 Hatchery Listing Policy impermissibly requires NMFS to consider the status of the *entire ESU* rather than just the *natural components* of the ESU when making listing determinations. Trout Unlimited maintains that both NMFS decisions are arbitrary and capricious and thus unlawful under the Administrative Procedure Act and that both fail to employ “the best scientific and commercial data available” in violation of the ESA. 16 U.S.C. § 1533(b)(1)(A).

The Building Industry Association of Washington and other trade associations (the “Building Industry”) intervened, challenging NMFS’s listing policies on opposite grounds.

Relying on *Alsea I*, the Building Industry's core claim is that the ESA does not allow NMFS to make any distinctions between hatchery fish and natural fish once NMFS has included them in the same ESU. In particular, the Building Industry challenges (3) NMFS's policy, when making listing determinations, to assess hatchery fish "in the context of their contributions to conserving natural self-sustaining populations." The Building Industry also objects to (4) NMFS's decision to prohibit the "take" of only natural fish and hatchery fish with intact adipose fins. The Building Industry's challenge does not involve the initial question (raised by Trout Unlimited) of whether natural and hatchery fish can belong to the same ESU. The Building Industry's basic contention is that once NMFS defines an ESU, it may not further distinguish between members of that ESU when making its listing determinations.

All parties cross-moved for summary judgment on all claims. The district court granted summary judgment (1) to NMFS on Trout Unlimited's claim that NMFS impermissibly included natural fish and hatchery fish as part of the same ESU, (2) to Trout Unlimited on its claim that the Hatchery Listing Policy and the corresponding downlisting of the Upper Columbia River steelhead ESU from "endangered" to "threatened" violated the ESA, (3) to NMFS on the Building Industry's challenge to NMFS's policy, when making listing determinations, to assess hatchery fish "in the context of their contributions to conserving natural self-sustaining populations," and (4) to NMFS on the Building Industry's claim that NMFS's decision to prohibit the "take" of only natural fish and hatchery fish with intact adipose fins violated the ESA. These timely appeals followed.

II

Before turning to the merits of Trout Unlimited's claims, we must resolve a disputed threshold issue: whether the Hatchery Listing Policy is entitled to deference under *Chev-*

ron v. Natural Resources Defense Council, 467 U.S. 837 (1984).

We defer to the “administrative implementation of a particular statutory provision . . . when it appears that Congress delegated authority to the agency generally to make rules carrying the force of law, and that the agency interpretation claiming deference was promulgated in the exercise of that authority.” *United States v. Mead Corp.*, 533 U.S. 218, 226-27 (2001). “Delegation of such authority may be shown in a variety of ways, as by an agency’s power to engage in adjudication or notice-and-comment rulemaking, or by some other indication of a comparable congressional intent.” *Id.* at 227.⁶

If these conditions are met, we then ask “whether Congress has directly spoken to the precise question at issue.” *Chevron*, 467 U.S. at 842. “If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Id.* at 842-43. If the statutory provision at issue is susceptible to multiple interpretations, “the question for the court is whether the agency’s answer is based on a permissible construction of the statute.” *Id.* at 843.

We have previously held that NMFS’s 1996 policy interpreting the statutory term “distinct population segment,” *see supra* at 3271, is entitled to *Chevron* deference. *See Nw. Ecosys. Alliance v. U.S. Fish & Wildlife Serv.*, 475 F.3d 1136 (9th Cir. 2007). There, we pointed out that Congress “expressly delegated authority to the Service to develop criteria

⁶If Congress has not delegated interpretive authority or if the agency’s action is not taken pursuant to that interpretive authority, the agency’s views are still entitled to deference depending on “the degree of the agency’s care, its consistency, formality, and relative expertness, and . . . the persuasiveness of the agency’s position.” *Mead*, 533 U.S. at 228 (internal footnotes omitted).

for evaluating petitions to list endangered species. Under 16 U.S.C. § 1533(h)(2), the Service is required to publish, in the Federal Register, guidelines on ‘criteria for making findings . . . with respect to petitions.’” *Id.* at 1141-42. We also emphasized that the formal process required by § 1533(h) weighs in favor of according *Chevron* deference: NMFS must “provide to the public notice of, and opportunity to submit written comments on, any guideline . . . proposed to be established under this subsection.” *Id.* at 1142 (internal citation and quotation marks omitted).

Northwest Ecosystem is instructive. Here, as there, Congress delegated authority to NMFS to “make rules carrying the force of law.” *See* 16 U.S.C. § 1533(h) (“The Secretary shall establish, and publish in the Federal Register, agency guidelines to insure that the purposes of this section are achieved efficiently and effectively.”). Furthermore, the Hatchery Listing Policy at issue in these appeals went through the same formal notice-and-comment process as the 1996 DPS policy. We are satisfied that the Hatchery Listing Policy is entitled to *Chevron* deference.⁷

We review NMFS’s rejection of Trout Unlimited’s petitions to split natural and hatchery fish into separate ESUs as well as the downlisting of the Upper Columbia River steelhead under the “arbitrary and capricious” standard. *See* 5 U.S.C. § 706(2)(A) (“[A]gency action . . . found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law” must be set aside). In applying this

⁷NMFS argues that the Building Industry’s claims are not justiciable because the Building Industry is challenging the Hatchery Listing Policy on its face rather than as-applied. In response, however, the Building Industry clarifies that it also is challenging the downlisting of the Upper Columbia River steelhead ESU, which is a concrete implementation of the policy.

In passing, NMFS also contends that the Building Industry lacks standing. In response, the Building Industry points to allegations in its cross-complaint which, we are satisfied, establish standing.

standard, we defer to the informed exercise of agency discretion, especially where that discretion is exercised in an area where the agency has special “technical expertise.” *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 377 (1989) (internal quotation marks and citation omitted); *see also The Lands Council v. McNair*, 537 F.3d 981, 993 (9th Cir. 2008) (en banc); *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1330-32 (9th Cir. 1992).

III

Keeping the appropriate standard of review in mind, we turn to Trout Unlimited’s contention that NMFS improperly rejected its petitions to split natural and hatchery fish into separate ESUs. According to Trout Unlimited, lumping natural and hatchery fish together is contrary to the “best available science” because hatchery fish pose threats to wild fish: “[n]o hatchery has ever been shown to promote the long-term recovery of wild salmon, and countless studies document the harm that hatcheries have caused to wild populations.” Trout Unlimited also argues that “NMFS ignored scientific evidence that hatchery fish exhibit important differences from wild fish.” According to Trout Unlimited, “hatchery stocks are functionally distinct and reproductively isolated from naturally spawned populations.” 69 Fed. Reg. at 33,112. It concludes that NMFS should have separated natural salmon and hatchery salmon into different ESUs in order to advance the ESA’s main goal of conserving *natural* populations.

[1] We disagree. In our view, Trout Unlimited’s emphasis on the threats hatchery fish pose to natural fish collapses two analytically distinct phases of agency action: the initial decision regarding the *composition* of the ESU, and the subsequent decision whether to *list* the ESU. The composition phase is not influenced by whether hatchery fish threaten wild fish; it is concerned only with the “neutral” task of defining a species. *See* ESU Policy, 56 Fed. Reg. at 58,618; *see also* 70 Fed. Reg. at 37,215. In contrast, the *second* phase—the

listing decision—takes into account the effects, positive or negative, of hatchery salmon on natural fish to determine whether the ESU is endangered or threatened. Trout Unlimited’s argument regarding the threats posed by hatchery fish should be directed at NMFS’s *listing* decisions rather than at its *definitional* decisions.

Indeed, NMFS recognized this distinction when it denied Trout Unlimited’s petitions to split natural and hatchery fish into separate ESUs:

NMFS recognizes that artificial propagation under certain circumstances can pose threats to natural populations. However, it is not appropriate to include a consideration of the threats faced by an ESU (such as any risks posed by artificial propagation) when determining what constitutes a species under the ESA. Rather, such an evaluation of threats is conducted after the “species” has been defined, and the likelihood of extinction for the defined species is being assessed.

69 Fed. Reg. at 33,112.

[2] To the extent that Trout Unlimited contends that the “definitional” phase *should* be influenced by the threats presented by hatchery salmon, we see nothing in the ESA that requires such a modification to NMFS’s policies. NMFS has not abdicated its statutory duty to consider the effects of hatchery salmon on natural populations; it merely conducts that inquiry at a different stage. Indeed, the ESA itself implies that NMFS should evaluate the impact of hatchery fish at the listing stage rather than at the definitional phase. *See* 16 U.S.C. § 1533(a)(1) (“The Secretary shall . . . determine whether any species is an endangered species or a threatened species [based upon] natural or manmade factors [presumably including manmade hatcheries] affecting its continued existence.”). NMFS’s policies on this point are therefore a “per-

missible construction” of the ESA and entitled to *Chevron* deference. *Chevron*, 467 U.S. at 843.

Nor are we persuaded that NMFS ignored scientific evidence regarding the genetic and behavioral differences between natural and hatchery fish. NMFS gave a reasoned explanation for rejecting Trout Unlimited’s petitions, relying on its own science to conclude that:

[T]he petitioners’ argument that hatchery stocks are functionally distinct and reproductively isolated from naturally spawned populations is unsubstantiated. The derivation of hatchery stocks from local natural populations and the established practice of incorporating natural fish as hatchery broodstock results in hatchery and natural populations that share the same evolutionary genetic and ecological legacy. . . . The shared evolutionary legacy of certain hatchery stocks with natural populations does not support the exclusion of these hatchery stocks from ESUs containing natural fish.

69 Fed. Reg. at 33,112. NMFS supported its decision by referencing the two expert reports that formed the basis of its 2004 proposed listing determinations.

We will not second-guess NMFS’s resolution of this scientific question. *See Marsh*, 490 U.S. at 377 (“Because analysis of the relevant documents requires a high level of technical expertise, we must defer to the informed discretion of the responsible federal agencies.” (internal quotation marks and citation omitted)). Nothing in the record suggests that NMFS’s decision was uninformed or was arbitrary and capricious. Trout Unlimited and NMFS are engaged in a good faith disagreement that is supported by science on both sides; indeed, the amicus brief filed in this case argues that there is no scientific consensus concerning the relationship between

hatchery and natural fish. In such situations, we stay our hand.⁸ See *The Lands Council*, 537 F.3d at 993.

[3] Accordingly, we agree with the district court's conclusion that the denial of Trout Unlimited's petitions to split natural and hatchery fish into separate ESUs was not arbitrary and capricious.⁹

IV

We turn now to Trout Unlimited's claim that NMFS's listing policies, which resulted in the downlisting of the Upper Columbia River steelhead, violate the ESA because they base listing determinations on the status of the entire ESU (including hatchery fish) rather than the status of only the natural fish within the ESU. According to Trout Unlimited, basing listing determinations on the status of the entire ESU is arbitrary and capricious because the ESU's central purpose is to preserve *natural* populations rather than artificial ones. Trout Unlimited maintains that hatchery fish can give the misleading appearance of a well-stocked fishery when in fact the natural fish are endangered, resulting in improper downlistings. Trout Unlimited suggests that that is precisely what happened when

⁸In addition, although Trout Unlimited does not explicitly challenge the 1991 and 1993 ESU policies, we note that those policies are subject to *Chevron* deference because they interpret the statutory terms "species" and "distinct population segment." NMFS's 1991 and 1993 ESU policies are plainly "based on a permissible construction of the statute." *Chevron*, 467 U.S. at 843; cf. *Nw. Ecosystem*, 475 F.3d at 1140-43 (holding that NMFS's 1996 DPS policy was entitled to *Chevron* deference).

⁹Trout Unlimited also contends that because NMFS must list *all* components of an ESU as endangered or threatened, including hatchery fish in the same ESU as natural fish "creat[es] the anomaly of affording ESA protection to the very hatchery fish that pose a threat to wild salmon viability." This argument ignores the positive impact NMFS found hatchery fish could have on natural populations. In addition, although NMFS lists all components of a ESU, it protects only those hatchery fish with an intact adipose fin. 69 Fed. Reg. at 33,167-68.

NMFS downlisted the Upper Columbia River steelhead from “endangered” to “threatened.”

The district court agreed with Trout Unlimited, holding that the ESA is primarily concerned with preserving *natural* populations. The court thought that “the record does not support a conclusion that an assessment of the status of an entire ESU is an appropriate proxy for assessing the status of natural populations.” Accordingly, the district court concluded that listing determinations must be based on the status of only the natural components of the ESU.

[4] We agree with Trout Unlimited, with NMFS, and with the district court that the ESA’s primary goal is to preserve the ability of natural populations to survive in the wild. As the district court put it, “[t]hat the purpose of the ESA is to promote populations that are self-sustaining without human interference can be deduced from the statute’s emphasis on the protection and preservation of the habitats of endangered and threatened species.” *See, e.g.*, 16 U.S.C. § 1531(b) (“The purposes of this [Act] are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species”). The statute mentions artificial propagation merely as a means “to bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary.” 16 U.S.C. § 1532(3). The ESA’s legislative history also confirms that the ESA is primarily focused on natural populations. *See* H.R. Rep. No. 95-1625, at 5, *reprinted in* 1978 U.S.C.C.A.N. at 9455.

[5] Despite Trout Unlimited’s assertions, however, we are satisfied that the Hatchery Listing Policy is consistent with both the plain language of the ESA and with the statutory goal of preserving natural populations. The ESA requires NMFS to “determine whether any *species* is an endangered species or

a threatened species.” 16 U.S.C. § 1533(a)(1) (emphasis added). A species, in turn, includes “any subspecies of fish or wildlife or plants, and any distinct population segment.” *Id.* § 1532(16). Consistent with the plain language of the statute, the Hatchery Listing Policy conducts a status review of the entire “species”—no more, and no less.

[6] We are also persuaded that the Hatchery Listing Policy does not flout the statutory goal of preserving natural populations. Trout Unlimited casts the policy in an overly simplistic light, suggesting that, under the policy, an abundance of hatchery fish can transform an endangered species into a threatened or an unlisted one, even when the hatchery fish actually harm the natural fish. In fact, the policy does not operate in that simplistic way. Rather, it mandates a more complex evaluation process that considers both the positive and the negative effects of hatchery fish on the viability of natural populations. Indeed, the policy explicitly states that “NMFS will apply this policy in support of the conservation of naturally-spawning salmon and the ecosystems upon which they depend.” 70 Fed. Reg. at 37,215. The policy further states that “[h]atchery fish will be included in assessing an ESU’s status in the context of their contributions to conserving natural self-sustaining populations.” *Id.*

The policy lists a number of ways in which hatchery fish can positively or negatively affect the status of an entire ESU:

The presence of hatchery fish within the ESU can positively affect the overall status of the ESU, and thereby affect a listing determination, by contributing to increasing abundance and productivity of the natural populations in the ESU, by improving spatial distribution, by serving as a source population for repopulating unoccupied habitat, and by conserving genetic resources of depressed natural populations in the ESU. Conversely, a hatchery program managed without adequate consideration of its conservation

effects can affect a listing determination by reducing adaptive genetic diversity of the ESU, and by reducing the reproductive fitness and productivity of the ESU. In evaluating the effect of hatchery fish on the status of an ESU, the presence of a long-term hatchery monitoring and evaluation program is an important consideration.

Id. Therefore, the policy's review of the status of the entire ESU is consistent with the ESA's overall focus on preserving natural populations.

We are also convinced that the Hatchery Listing Policy's method of assessing the status of an entire ESU, and NMFS's corresponding downlisting of the Upper Columbia River steelhead, were decisions based upon the best scientific evidence available.

"Where scientific and technical expertise is necessarily involved in agency decision-making, . . . a reviewing court must be highly deferential to the judgment of the agency." *Nat'l Wildlife Fed'n v. U.S. Army Corps of Eng'rs*, 384 F.3d 1163, 1174 (9th Cir. 2004). An agency's decision may be based on the best scientific evidence available even if the administrative record contains evidence for and against its decision. When not dictated by statute or regulation, the manner in which an agency resolves conflicting evidence is entitled to deference so long as it is not arbitrary and capricious. See *The Lands Council*, 537 F.3d at 993.

[7] Here, the process that led to the development of the Hatchery Listing Policy plainly involved "scientific and technical expertise." *Id.* To evaluate the extinction risk faced by a particular ESU, the agency used the criteria identified by experts in the Viable Salmonid Populations Technical Memorandum. The agency also relied upon an expert report prepared by a Biological Review Team ("BRT"), which considered the extinction risk faced by the natural members

of the ESU without reference to the effects of hatchery populations. To develop a more complete picture of the risks faced by the naturally spawning portion of the ESU, NMFS also considered a Salmonid Hatchery Inventory and Effects Evaluation Report (the “SHIEE Report”). That report found that “[t]he abundance of naturally produced steelhead in the Wenatchee, Methow, and Okanogan basin has increased since the endangered listing in 1997, at least in part because of steelhead produced by hatchery programs. In addition, recent changes in the operation of hatchery programs are reducing potential adverse impacts on the ESU.” NMFS completed its review by relying on the findings of an Artificial Propagation Evaluation Workshop (“APEW”), which concluded that hatchery programs “substantially mitigated the immediacy of extinction risk” for the Upper Columbia River steelhead ESU.

The record shows that NMFS approached the listing decision in a thoughtful, comprehensive manner that balanced the agency’s concerns and goals. Because the downlisting occurred as a result of “substantial—though not dispositive—scientific data, and not on mere speculation,” *Greenpeace Action*, 14 F.3d at 1333, we are satisfied that the downlisting was not “arbitrary and capricious.” NMFS is entitled to decide between conflicting scientific evidence. *See id.* (“To set aside the Service’s determination in this case would require us to decide that the views of Greenpeace’s experts have more merit than those of the Service’s experts, a position we are unqualified to take.”). It is not our role to ask whether we would have given more or less weight to different evidence, were we the agency. Assessing a species’ likelihood of extinction involves a great deal of predictive judgment. Such judgments are entitled to particularly deferential review. *The Lands Council*, 537 F.3d at 993.

[8] Accordingly, the district court’s grant of summary judgment to Trout Unlimited on its claim that the Hatchery Listing Policy and the downlisting of the Upper Columbia River steelhead violated the ESA was erroneous. On remand, the

district court should grant NMFS's motion for summary judgment.

V

We now turn to the arguments of the intervenors, who attack NMFS's policies from the opposite angle. While Trout Unlimited contends that NMFS impermissibly *conflates* hatchery and naturally spawned salmon, the Building Industry argues that NMFS impermissibly *distinguishes* between hatchery and naturally spawned salmon.

A

The lynchpin of the Building Industry's argument is that the ESA's plain language bars NMFS from making any distinction, at any stage of the listing process, between hatchery and naturally spawned fish. Once an ESU is defined to include both hatchery and naturally spawned fish, the Building Industry contends that any further differentiation within the ESU is error. Thus, the Building Industry maintains that considering hatchery and naturally spawned fish separately during the listing process violates the ESA—a violation exacerbated by the fact that analysis of the hatchery fish is limited to their contributions to “conserving natural self-sustaining populations.” 70 Fed. Reg. at 37,215.

The Building Industry supports its claim in several ways. First, it points to the ESA's text, arguing that under that statute's “clear terms,” any distinction between hatchery and naturally spawned salmon is impermissible. The “clear terms” referenced by the Building Industry are the ESA's definition of a “species,” *see* 16 U.S.C. § 1532(16), the ESA's requirement that listing determinations be made upon a review of the status of a species as a whole, *see id.* § 1533(b)(1)(A), and the ESA's failure to reference “natural populations.” This language (or lack thereof) purportedly demonstrates that there is no legal basis for treating hatchery and naturally spawned

salmon differently when reviewing the listing status of the population.

Second, the Building Industry relies upon the ESA's legislative history. The original text of the ESA defined "species" to include "any subspecies of fish . . . and any other group of fish . . . of the same species or smaller taxa in common spatial arrangement that interbreed when mature." Endangered Species Act of 1973, Pub. L. No. 93-205, § 3(11), 87 Stat. 884, 886. When Congress amended the definition of species in 1978 to replace "smaller taxa" with "distinct population segment," legislative reports indicated that the definition now "would exclude taxonomic categories below subspecies [i.e., smaller taxa] from the definition." H.R. Rep. No. 95-1804, at 17 (1978) (Conf. Rep.), *reprinted in* 1978 U.S.C.C.A.N. 9484, 9485. According to the Building Industry, this change meant that while NMFS could no longer list portions of a species based on genetics, listing portions of a species on the basis of geographic range was permissible. The Building Industry concludes that this change eliminated NMFS's ability to differentiate among members of a species which swim side-by-side in the same streams.

Third, the Building Industry repeatedly draws on the district court's opinion in *Alsea I*, which held that NMFS may not distinguish between natural fish and hatchery fish when listing an ESU. Essentially, the Building Industry contends that the Hatchery Listing Policy is flawed for the same reason as the Interim Policy: "distinction between members of the same ESU/DPS is arbitrary and capricious because NMFS may consider listing only an entire species, subspecies, or [DPS/ESU] of any species." *Alsea I*, 161 F. Supp. 2d at 1162.

[9] We reject each of these arguments. We do not agree that the Building Industry's arguments are grounded in the "clear terms" of the ESA. The two provisions relied upon—16 U.S.C. § 1532(16) and 16 U.S.C. § 1533(b)(1)(A)—make no reference to how NMFS is to conduct its listing determina-

tions. Section 1532(16) simply defines “species.” While § 1533(b)(1)(A) does require NMFS to conduct status reviews, it provides no instruction on *how* such reviews should be conducted. Thus, the Building Industry’s demand for “equal treatment” of hatchery and naturally spawned fish during the review process simply finds no grounding in the statutory text of the ESA. *Cf. Or. Trollers Ass’n v. Gutierrez*, 452 F.3d 1104, 1117-19 (9th Cir. 2006) (deciding, under a different statute and applying a different term—“stock,” rather than “species”—that NMFS could treat hatchery and naturally spawned salmon differently).

Likewise, the legislative history does not establish the “clear intent” of Congress. Nothing in the reports cited by the Building Industry addresses how biological distinctions—such as those between hatchery and naturally spawned salmon—should affect the *process* by which NMFS makes its listing determinations. If NMFS were attempting to *list* something less than a ESU, the Building Industry’s arguments might have some merit. However, no party in this case claims that NMFS has listed anything but an entire ESU.

Nor do we find persuasive the Building Industry’s claim that these cases are controlled by what the district court correctly deemed an “expanded interpretation of the *Alsea I* decision.” *Alsea I* does not stand for the “equal treatment” requirement proposed by the Building Industry.¹⁰ Rather, *Alsea I* stands for the separate and distinct proposition that once NMFS determines that hatchery and naturally spawned salmon belong to the same ESU, it may not list the naturally spawned portion to the exclusion of the hatchery portion of

¹⁰At the outset, that contention is undermined by the fact that the very judge who decided *Alsea I* found it inapplicable to the claims the Building Industry brings here. *Compare Alsea I*, 161 F. Supp. 2d at 1156, with *Alsea Valley Alliance v. Lautenbacher*, No. 06-6093-HO, 2007 WL 2344927, at *5 (D. Or. Aug. 14, 2007) (noting that “nothing in . . . *Alsea I* prohibits the aspects of the status review challenged by plaintiffs in this case”).

the ESU. *See Alsea I*, 161 F. Supp. 2d at 1162. In this case, no party disputes that when NMFS lists an ESU, it must list the entire ESU—including both hatchery and naturally spawned fish.

[10] The *Chevron* deference we owe to the agency’s position confirms our conclusion. The ESA requires that the agency “shall by regulation . . . determine whether any species is an endangered species or a threatened species.” 16 U.S.C. § 1533(a)(1). By leaving an “explicit gap” for agency-promulgated regulations, the ESA expressly delegates authority to the NMFS to decide how such listing determinations should be made. *Mead*, 533 U.S. at 227. In addition, § 1532(16) and § 1533(b)(1)(A) are “silent,” or at best “ambiguous,” as to how a status review should be conducted. *Id.* at 843. Accordingly, we should not substitute our judgment for that of the agency, but rather limit ourselves to asking “whether the agency’s answer is based on a permissible construction of the statute.” *Id.*; *see also The Lands Council*, 537 F.3d at 993.

[11] Here, the agency’s construction is eminently reasonable and in accord with the statutory text. The ESA requires only that status reviews evaluate an entire species (here, ESU). *See* 16 U.S.C. § 1533(b)(1)(A). The Hatchery Listing Policy entails such comprehensive review. While the process initially considers the contributions of hatchery and naturally spawned salmon to the ESU’s viability, ultimately, ESUs are assessed as a whole. Naturally spawned fish are not evaluated or listed to the exclusion of hatchery fish. Rather, the contribution of both populations is analyzed with an eye to their respective impact on the likelihood of extinction of the entire ESU. Listing determinations are made on the basis of abundance, productivity, genetic diversity, and spatial distribution. That hatchery fish reproduce with less frequency than naturally spawned salmon and can contribute to a loss of genetic diversity makes it reasonable initially to consider them separately. Indeed, failing to account for these and other distinc-

tions between hatchery and naturally spawned salmon might violate the ESA's mandate that status reviews be conducted "on the basis of the best scientific and commercial data available." *Id.*

Moreover, the Hatchery Listing Policy complies with the express purpose of the ESA to preserve "the ecosystems upon which endangered and threatened species depend," *id.* § 1531(b), and to restore any such "species to the point at which the measures provided pursuant to this [Act] are no longer necessary," *id.* § 1532(3). Though not dispositive, this alignment with the statute's express purpose lends credence to NMFS's position that its policy is a reasonable application of the ESA's mandate.

[12] Accordingly, the district court's ruling that NMFS permissibly distinguishes between hatchery and naturally spawned salmon during the status review process was correct.

B

For many of the reasons discussed above, the Building Industry also argues that NMFS may not distinguish between hatchery and naturally spawned fish when issuing § 4(d) protective regulations. Again, the Building Industry asserts that the language of the ESA, legislative history, and *Alsea I* mandate equal treatment among members of the same ESU. If one portion of a ESU is protected from taking, the Building Industry maintains, all portions must be protected.

NMFS's authority to issue protective regulations is found in 16 U.S.C. § 1533(d), which authorizes the issuance of regulations deemed "necessary and advisable . . . for the conservation of [the threatened] species."¹¹ As discussed above, the

¹¹As the statutory text indicates, these regulations only apply to species deemed "threatened." Species listed as "endangered" may not be subjected to taking under § 1533(d).

specific regulations at issue prohibit the taking of salmon with intact adipose fins. *See* 70 Fed. Reg. at 37,215-16; *see also* 70 Fed. Reg. at 37,194-96. On the other hand, salmon with clipped fins may be taken. 70 Fed. Reg. at 37,194. Therefore, it is permissible to take some members of a threatened ESU, but not others.

The Building Industry's challenge to these regulations fails for essentially the same reasons as its attack on the listing determinations. Nothing in the text or legislative history of the ESA requires equal treatment for members of the same ESU. *See supra* 3288-91. Moreover, nothing in the record indicates that NMFS considered anything but the status of entire ESUs in issuing these regulations.¹²

[13] The flaws in the Building Industry's insistence on equal treatment between hatchery and naturally spawned salmon are especially apparent in this context. The Building Industry's position fails to consider NMFS's findings that hatchery fish can help or hinder the viability of a ESU as a whole. *See* 70 Fed. Reg. at 37,195 (describing the benefits and adverse effects of hatchery fish and noting that "[n]ot all hatchery stocks considered to be part of listed ESUs are of

¹²The Building Industry makes one unique argument on this point. It claims that there is tension between the language of 16 U.S.C. § 1533(d) which authorizes regulations "necessary and advisable . . . for the conservation of [the threatened] species" and the ESA's definition of "conservation." Conservation includes "the use of all methods and procedures which are necessary to bring any . . . threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." *Id.* § 1532(3). The definition, however, foresees the use of "regulated taking" only "in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved." *Id.* Significantly, however, § 1533(d) does not *require* regulations protecting threatened species from taking. The combination of the discretionary "may" and the phrase "necessary and advisable" grant NMFS much leeway in crafting regulations. *Id.* § 1533(d). To the extent reading these provisions in concert creates any ambiguity, the contested regulations are reasonable and entitled to deference under *Chevron*.

equal value for use in conservation in recovery”). In the same way that pruning involves the destruction of some branches of a tree to allow the remaining portions to grow, the § 4(d) regulations at issue here represent the agency’s reasonable judgment that permitting the destruction of some members of an ESU to enable the remaining portions to flourish. Given the agency’s finding that conservation and recovery efforts may be affected by the yearly variation in size and composition of the ESUs, we cannot conclude that regulatory changes giving the agency the flexibility to manage these variations are arbitrary and capricious.

[14] Accordingly, the district court’s ruling that the challenged § 4(d) regulations permissibly distinguish between hatchery and naturally spawned salmon was proper.

VI

Based on the foregoing, the opinion of the district court is **AFFIRMED** in part, **REVERSED** in part, and **REMANDED** with instructions.