FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

AUDUBON SOCIETY OF PORTLAND, An Oregon nonprofit corporation; OREGON WILD, An Oregon nonprofit corporation; WATERWATCH OF OREGON, An Oregon nonprofit corporation; WESTERN WATERSHEDS PROJECT, *Plaintiffs*, and CENTER FOR BIOLOGICAL DIVERSITY, *Plaintiff-Appellant*, v. DEB HAALAND, in her official capacity as Secretary of the United States Department of the Interior; AURELIA SKIPWITH, in her official capacity as Director of the United States Fish and Wildlife Service; UNITED STATES FISH AND WILDLIFE SERVICE, a federal agency of the United States Department of the Interior, *Defendants-Appellees*,	No. 20-35509 D.C. Nos. 1:17-cv-00069-CL 1:17-cv-00098-CL 1:17-cv-00468-CL 1:17-cv-00531-CL

TULELAKE IRRIGATION DISTRICT; KLAMATH WATER USERS ASSOCIATION; TULELAKE GROWERS ASSOCIATION; TALLY HO FARMS PARTNERSHIP, DBA Walker Brothers; FOUR H ORGANICS, LLC; WOODHOUSE FARMING AND SEED COMPANY; MICHAEL BYRNE,
Intervenor-Defendants-Appellees.

AUDUBON SOCIETY OF PORTLAND, An Oregon nonprofit corporation; OREGON WILD, An Oregon nonprofit corporation; WATERWATCH OF OREGON, An Oregon nonprofit corporation; CENTER FOR BIOLOGICAL DIVERSITY,
Plaintiffs,

and

WESTERN WATERSHEDS PROJECT,
Plaintiff-Appellant,

v.

DEB HAALAND, in her official capacity as Secretary of the United States Department of the Interior; AURELIA SKIPWITH, in her official capacity as Director of

No. 20-35513

D.C. Nos.
1:17-cv-00069-CL
1:17-cv-00098-CL
1:17-cv-00468-CL
1:17-cv-00531-CL

OPINION

the United States Fish and Wildlife Service; UNITED STATES FISH AND WILDLIFE SERVICE, a federal agency of the United States Department of the Interior,
Defendants-Appellees,

TULELAKE IRRIGATION DISTRICT; KLAMATH WATER USERS ASSOCIATION; TULELAKE GROWERS ASSOCIATION; TALLY HO FARMS PARTNERSHIP, DBA Walker Brothers; FOUR H ORGANICS, LLC; WOODHOUSE FARMING AND SEED COMPANY; MICHAEL BYRNE,
Intervenor-Defendants-Appellees.

Appeal from the United States District Court
for the District of Oregon
Michael J. McShane, District Judge, Presiding

Argued and Submitted October 5, 2021
Portland, Oregon

Filed July 18, 2022

Before: William A. Fletcher, Sandra S. Ikuta, and Daniel A. Bress, Circuit Judges.

Opinion by Judge Bress

SUMMARY*

Environmental Law

The panel affirmed the district court's summary judgment to the U.S. Fish and Wildlife Service ("FWS") on challenges by the Center for Biological Diversity ("CBD") and Western Watershed Project to two discrete aspects of the Comprehensive Conservation Plan for three of the five National Wildlife Refuges in the Klamath Basin National Wildlife Refuge Complex.

CBD challenged the Conservation Plan's pest-management approach for the Lower Klamath and Tule Lake Refuges. Western Watersheds challenged the Plan's limited allowance of livestock grazing on portions of Clear Lake Refuge. Appellants brought their challenges under the National Environmental Policy Act ("NEPA"), the National Wildlife Refuge System Administration Act of 1966, and the Kuchel Act.

The panel considered, and rejected, CBD's three challenges to the Conservation Plan. First, CBD argued that FWS failed to consider reduced-pesticide alternatives for Lower Klamath and Tule Lake Refuges. The panel concluded that CBD's arguments were unavailing. FWS adequately explained that some amount of pesticide use was necessary on the Refuges to ensure sufficient crop production, on which Refuge waterfowl now depend. Also, FWS could conclude that reduced-pesticide alternatives would not have been reasonable given the uses and purposes

* This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

of the Refuges. Thus, NEPA did not obligate FWS to consider reduced-pesticide alternatives.

Second, CBD argued that FWS failed to take a sufficiently hard look under NEPA at the environmental effects of pesticides on the Refuges in concluding that pesticides could continue to be used with minimal environmental consequences. The panel held that the record confirmed that FWS took a hard look at the direct, indirect, and cumulative effects of its decision to re-adopt and extend the Pesticide Use Proposal (PUP) process for reviewing potential pesticide applications on the Refuges. Also, the agency sufficiently explained its conclusions. The panel rejected CBD's argument that FWS was required to examine specific pesticides in conducting the hard look analysis. The panel held that CBD's remaining challenges to FWS's hard-look analysis were equally unpersuasive.

Third, CBD argued that FWS violated the Refuge and Kuchel Acts by permitting continued pesticide use on the Refuges. The panel held that for the same reasons that FWS's inclusion of the PUP process for Lower Klamath and Tule Lake Refuges did not violate NEPA, it did not violate the Refuge Act or Kuchel Act either. The panel rejected CBD's challenges to the Conservation Plan's approach to pesticide applications on these Refuges.

The panel concluded that FWS did not act arbitrarily, capriciously, or contrary to law by continuing to use the PUP process to evaluate potential pesticide applications on the Refuges, and by allowing for pesticide use as a last resort.

The panel next turned to Western Watersheds' appeal challenging FWS's decision to continue managed livestock grazing on Clear Lake Refuge.

First, Western Watersheds argued that FWS violated NEPA by failing to consider a formal reduced-grazing alternative. The panel held that FWS adequately explained in the Conservation Plan why reduced-grazing or no-grazing alternatives were not reasonable. Also, FWS adequately explained its reasons for not considering an alternative that would eliminate limited grazing with cattle from the adjacent Modoc National Forest. FWS reasonably explained that managed grazing on Clear Lake Refuge was essential to protecting and restoring sage-grouse habitat. Thus, FWS did not violate NEPA by failing to consider a formal reduced-grazing alternative.

Second, Western Watersheds argued that FWS violated NEPA by failing to take a hard look at the effects of continued grazing on the greater sage-grouse and two species of suckerfish. As to the sage-grouse, the panel held that the Conservation Plan discussed at length the potential effects of grazing on sage-grouse and why grazing would be beneficial to sage-grouse habitat. The panel concluded that the agency took a sufficiently hard look at the effects on grazing on sage-grouse, including the cumulative effect. As to the suckerfish, the panel held that the Conservation Plan took a sufficiently hard look at the effects of managed livestock grazing on suckerfish in Clear Lake Refuge.

Third, Western Watersheds maintained that FWS violated the Refuge Act because grazing was an incompatible use of the Refuge. The panel held that for the same reasons that FWS's decision to continue managed grazing on Clear Lake Refuge did not violate NEPA, it did not violate the Refuge Act either.

The panel concluded that FWS did not act arbitrarily, capriciously, or contrary to law in continuing the long-standing practice of managed grazing on Clear Lake Refuge.

COUNSEL

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Timothy Beau Ellis,Vial Fotheringham LLP, Lake Oswego, Oregon, for Amici Curiae Oregon Farm Bureau Federation, Klamath-Lake County Farm Bureau, California Farm

Bureau Federation, Modoc County Farm Bureau, and Siskiyou County Farm Bureau.

OPINION

BRESS, Circuit Judge:

In 2017, after more than six years of research, planning, and consultation, the U.S. Fish and Wildlife Service (FWS) adopted a Comprehensive Conservation Plan for five National Wildlife Refuges in the Klamath Basin National Wildlife Refuge Complex. The Conservation Plan and its appendices span over 3,500 pages and address hundreds of public comments. In this opinion, we consider challenges by two conservation groups, the Center for Biological Diversity (CBD) and the Western Watersheds Project, to two discrete aspects of the Conservation Plan, as it relates to three of the five National Wildlife Refuges that the Conservation Plan covers.

CBD challenges the Conservation Plan's pest-management approach for the Lower Klamath and Tule Lake Refuges. CBD contends that the Conservation Plan violates federal law by failing to include a reduced-pesticide alternative, and by failing to give adequate consideration to the alleged environmental effects of pesticides on wildlife. Western Watersheds challenges the Plan's limited allowance of livestock grazing on portions of Clear Lake Refuge. Western Watersheds argues that the Conservation Plan violates federal law by failing to include a reduced-grazing alternative, and by failing to give adequate consideration to the effects of grazing on the greater sage-grouse and two species of suckerfish. CBD and Western Watersheds bring their challenges under the National Environmental Policy

Act (NEPA), the National Wildlife Refuge System Administration Act of 1966, and the Kuchel Act, a lesser-known federal law specific to the Klamath Basin Refuges.

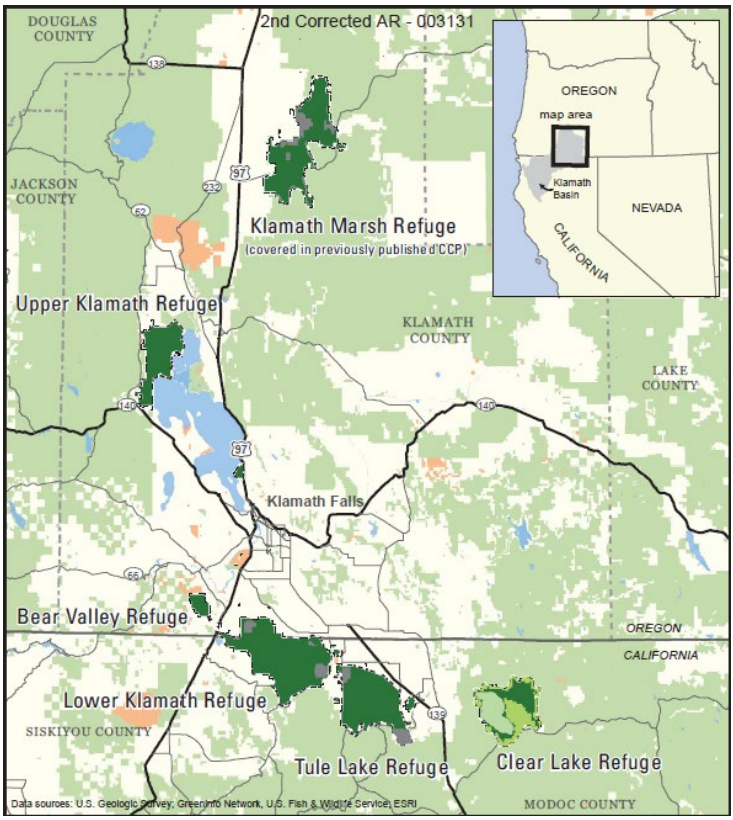
After careful consideration, we conclude that CBD and Western Watersheds have not demonstrated that FWS's Conservation Plan is arbitrary or capricious or otherwise unlawful. FWS adequately considered its chosen approaches to pest-management and grazing, and it reasonably considered other alternatives. Our task is not to second-guess FWS's scientific judgment and institute our own program for Refuge management, but to determine whether FWS's decision-making process was in accordance with law. Because we conclude that it was, we affirm the district court's grant of summary judgment in FWS's favor on CBD's and Western Watersheds' claims.[1]

I. Facts and Procedural History

A. The Klamath Basin

The Klamath Basin National Wildlife Refuge Complex is a multi-use wetland area that spans approximately 200,000 acres at the border of southern Oregon and northern California. It contains six different refuges, although we are here concerned with three of them: Lower Klamath, Tule Lake, and Clear Lake. This map in the record may be helpful to orient the reader:

[1] In separate opinions, we reject additional challenges to the Conservation Plan brought by, among others, Tulelake Irrigation District and the Audubon Society of Portland. Between our three opinions, we therefore affirm in full the district court's grant of summary judgment to FWS.



Like many other western locales, the history of this area is characterized by deep-rooted disagreements over land and water use and how to balance resource preservation with longstanding ranching and farming operations. Although the area was very different many generations ago, today it reflects a highly complex interdependency between agricultural uses and environmental preservation.

Under the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. § 668dd, *et seq.* (together, the "Refuge Act"),

FWS is required to prepare conservation plans for each Refuge in the System. *Id.* § 668dd(e)(1)(A). We consider here certain aspects of FWS's 2017 Final Comprehensive Conservation Plan / Environmental Impact Statement, which covers the three Refuges at issue here. Some background on these Refuges, with emphasis on the disputed issues in the Conservation Plan, is necessary to frame this case.

B. Lower Klamath and Tule Lake Refuges

We begin with Lower Klamath and Tule Lake, which relate to CBD's challenge. In 1908, President Theodore Roosevelt established Lower Klamath Refuge as a preserve for native birds. This Refuge falls within the Klamath Reclamation Project, a massive system of water diversion and distribution that dates to the early twentieth century and that serves approximately 200,000 acres of croplands and 50,000 acres of Refuges and wetlands. The water network reflects more than a century of combined efforts by the federal government and the States of California and Oregon to distribute water to various stakeholders in the Basin region.

Lower Klamath Refuge consists of about 54,000 acres, of which 5,605 are leased for commercial farming. Barley, oats, and wheat are all grown on leased lands in Lower Klamath Refuge. Additional land within Lower Klamath Refuge is cooperatively farmed by FWS and private parties, subject to sharecrop agreements. While there are some differences between the agricultural practices employed on leased and cooperatively farmed lands, all farming is subject to FWS's ultimate control.

Although the entire Basin has experienced drought conditions, Lower Klamath Refuge in particular has suffered from severe water shortages in recent years. Disagreements

over water in the Klamath Basin remain the subject of long-running disputes in state and federal courts, and have also led to multilateral negotiations that have been ongoing for years. While we discuss these issues in greater detail in our companion opinions, the point for present purposes is that FWS in its Conservation Plan was constrained to devise Refuge management strategies based on the limited availability of water.

Tule Lake Refuge was established in 1928 as a refuge for wild birds and animals. Like Lower Klamath, it falls within the Klamath Reclamation Project. Tule Lake Refuge consists of about 39,000 acres, of which roughly 14,800 are leased for commercial farming. Tule Lake lease crops include grains, alfalfa, potatoes, onions, and horseradish. FWS and private parties cooperatively farm additional land in the Refuge.

Relevant to both Tule Lake and Lower Klamath—and CBD's challenges to the Conservation Plan—are Congress's directives that these Refuges be used for both conservation and agricultural purposes. In 1964, Congress passed the Kuchel Act, *see* 16 U.S.C. §§ 695k–695r, which provides that "all lands" within the subject Refuges are "dedicated to wildlife conservation" and are to be administered "for the major purpose of waterfowl management, but with full consideration to optimum agricultural use that is consistent therewith." *Id.* § 695*l*. Mindful of its obligations under the Kuchel Act, FWS in the Conservation Plan authorized continued agriculture in both the Lower Klamath and Tule Lake Refuges.

In doing so, FWS incorporated into the Conservation Plan for all farmed lands an integrated pest management (IPM) plan intended to "ensure that all potential pest management strategies [are] considered for use (including

physical, cultural, biological, and chemical)," based on considerations of "human safety, environmental integrity, effectiveness, and cost." Pest prevention options under the IPM plan include "crop rotation, cover crops, late or early planting dates, crop variety selection, tillage practices, and water and fertilizer management, as well as biological and chemical controls." The IPM plan and associated best management practices "for mixing, handling, and applying pesticides" are included in the stipulations in the lease agreements. The IPM plan extended an existing IPM plan that had been in place on the Refuges since 1998.

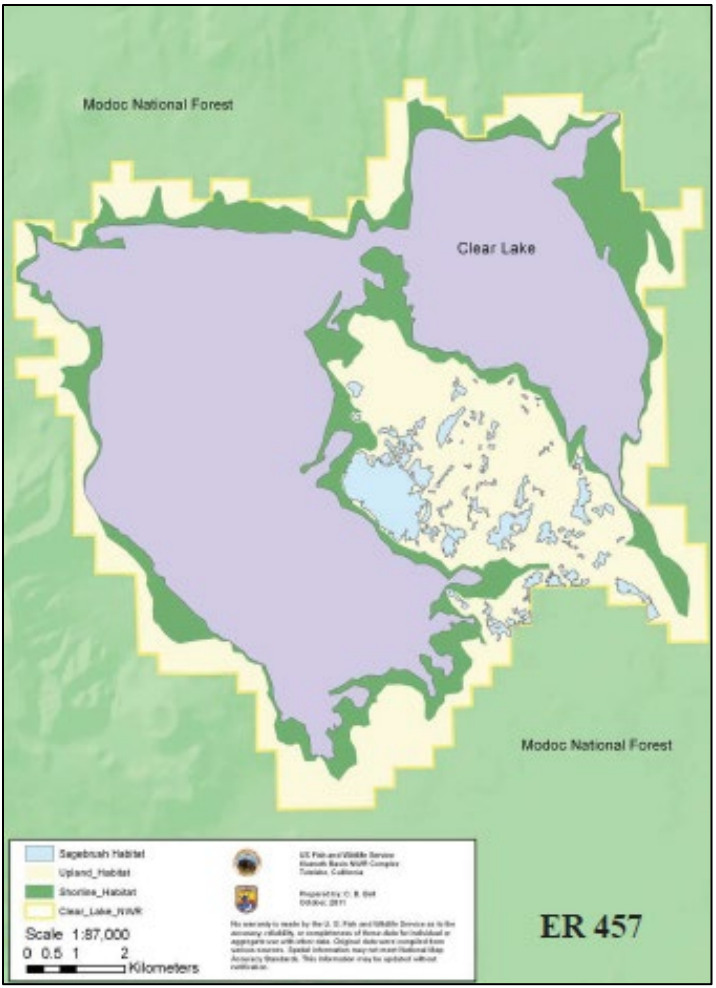
FWS incorporated an established Pesticide Use Proposal (PUP) process into the IPM plan. The purpose of the PUP process is "to evaluate the specifics of proposed chemicals, treatment sites, application methods, and sensitive aspects of use." A PUP committee administers the PUP process and oversees the approval of pesticides on the Refuges. That committee consists of representatives from FWS, the Bureau of Reclamation, and others "with expertise in integrated pest management, pesticide toxicology, crop production, land management, wildlife biology and the Endangered Species Act." Upon their review of pesticide data and ecological risk assessments, PUP committee members "determine whether or not a proposed pesticide use presents excessive risk to Refuge wildlife resources and is consistent with Interior and Service regulations and policies."

The Conservation Plan explained that the "decision to approve or disapprove a new chemical is based on extensive toxicity data, proposed use of the pesticide, environmental conditions, degradation rates, solubility, and availability of other cultural, biological, or less toxic alternatives." In addition to complying with applicable federal laws and its own regulations regarding pesticides, FWS engages in a

variety of management practices on the Refuges to further limit the adverse effects of pesticides, including the use of "no spray zones" and specially approved pesticides near water. The Conservation Plan does not approve any particular pesticide for use on any Refuge; instead, it created a series of processes for evaluating pesticides and managing their use.

C. Clear Lake Refuge

Western Watersheds challenges the Conservation Plan's continuation of managed grazing on portions of Clear Lake Refuge. President Taft established Clear Lake Refuge in 1911 as a preserve for native birds, including the greater sage-grouse. The Refuge contains a "lek," or breeding area, for sage-grouse. The lek is located on what is called the "U," a 5,000-acre peninsula that extends into Clear Lake and that contains sagebrush and native grasses. Sage-grouse depend on sagebrush for nesting. This map shows the U jutting out into Clear Lake with sagebrush habitat depicted in light blue, primarily on the western portion of the peninsula:



Clear Lake Refuge also includes habitat for two species of endangered fish: the Lost River suckerfish and the shortnose suckerfish. FWS listed both species as endangered in 1988.

Grazing has taken place in the Refuge area since the 1870s. And for decades, FWS has used "intensively managed cattle grazing" in Clear Lake Refuge "to promote

sage-steppe habitat to benefit greater sage-grouse."[2] The Plan discusses grazing in the context of the IPM plan "because the primary purpose of the grazing program would be to control invasive species." Grazing is used "to control invasive annual grasses and juniper seedlings, reduce wildfire fuels, and create a mosaic of short-grass habitat to meet wildlife objectives." The grazing traditionally occurred between mid-August and mid-November. The Conservation Plan included the use of this long-standing grazing tool as part of its no-action alternative for Clear Lake Refuge.

In another alternative, which FWS ultimately adopted, FWS considered an additional grazing period between March and mid-April. Roughly 300 to 500 cattle would be permitted to graze in one or two 1,500-acre pastures on east side of the U. The Conservation Plan explained that FWS "would use grazing to control exotic annual grasses and assist with restoration of habitat on the east side of the 'U' that was damaged by the Clear Fire in 2001."

The adopted alternative's proposed spring grazing was conditioned on "monitoring data" that would determine whether both, either, or neither of the planned pastures on the U should be grazed in a given year. To direct cattle away from the shoreline and keep them off the western half of the U (where sage-grouse nesting is more prevalent), the two pastures would also include "flagged, electric wire fencing[,] and water troughs would be installed at the upper ends of the pastures away from Clear Lake." "Experimental plots would initially be established to fine-tune this strategy (e.g., number of cattle, duration, and timing)," and the "grazing

[2] Sage-steppe is a grassland area dominated by sagebrush and other shrubs.

program would be phased out if it reduced the presence of exotic annual grasses to a great enough extent that native perennial grasses, forbs, and shrubs were successfully reestablished."

D. Procedural History

FWS began developing the Conservation Plan in spring 2010. In May 2010, FWS held four public meetings in different locations in California and Oregon. FWS also solicited and received numerous written comments and provided briefings to various elected officials. Over the years, FWS convened meetings with subject-matter experts and reviewed extensive scientific literature.

In May 2016, spurred in part by a district court order directing FWS to complete its review, FWS published a draft Conservation Plan. FWS then held two more public meetings and received nearly 800 additional comments. FWS addressed the comments, made revisions, and published the final Conservation Plan in December 2016. After publication, Western Watersheds, among others, submitted further comments to FWS.

In January 2017, the Department of the Interior adopted the final Conservation Plan in a Record of Decision (ROD). The ROD evaluated the alternatives FWS developed and selected one alternative for each Refuge, with modifications. The ROD also included an appendix responding to the comments that Western Watersheds and others had submitted after the Conservation Plan was finalized.

A week after the ROD was signed, Western Watersheds filed its complaint against FWS in federal court. CBD did the same two months later. The two cases were consolidated with two other challenges to the Conservation Plan.

Affirming the magistrate judge's comprehensive and well-reasoned recommendation, the district court granted summary judgment to FWS on all claims. We address some of those claims in two separate, concurrently issued opinions. In this opinion, we address CBD's challenges to pesticide management in Lower Klamath and Tule Lake Refuges, and Western Watersheds' challenges to grazing on Clear Lake Refuge.

II. Legal Standards

We review CBD's and Western Watersheds' challenges to the Conservation Plan under the Administrative Procedure Act (APA), "which authorizes courts to set aside agency actions, findings, and conclusions if they are 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'" *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 733–34 (9th Cir. 2020) (quoting 5 U.S.C. § 706(2)(A)).

We review de novo the district court's grant of summary judgment under the APA. *Alaska Oil & Gas Ass'n v. Pritzker*, 840 F.3d 671, 675 (9th Cir. 2016). Under the APA, our review of FWS's Conservation Plan is "deferential and narrow" and presumes the "agency's action is valid." *Id.* (quoting *Alaska Oil & Gas Ass'n v. Jewell*, 815 F.3d 544, 554 (9th Cir. 2016)). Agency action should be affirmed "so long as the agency considered the relevant factors and articulated a rational connection between the facts found and the choices made." *Id.* (quoting *Jewell*, 815 F.3d at 554). We review an agency's factual conclusions for substantial evidence. *Ctr. for Cmty. Action & Env't Just. v. FAA*, 18 F.4th 592, 598 (9th Cir. 2021).

CBD and Western Watersheds bring their challenges under three laws: the Refuge Act, the Kuchel Act, and

NEPA. The Refuge Act declares that each Refuge "shall be managed to fulfill the mission of the System, as well as the specific purposes for which that refuge was established." 16 U.S.C. § 668dd(a)(3)(A). The mission of the Refuge System is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats." *Id.* § 668dd(a)(2). Refuge purposes are defined as "purposes specified in or derived from the law . . . establishing, authorizing, or expanding a refuge." *Id.* § 668ee(10).

The Refuge Act requires FWS to prepare comprehensive conservation plans for each Refuge at least every 15 years. *Id.* §§ 668dd(e)(1)(A). The conservation plans must, among other things, "identify and describe . . . significant problems that may adversely affect the populations and habitats of fish, wildlife, and plants within the planning unit and the actions necessary to correct or mitigate such problems." *Id.* § 668dd(e)(2). The plans are meant to "provide[] long-range guidance and management direction to achieve the purposes of the refuge." 50 C.F.R. § 25.12(a) (2000). The plans are thus programmatic documents that govern the overall management and strategic direction of the Refuge. FWS is directed to "manage the refuge or planning unit in a manner consistent with the plan." 16 U.S.C. § 668dd(e)(1)(E).

The Refuge Act also governs FWS's management of Refuge uses. That Act provides that FWS "shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use." *Id.* § 668dd(d)(3)(A)(i). The Refuge Act defines a compatible use as one that, in the agency's "sound professional judgment . . . will not materially interfere with or detract

from the fulfillment of the mission of the System or the purposes of the refuge." *Id.* § 668ee(1).

The Kuchel Act is specific to the Klamath Basin Refuges and applies to the three refuges at issue here. The Kuchel Act was enacted in 1964 to prohibit private homesteading of Refuge lands, to "preserve intact the necessary existing habitat for migratory waterfowl in this vital area of the Pacific flyway, and to prevent depredations of migratory waterfowl on agricultural crops in the Pacific Coast States." *Id.* § 695k. The Kuchel Act declared that "all lands" within the subject Refuges were "hereby dedicated to wildlife conservation" and were to be administered "for the major purpose of waterfowl management, but with full consideration to optimum agricultural use that is consistent therewith." *Id.* § 695*l*. The Kuchel Act also specified that the Secretary of the Interior "shall, consistent with proper waterfowl management, continue the present pattern of leasing" in the Lower Klamath and Tule Lake Refuges. *Id.* § 695n.

NEPA, another environmental protection statute, forms the basis for most of the challenges we address. NEPA "does not mandate particular results, but simply provides the necessary process to ensure that federal agencies take a hard look at the environmental consequences of their actions." *N. Alaska Env't Ctr. v. Kempthorne*, 457 F.3d 969, 975 (9th Cir. 2006) (quoting *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999)). NEPA thus "protect[s] the environment by requiring that federal agencies carefully weigh environmental considerations and consider potential alternatives to the proposed action before the government launches any major federal action." *League of Wilderness Defenders–Blue Mountains Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1068 (9th Cir.

2012) (quoting *Barnes v. U.S. Dep't of Transp.*, 655 F.3d 1124, 1131 (9th Cir. 2011)).

To that end, NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). An EIS must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." *Id.* § 4332(E). The EIS must "present the environmental impacts of the proposal and alternatives in comparative form" to give a "clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14.[3] This requires disclosure of the environmental impacts of the proposed action and its alternatives, including their direct, indirect, and cumulative effects. *See id.* §§ 1502.16, 1508.7, 1508.8; *see also Ctr. for Env't L. & Pol'y v. U.S. Bureau of Reclamation*, 655 F.3d 1000, 1006–07 (9th Cir. 2011). NEPA also requires agencies to analyze a reasonable range of alternatives to the proposed action. 42 U.S.C. § 4332(E); *see also* 40 C.F.R. §§ 1501.2(c), 1502.14(a). But "for alternatives which were eliminated from detailed study," an agency need only "briefly discuss the reasons for their having been eliminated." *Id.* § 1502.14(a).

"In reviewing the adequacy of an EIS under NEPA, we employ 'a rule of reason' analysis to determine whether the discussion of the environmental consequences included in the EIS is sufficiently thorough." *Ctr. for Biological*

[3] While NEPA's implementing regulations were amended in September 2020, the 1978 versions were in effect at the time the ROD was issued. We thus cite the 1978 versions, which govern here.

Diversity, 982 F.3d at 734 (quoting *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1071 (9th Cir. 2002)). "The rule of reason guides 'both the choice of alternatives as well as the extent to which the [EIS] must discuss each alternative.'" *Am. Rivers v. FERC*, 201 F.3d 1186, 1200 (9th Cir. 1999) (quoting *City of Carmel-by-the-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997)). The rule of reason analysis is "'essentially the same' as an abuse of discretion analysis." *Ctr. for Biological Diversity*, 982 F.3d at 734 (quoting *Kern*, 284 F.3d at 1072). Thus, an "agency will have acted arbitrarily and capriciously only when 'the record plainly demonstrates that [the agency] made a clear error in judgment in concluding that a project meets the requirements' of NEPA." *Native Ecosystems Council v. Weldon*, 697 F.3d 1043, 1052 (9th Cir. 2012) (quoting *Tri-Valley CAREs v. U.S. Dep't of Energy*, 671 F.3d 1113, 1124 (9th Cir. 2012)) (alteration in original).

III. CBD Appeal

We begin with CBD's challenges to the Conservation Plan, which are threefold. First, CBD argues that FWS failed to consider reduced-pesticide alternatives for Lower Klamath and Tule Lake Refuges. Second, CBD argues that FWS failed to take a sufficiently hard look at the effects of pesticides on these Refuges. Third, CBD argues that FWS violated the Refuge and Kuchel Acts by permitting continued pesticide use on the Refuges.

These challenges lack merit. We hold that FWS did not act arbitrarily, capriciously, or contrary to law by continuing to use the Pesticide Use Proposal (PUP) process to evaluate potential pesticide applications on the Refuges, and by allowing for pesticide use as a last resort.

A. Reasonable Range of Alternatives

First, FWS did not act unlawfully under NEPA by not considering formal reduced-pesticide alternatives for Lower Klamath and Tule Lake Refuges. "NEPA requires an EIS to describe and analyze 'every reasonable alternative within the range dictated by the nature and scope of the proposal.'" *Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1087 (9th Cir. 2013) (quoting *Friends of Southeast's Future v. Morrison,* 153 F.3d 1059, 1065 (9th Cir. 1998)). But an EIS "need not consider an infinite range of alternatives, only reasonable or feasible ones." *City of Sausalito v. O'Neill*, 386 F.3d 1186, 1207 (9th Cir. 2004) (quoting *City of Carmel*, 123 F.3d at 1155). And, as noted, alternatives eliminated from detailed study need only be briefly discussed. *See id.*

In this case, the Conservation Plan considered four formal alternatives for Lower Klamath Refuge and three alternatives for Tule Lake. Each alternative, while differing in various other respects, incorporated and expanded the integrated pest management (IPM) plan that FWS had been using on the Refuges since 1998. The PUP process, by which specific pesticide applications may be studied and approved—"as a last line of defense against pests, not as the first option of control"—is just one of the IPM plan's many pest-control components. Alternative C, FWS's selected alternative for Lower Klamath Refuge, committed FWS to "evaluate and permit chemical applications according to Service and [Interior] policies," "scout, map, and control priority weed species with an emphasis on protecting high-priority wildlife habitats," and "[e]xpand use of non-pesticide tools to control invasive species in wetland and upland units (e.g., grazing, restoration plantings)." The selected alternative for Tule Lake Refuge, also Alternative C, included similar commitments.

CBD does not maintain that FWS should have considered a complete prohibition on chemical pesticide use on the Refuges. But it claims that FWS failed to consider a reasonable range of alternatives under NEPA because FWS did not consider mandating a reduction in existing pesticide use. We conclude that CBD's arguments are unavailing. FWS adequately explained that some amount of pesticide use was necessary on the Refuges to ensure sufficient crop production, on which Refuge waterfowl now depend. And FWS could conclude that reduced-pesticide alternatives would not have been reasonable given the uses and purposes of the Refuges. Thus, NEPA did not obligate FWS to consider reduced-pesticide alternatives.

The range of alternatives that an agency must consider under NEPA is based on the purpose and need of the proposed agency action. *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 865 (9th Cir. 2004). So we "begin[] by determining whether or not the Purpose and Need Statement was reasonable." *Id.* Here, FWS defined the purposes and needs of the Conservation Plan (which included the EIS) as "develop[ing] and implement[ing] a comprehensive 15-year management plan for the Refuge Complex consistent with refuge purposes; refuge goals and objectives; and applicable laws, regulations, and policies." FWS further articulated particular purposes for the covered Refuges, including "provid[ing] wetland and agricultural habitats that meet food and cover requirements sufficient to support migratory waterfowl." The agency's explanation of the purposes and needs of its proposed action was reasonable, and CBD does not argue otherwise.

The next question is whether FWS considered reasonable alternatives given the Conservation Plan's purposes and needs. *Westlands*, 376 F.3d at 868. "The

touchstone for our inquiry is whether an EIS's selection and discussion of alternatives fosters informed decision-making and informed public participation." *Id.* (quoting *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982)); *see also Pac. Coast Fed'n of Fishermen's Ass'ns v. Blank*, 693 F.3d 1084, 1099 (9th Cir. 2012) (explaining that agencies are required "to set forth only those alternatives necessary to permit a reasoned choice" (quoting *Presidio Golf Club v. Nat'l Park Serv.*, 155 F.3d 1153, 1160 (9th Cir. 1998))). In this case, FWS considered multiple pest-control methods and reasonably included a long-standing PUP process by which a committee of experts could review and, if necessary, approve, pesticide applications.

FWS fostered informed public participation in the Conservation Plan, which included consideration of reducing pesticide use. During the Conservation Plan's scoping process, which took place years before the Plan was eventually adopted, FWS solicited and received numerous public comments and held four public meetings. FWS summarized the scoping discussion in a report issued in January 2011. FWS explained that some commenters suggested that "agriculture enhances uses of the refuge[s] by many waterfowl" and that "crops supply more than 50% of feed for the Pacific Flyway." But it recounted how others argued that "agriculture is incompatible on national wildlife refuges." Similarly, "[m]any respondents called for totally prohibiting the use of chemicals including pesticides and fertilizers," with some maintaining "that non-organic farming should cease." There were also public comments about row crops, like onions, which were criticized for having "minimal wildlife use" and "requir[ing] pesticides and fertilizers." From the beginning of the planning process, therefore, FWS provided for "informed decision-making and informed public participation" as to pesticide use on the

Refuges, and specifically whether it should be reduced. *See Protect Our Cmtys. Found. v. Jewell*, 825 F.3d 571, 579 (9th Cir. 2016) (quoting *Churchill Cnty. v. Norton*, 276 F.3d 1060, 1071 (9th Cir. 2001)).

Following the scoping process, FWS determined that agriculture was a compatible use of the Refuges, subject to certain stipulations. That determination is the subject of one of our companion opinions in these consolidated appeals, in which we hold that FWS's decision to permit continued farming on Lower Klamath and Tule Lake Refuges was not arbitrary, capricious, or contrary to law. And in this case, FWS's decision to continue allowing a process by which specific pesticide applications can be approved largely followed from the decision to continue farming certain portions of the Refuges.

The Plan specifically explained that over time, agricultural crops had become an "integral" source of food for Refuge wildlife: grains grown on the Refuges "provide a rich source of carbohydrates" for waterfowl and "provide[] more food (kcal/acre) for less water than wetland plants," which is critical given water shortages. FWS thus concluded that Refuge agricultural programs are "a component of the overall habitat management program," and that crops grown on the Refuges are "an integral part of achieving waterfowl population objectives." Although some crops grown on Tule Lake Refuge, like horseradish and onions, "have no food value for waterfowl," FWS found that they were still "important crops in soil rotation for reducing pests and improving soil health," and they had historically been permitted "to obtain maximum lease revenues while consistent with proper waterfowl management."

Crop cultivation requires pest management. Underscoring this, the Conservation Plan recounted the

history of pesticide applications in Lower Klamath and Tule Lake Refuges, dating back to 1946, citing over a dozen studies and explaining that studies show low concentrations of pesticides in water bodies and limited adverse impacts on wildlife. To that end, the Conservation Plan merely incorporates and expands an IPM plan that has now been in place on the Refuges since 1998.

The Conservation Plan's allowance of pesticides was also limited, in that the IPM plan does not itself authorize the use of any particular pesticide. Instead, it provides a rigorous process through which farmers can request permission to apply a specific pesticide to a specific crop at a specific time. For this reason, among others, FWS reasonably declined to consider alternatives so detailed as to address individual pesticides, as that would have required a wider range of alternatives than would have been reasonable given the Conservation Plan's purposes and needs. *See Westlands*, 376 F.3d at 868. Adaptive management plans like the IPM plan, which provide "flexibility in responding to environmental impacts," are permissible under NEPA. *Protect Our Communities*, 825 F.3d at 582.

In responding to multiple public comments, FWS explained that pesticide applications are necessary to manage pests in the "highly altered nature of the refuge environment and surrounding area." FWS thus reasonably included a process by which some pesticide applications could be approved in each of the alternatives it developed. "Those challenging the failure to consider an alternative have a duty to show that the alternative is viable." *Alaska Survival*, 705 F.3d at 1087. And here, CBD has not provided a sufficient basis for questioning FWS's determination not to further consider reduced pesticide options.

CBD acknowledges that there are "fewer options to reduce pesticide use" in Lower Klamath Refuge, given how limited the pesticide use in that Refuge already is. CBD instead argues that FWS should have considered allowing only organic farming on Lower Klamath Refuge. But FWS explained in response to public comments that it would "not make organic agriculture a strict requirement" because it "is dependent on a consistent water supply and external economic forces that are beyond [FWS's] control." The Conservation Plan explained in detail the challenging water shortages that Lower Klamath Refuge faces. FWS also explained that "even in organic systems[,] over time crop pests tend to build up in the system, often precipitating a need to convert land back to conventional agriculture."

FWS's explanations for not mandating organic-only agriculture in Lower Klamath Refuge were based on its scientific judgment and are entitled to deference. *See Alaska Survival*, 705 F.3d at 1087 (explaining that "[w]ithout evidence to the contrary, we defer to the [agency's] technical expertise regarding" the feasibility of a proposed alternative); *Native Ecosystems*, 697 F.3d at 1051 ("A court generally must be 'at its most deferential' when reviewing scientific judgments and technical analyses within the agency's expertise under NEPA." (quoting *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011))). FWS therefore sufficiently explained its reasons for not considering an organic-only alternative. *See* 40 C.F.R. § 1502.14(a) (requiring agency to "briefly discuss the reasons" for eliminating alternatives from detailed study).

As to Tule Lake Refuge, CBD argues that FWS should have limited pesticide use "to only a few herbicides" and should have disallowed the planting of "insecticide-

intensive potatoes and onions," as FWS already does on Lower Klamath Refuge. But FWS explained that row crops like potatoes and onions, despite providing limited food value for waterfowl, are nonetheless valuable in reducing crop pests and improving soil health. The Kuchel Act also specifically contemplates row crops. *See* 16 U.S.C. § 695n (requiring that "not more than 25 per centum of the total leased lands may be planted to row crops"). Row crops require different and additional pesticides than the crops grown on Lower Klamath Refuge, justifying the flexibility that the PUP process provides in evaluating pesticide applications on the two Refuges.

CBD identifies no authority that would have required FWS to simplistically limit pesticide applications on Tule Lake Refuge to those permitted on Lower Klamath. FWS leases about 14,800 acres for farming on Tule Lake Refuge, versus only approximately 5,600 acres on Lower Klamath Refuge. It is understandable that the much larger farming area in Tule Lake would require a broader pesticide approach. The two Refuges also differ in terms of soil health, hydrology, and climate, which in turn leads to different crop-growing strategies. Given these differences, CBD has not shown that it would have been reasonable or feasible, *see City of Sausalito*, 386 F.3d at 1207, for FWS to impose identical restrictions on pesticide use on the two Refuges.

In sum, FWS adequately explained why a process by which pesticides could be approved for use on the Refuges was essential to meeting the Conservation Plan's purposes, and CBD has not shown that FWS unreasonably failed to address any feasible reduced-pesticide alternative.

B. "Hard Look" Analysis

We next consider whether, under NEPA, FWS took a sufficiently thorough "hard look" at the environmental effects of pesticides on the Refuges in concluding that pesticides could continue to be used with minimal environmental consequences. *See Ctr. for Biological Diversity*, 982 F.3d at 734. In performing this review, we do not "fly-speck" FWS's analysis and "hold it insufficient on the basis of inconsequential, technical deficiencies." *Swanson v. U.S. Forest Serv.*, 87 F.3d 339, 343 (9th Cir. 1996) (quoting *Or. Env't Council v. Kunzman*, 817 F.2d 484, 492 (9th Cir. 1987)). Instead, we "employ a 'rule of reason' to determine whether it contains 'a reasonably thorough discussion of the significant aspects of the probable environmental consequences.'" *Id.* (quoting *Or. Env't Council*, 817 F.2d at 492). Under NEPA, we "refrain from acting as a type of omnipotent scientist," *Tri-Valley CAREs*, 671 F.3d at 1126, and "must defer to an agency's decision that is 'fully informed and well-considered,'" *N. Alaska Env't Ctr.*, 457 F.3d at 975 (quoting *Save the Yaak Comm. v. Block*, 840 F.2d 714, 717 (9th Cir. 1988)).

The record confirms that FWS took a "hard look" at the direct, indirect, and cumulative effects of its decision to re-adopt and extend the PUP process for reviewing potential pesticide applications on the Refuges. *See* 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. The Conservation Plan explained that "[e]vidence of adverse impacts associated with current pesticide use on the refuges is limited." FWS further determined that the PUP process, which it described in considerable detail, ensures that only pesticide applications that "would likely cause minor, temporary, or localized effects to refuge biological resources and

environmental quality would be allowed for use." The agency sufficiently explained these conclusions.

The PUP process has been in use on the Refuges since it was analyzed and adopted as part of the 1998 IPM plan, which FWS incorporated into the Conservation Plan. In the Conservation Plan's 53-page appendix dedicated solely to the IPM plan, FWS thoroughly described the PUP process and explained how the process enables careful review of pesticide applications. FWS explained that the

> selective use of pesticides is based upon pest ecology (including mode of reproduction), the size and distribution of its populations, site-specific conditions (e.g., soils and topography), known efficacy under similar site conditions, and the capability to utilize best management practices . . . to reduce/eliminate potential effects to non-target species, sensitive habitats, and potential to contaminate surface and groundwater.

FWS has also emphasized that the PUP process is a "screening risk assessment . . . intended to be complemented by the National Pesticide Consultations done by the National Marine Fisheries Service, [FWS], and EPA." FWS's judgment that the PUP process is sufficiently rigorous for evaluation of pesticide applications is entitled to deference. *See Native Ecosystems*, 697 F.3d at 1051.

Although CBD suggests that FWS was required to revisit the 1998 IPM plan's analyses and reevaluate whether the PUP process remained sufficient, it was reasonable for FWS to decline to do so when it had no indication that the PUP process was inadequate. *See Dep't of Transp. v. Pub.*

Citizen, 541 U.S. 752, 767 (2004) (requiring no new EIS based on "new potential information" where it "would serve 'no purpose' in light of NEPA's regulatory scheme as a whole"). Nor has CBD shown that the 1998 IPM plan's analysis was so stale—only 12 years old at the time the planning process here began—that FWS could not reasonably rely on it. *See League of Wilderness Defenders/Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 763 (9th Cir. 2014) (explaining that although the agency's "surveys were aged—more than 15 years old by the time the Final EIS was released," there "was no reliable evidence that showed their results were likely incorrect," so the agency's conduct was not arbitrary or capricious). That is particularly so in the absence of CBD identifying any materially changed circumstances. *See* 40 C.F.R. § 1500.1(a) ("NEPA's purpose is not to generate paperwork or litigation, but to provide for informed decision making and foster excellent action.").

We also reject CBD's argument that FWS was required to examine specific pesticides in conducting the "hard look" analysis. The Conservation Plan did not approve particular pesticides, but instead re-adopted and extended the rigorous PUP process to approve pesticide applications where necessary. CBD points to nothing in NEPA or our case law that required granular evaluation of specific pesticides under these circumstances, particularly when, as here, FWS already publishes annually a complete listing of the approved pesticide applications. In any event, in an appendix to the Conservation Plan and in response to public comments, FWS included tables showing the current and potential future uses of pesticides on Lower Klamath and Tule Lake and provided a detailed spreadsheet containing information on pesticides that had been approved for use on the Refuges. The record thus reflects that FWS familiarized

itself with the specific pesticides that had been used on the Refuges.

In addition to the stiff controls that the PUP process imposes, and further supporting its "hard look," FWS based its conclusion that pesticide effects are minor on (1) an earlier analysis from the 1998 IPM plan's Environmental Assessment ("EA"), (2) a 2007 Formal Section 7 Consultation for the Implementation of the Pesticide Use Program on Federal Leased Lands, Tule Lake and Lower Klamath National Wildlife Refuges ("2007 BiOp"), and (3) recent monitoring data. Although CBD concedes that FWS properly incorporated these analyses into the Conservation Plan, CBD argues that they were insufficient to support a "hard look." We disagree.

The 1998 IPM plan's EA supports the agency's conclusions about the manageable effects of pesticides on the Refuges. *See Tri-Valley CAREs*, 671 F.3d at 1124 (explaining that "[a] court generally must be 'at its most deferential' when reviewing scientific judgments and technical analyses within the agency's expertise" (quoting *N. Plains*, 668 F.3d at 1075)). The EA found that "[n]o mortalities have been documented from current-generation pesticides in waterfowl, fish-eating birds, or raptors on the refuges." The EA also found "that no pesticide-related wildlife deaths ha[d] been documented on the [Refuges] since 1990." The EA described how "waterfowl numbers have risen dramatically where new wetlands . . . have been created, despite the use of pesticides adjacent to these wetlands." And the EA discussed a variety of studies showing declines in pesticide concentrations on the Refuges, including one that specifically found in the Tule Lake sumps "only ultratrace to nondetectable concentrations of pesticides." *See* 43 C.F.R. § 46.120(a) ("When available,

the [agency] should use existing NEPA analyses for assessing the impacts of a proposed action and any alternatives.").

Consistent with the EA, the 2007 BiOp on which FWS relied similarly found that "the use of pesticides and fertilizers on federal lease lands would not likely adversely affect Lost River sucker or shortnose sucker." In addition to these two earlier analyses, FWS relied on various other studies that supported its findings. For example, citing three past studies, FWS noted that "more recently, no pesticides have been documented in refuge waters at concentrations that are toxic to fish and wildlife." And given the absence of material changes at the Refuges in the intervening years, FWS could reject CBD's contention that these studies were too dated. *See Native Ecosystems*, 697 F.3d at 1051 ("[A]n agency must have discretion to rely on the reasonable opinions of its own qualified experts.").

Recent monitoring data underscores the Conservation Plan's hard-look analysis and supports FWS's view that the PUP process has not led to adverse environmental consequences. In 2007 and 2011, FWS conducted water sampling at four locations in Tule Lake adjacent to leased land farming operations (Tule Lake is the Refuge that CBD identifies as involving greater pesticide use). FWS's sampling was conducted every two weeks during the pesticide application seasons.

During the first monitoring season, of the 51 samples, 160 compounds, and 3,260 analyses that were examined, only two pesticide detections raised any concerns, and both were low-level detections. During the second monitoring season, which took place after the Conservation Plan's scoping had concluded, only two pesticide compounds were detected, and the overall monitoring "suggest[ed] that no

pesticides are entering Tule Lake from the application of pesticides on federal lease lands." FWS thus concluded that the data "shows that of the pesticides applied to croplands on Tule Lake Refuge only a few are present in the water body and at concentrations low enough that they should not be adversely affecting fish within the lake." Collectively, these various findings support FWS's determination that existing pesticide use under the PUP process did not produce adverse environmental effects on the Refuges.

CBD's remaining challenges to FWS's hard-look analysis are equally unpersuasive. CBD complains that, even if the Conservation Plan reflects sufficient consideration of the direct effects of pesticides, FWS failed to consider indirect and cumulative effects. CBD chiefly relies on our decision in *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372 (9th Cir. 1998), which remanded for further analysis a Forest Service decision involving timber sales. *Id.* at 1382. But *Neighbors of Cuddy Mountain* is readily distinguishable because it involved a truly bare record. There, the Forest Service included almost no quantitative data and failed to include information about the core aspects of the proposed agency action. *See id.* at 1379 (explaining that the agency "ha[d] failed to even mention the number or percentage of trees" affected).

In this case, by contrast, FWS has reviewed and provided extensive information about the years-long process of developing the multi-thousand-page Conservation Plan and appendices, of which pesticide use is just one component. As we have described, even as to that component, the PUP process prescribes a detailed review for every pesticide use, and FWS has incorporated and reasonably relied upon earlier analyses, including the 1998 IPM plan's EA, the 2007 BiOp,

and recent monitoring data. FWS also provided extensive details on every pesticide that had been approved for use on the Refuges. Against this substantial body of scientific evidence, FWS's recognition that some of the studies it relied on contained gaps, and that a lack of data made certain detailed assessments difficult, does not render the agency's NEPA analysis inadequate. *See San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 592 (9th Cir. 2014) (explaining that an agency need not support its findings "with anything approaching scientific certainty" (quoting *Indus. Union Dep't v. Am. Petroleum Inst.*, 448 U.S. 607, 656 (1980) (plurality opinion))).

In addition, FWS further addressed the indirect effects of potential pesticide applications in response to public comments, pointing out, among other things, that the PUP process itself considers indirect effects. FWS also explained that because it "would follow all pesticide label restrictions and [best management practices], pesticides would not be applied directly to, or within the no-spray buffer of, surface waters." This meant that "indirect impacts to aquatic and terrestrial species that use refuge aquatic resources for food, cover, nesting, etc. would not be likely to occur."

As to cumulative effects, and in addition to the scientific evidence we have already discussed, the Conservation Plan included an additional section reviewing the cumulative effects of various Refuge projects. CBD identifies no authority requiring FWS to consider the cumulative effect of every pesticide application approved by the PUP process when the Conservation Plan did not approve any specific pesticides for use. *See, e.g.*, *Selkirk Conservation All. v. Forsgren*, 336 F.3d 944, 964 (9th Cir. 2003) (holding that FWS "may employ any method that adequately considers cumulative impacts" under the Endangered Species Act

(ESA) and was not required to "list, detail, and discuss each and every forest practices application"); *Mont. Wilderness Ass'n v. Connell*, 725 F.3d 988, 1003 (9th Cir. 2013) (affirming an agency's resource management plan in relevant part "notwithstanding the absence of a cumulative impact section" where the agency's cumulative impact analysis was reflected elsewhere in the EIS). FWS need only study those cumulative effects that are "reasonably foreseeable," 40 C.F.R. § 1508.7, and CBD has not demonstrated that FWS acted contrary to this mandate.

In sum, the Conservation Plan adopts and expands a pesticide-approval process that has been successfully used on the Refuges for over 20 years. Under the PUP process, every specific pesticide application is reviewed in detail by a committee of experts, pesticides are approved only "when other IPM methods are impractical or incapable of providing adequate control, eradication, or containment," and pesticides are applied subject to various restrictions and best practices. Various studies have confirmed the effectiveness of the PUP process in controlling the potentially harmful effects of pesticides on the Refuges. On these facts, the Conservation Plan's discussion of the effects of pesticides reflected the required "hard look."

C. Refuge Act and Kuchel Act

For the same reasons that FWS's inclusion of the PUP process for Lower Klamath and Tule Lake Refuges does not violate NEPA, it does not violate the Refuge Act or the Kuchel Act either. As we have explained, FWS's inclusion of the PUP process reflected its reasoned scientific judgment that some pesticide applications could be necessary to ensure a continued food supply for waterfowl, and that PUP-approved pesticide applications would have only minor effects on wildlife. Just as CBD has not shown that FWS

acted unreasonably under NEPA, it has not shown that FWS failed to ensure that pesticide use is a compatible use of the Refuges or that it is not consistent with proper waterfowl management under the Kuchel Act. *See* 16 U.S.C. § 668dd(d)(3)(A)(i); *id.* §§ 695*l*, 695n. We thus reject CBD's challenges to the Conservation Plan's approach to pesticide applications on Lower Klamath and Tule Lake National Wildlife Refuges.

IV. Western Watersheds' Appeal

We turn next to Western Watersheds' appeal. Western Watersheds challenges FWS's decision to continue managed livestock grazing on Clear Lake Refuge. Western Watersheds argues that FWS violated NEPA by failing to consider a formal reduced-grazing alternative and by failing to take a hard look at the effects of continued grazing on the greater sage-grouse and two species of suckerfish. Western Watersheds further maintains that FWS violated the Refuge Act because, in its view, grazing is an incompatible use of the Refuge. We hold, however, that FWS did not act arbitrarily, capriciously, or contrary to law in continuing the long-standing practice of managed grazing on Clear Lake Refuge.

A. Reasonable Range of Alternatives

The Conservation Plan considered two alternatives for grazing on Clear Lake Refuge. Under Alternative A, the no-action alternative, FWS would continue authorizing "intensively managed cattle grazing" on the Refuge between mid-August to mid-November. Under Alternative B, FWS would add an experimental grazing period in the spring, creating new pastures to be "grazed with 300 to 500 cattle from March 1 to mid-April." The agency ultimately adopted Alternative B.

Western Watersheds argues that FWS violated NEPA by not considering a reduced-grazing or no-grazing alternative. But FWS adequately explained in the Conservation Plan why these alternatives were not reasonable. We again start with the Conservation Plan's unchallenged statement of purposes and needs, *see Westlands*, 376 F.3d at 865, which explained that the agency's objective was to "develop and implement a comprehensive 15-year management plan for the Refuge Complex consistent with refuge purposes; refuge goals and objectives; and applicable laws, regulations, and policies." The very first goal that FWS included for Clear Lake Refuge was to "[p]rotect, maintain, and restore sagebrush-steppe and associated upland and wetland communities characteristic of the Great Basin ecosystem."

FWS was required only to "'briefly discuss' the reasons" for eliminating from detailed consideration a reduced-grazing alternative. *See Protect Our Communities*, 825 F.3d at 581 (quoting 40 C.F.R. § 1502.14(a)). And "[t]he rule of reason 'guides both the choice of alternatives as well as the extent to which the [Plan] must discuss each alternative.'" *City of Sausalito*, 386 F.3d at 1207 (quoting *City of Carmel*, 123 F.3d at 1155).

Here, FWS provided sufficient reasons for not including a reduced-grazing alternative for Clear Lake Refuge. Most centrally, the Conservation Plan explained grazing was necessary to promote sage-steppe habitat, on which the greater sage-grouse depends. In particular, grazing was needed to "control priority weed species with an emphasis on protecting high-priority wildlife habitats," "control invasive annual grasses and juniper seedlings," "reduce wildfire fuels," "assist with restoration of habitat on the east side of the 'U' Unit that was damaged by the Clear Fire,"

and "allow for accelerated sagebrush restoration and prevent further destruction of this desired habitat."

To ensure that grazing "would support the Refuge's habitat goals, would not conflict with the other Refuge goals, and would not materially interfere with or detract from fulfillment of Clear Lake NWR's purposes or the Refuge System's mission," FWS discussed various scientific analyses, cited nearly thirty academic sources, and imposed more than a dozen stipulations on participating ranchers. Far from consisting of "only narratives of expert opinions," *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 996 (9th Cir. 2004), the Conservation Plan described the manner in which grazing would continue to be implemented and explained that, for the spring grazing period, "[e]xperimental plots would initially be established to fine tune th[e] strategy (e.g., number of cattle, duration, and timing)." In addition, the "mix, acreage, locations, and timing of management techniques deployed during any particular year would be based on an assessment of current and likely future habitat conditions and wildlife needs."

In response to Western Watersheds' comments about the potential harm that grazing could cause wildlife, FWS "disagree[d] that habitat management using prescriptive grazing, herbicide treatments, and juniper removal would harm resources on the refuge." FWS described "invasive annual grasses and the western juniper" as a "management challenge," with western juniper constituting "one of the greatest risks to the continued existence of sage grouse in this area." Juniper "out-competes desirable vegetation (e.g., sagebrush, other shrubs, forbs, and grasses)" that sage-grouse rely on, with the Conservation Plan noting that "[j]uniper expansion has been documented as one cause for greater sage-grouse to abandon leks." Other invasive

grasses, like cheatgrass and medusahead, also "out-compete perennial bunchgrasses and some other native plants (e.g., forbs and sagebrush) that provide valuable wildlife habitat." These invasive grasses at the same time "provide an abundance of fine fuels for wildfires and can increase the intensity and severity of wildfires." FWS thus explained that grazing "is used to create short grass areas for spring foraging by geese; reduce the extent of exotic annual grasses; help rehabilitate previously burned sagebrush habitats by providing native shrubs, bunchgrasses, and forbs with a competitive edge; and reduce the quantity of fine fuels and the potential for future wildfires" (which, FWS noted, "can set back sagebrush restoration for decades"). In short, FWS concluded that managed grazing was necessary for ensuring sage-grouse habitat, and it sufficiently explained that position.

Western Watersheds also focused its public comments on the fact that no "reductions or removal of livestock" were analyzed in the Conservation Plan. But FWS in response reiterated that "grazing is a management method that is highly controlled at Clear Lake," and that the "the timing, intensity[,] and duration of grazing are all managed to produce a specific result based on the habitat objectives." In the spring, for instance, "non-native cheatgrass and medusahead are preferentially grazed by cattle," so FWS therefore proposed "short-term, intense grazing at this time of year specifically to help slower growing native bunchgrasses flourish." FWS cited supporting research "indicat[ing] that this kind of grazing . . . reduces annual grasses and increases native perennials and forbs," and concluded that grazing opens "areas that would otherwise be choked with vegetation and sub-optimal for use by waterfowl."

FWS also rejected using only alternative methods of controlling invasive plants, without using grazing. In particular, FWS explained that other alternatives, such as herbicides or machine mowing, would not be fully effective in controlling invasive species, and that mowing in some areas posed particular fire risks. In doing so, FWS did not "end[] its inquiry at the beginning" or "uncritically assume[]" a particular result. *Block*, 690 F.2d at 767. Instead, FWS reasonably explained that grazing was necessary for sage-grouse habitat preservation and restoration, and then considered a reasonable range of grazing alternatives.

Western Watersheds nonetheless argues that reduced grazing and no grazing were reasonable alternatives that had to be considered. In this regard, Western Watersheds relies principally on our decision in *Western Watersheds Project v. Abbey*, 719 F.3d 1035 (9th Cir. 2013). But *Abbey* was a very different case. There, we held that the Bureau of Land Management was required to consider reduced-grazing alternatives in planning a national monument. *Id.* at 1050–53. But *Abbey* involved a challenge to both an EIS for the national monument as well as an Environmental Assessment (EA) for a particular allotment of land. *Id.* at 1039. *Abbey* held that the EIS complied with NEPA, but the site-specific EA did not. *Id.* at 1045, 1053. The distinction mattered: "Where modification of grazing practices is not considered at a programmatic level . . . it is all the more important that agency actions on site-specific areas give a hard and careful look at grazing impacts." *Id.* at 1051.

Here, the Conservation Plan is a programmatic document covering five National Wildlife Refuges, similar to the EIS that withstood a NEPA challenge in *Abbey*. And even so, unlike the EA in *Abbey*, the Conservation Plan

sufficiently analyzes site-specific grazing effects. For instance, the Clear Lake Refuge compatibility determination acknowledged that excessive grazing can "result in vegetation trampling" and "soil disturbance/erosion," and can "transfer invasive species," among other undesirable effects. But FWS concluded that its grazing program is properly managed and would be unlikely to produce these harms, particularly as "grazing has occurred on the Refuge for decades without major problems associated with these effects."

Abbey does not mandate consideration of reduced-grazing alternatives in situations, like here, in which the agency has provided sufficient explanation for its decision not to analyze an alternative that it does not view as reasonable. FWS sufficiently explained that a reduced-grazing alternative was not reasonable, given the Conservation Plan's purposes and needs. *See Protect Our Communities*, 825 F.3d at 581; *Alaska Survival*, 705 F.3d at 1087. Ultimately, FWS concluded that continued grazing would "help achieve its wildlife and habitat objectives," while reduced grazing would "have the opposite overall effect." It is not our role to question that informed scientific judgment. *See Ctr. for Biological Diversity v. Ilano*, 928 F.3d 774, 782–83 (9th Cir. 2019) (explaining that the Forest Service had not acted arbitrarily or capriciously because it had "relied upon scientific studies and its own expert judgment, to which we must defer").

Western Watersheds further argues that FWS should have at least considered an alternative that would eliminate livestock grazing on the western portion of Clear Lake Refuge on the adjacent Modoc National Forest (which is not part of the U). Based on an interagency agreement with Modoc, about 300 head of cattle are allowed to access only

part of the Refuge, and even then only for about three weeks a year beginning in mid-July, long after the sage-grouse nesting period in the spring.

FWS explained the benefits of limited grazing on the Refuges generally, and as to Modoc in particular: grazing in that specific area "provide[s] the refuge biological benefits by enhancing Canada goose grazing and reducing fuels and fire threats." The Conservation Plan also relied on an earlier analysis of the effects of Modoc grazing prepared by the Forest Service that was only two years old at the beginning of the planning process, and that permitted the grazing to continue. Western Watersheds has not shown that Modoc livestock would materially interfere with sage-grouse on the U, let alone with any other wildlife. FWS thus adequately explained its reasons for not considering an alternative that would eliminate limited grazing with cattle from the adjacent Modoc National Forest. And while Western Watersheds argues that FWS should have simply fenced the western boundary to keep cattle out of the Refuge, FWS reasonably explained that a fence could harm wildlife and impede their travel.[4]

In short, FWS reasonably explained that managed grazing on Clear Lake Refuge was essential to protecting

[4] In letters filed pursuant to Federal Rule of Appellate Procedure 28(j), Western Watersheds and CBD argue that our recent decision in *Environmental Defense Center v. Bureau of Ocean Energy Management*, 36 F.4th 850 (9th Cir. 2022), indicates that FWS's alternatives analyses were deficient. But in *Environmental Defense Center*, which involved an agency's consideration of oil well stimulation treatments that it wrongly believed would not be used more than five times per year, the agency failed to consider a reasonable range of alternatives. *Id.* at 876–78. Here, by contrast, FWS considered a reasonable range of alternatives given the Conservation Plan's purpose and need.

and restoring sage-grouse habitat. FWS thus did not violate NEPA by failing to consider a formal reduced-grazing alternative.

B. "Hard Look" Analysis

FWS also took a sufficiently hard look at the effects of grazing on Clear Lake Refuge. We again apply a "'rule of reason' analysis to determine whether the discussion of the environmental consequences included in the EIS is sufficiently thorough." *Ctr. for Biological Diversity*, 982 F.3d at 734 (quoting *Kern*, 284 F.3d at 1071). Western Watersheds argues that FWS failed to give adequate consideration to the effects of grazing on greater sage-grouse and two species of endangered suckerfish. As we now explain, these additional challenges fail.

1

We start with the sage-grouse. The Conservation Plan discussed at length the potential effects of grazing on sage-grouse and why grazing would be beneficial to sage-grouse habitat. Grazing "would give native perennial grasses and forbs a competitive advantage, help restore native habitats, and reduce the abundance of fine fuels," thus lessening "the frequency, intensity, and spread of wildfires" and "enhanc[ing] the growth and survival of shrubs, such as sagebrush, that are very slow-growing." "This would all benefit sage brush-obligate species, such as sage grouse, that prefer habitats composed of forbs, moderate-height grasses, and larger-diameter sagebrush." With respect to the new spring grazing period, FWS explained that "light to moderate spring grazing could also make forbs more accessible to pre-laying sage grouse hens by removing standing herbage."

But FWS also recognized that improperly managed grazing could "prevent nesting attempts; cause nest abandonment; trample nests, eggs, and young; and otherwise disturb ground-nesting birds." FWS acknowledged some uncertainty as to the amount of competition "for food resources on the lakeshore between cattle, mule deer, pronghorn, and sage grouse," and thus committed to investigating experimental enclosures to allow "grasses and forbs [to] grow tall and become available to deer and sage grouse broods (as they are able to access the area inside the e[n]closure while cattle are not able to enter)." Overall, FWS concluded that the negative effects of the limited, managed grazing program on sage-grouse were outweighed by the positive effects of the program.

Western Watersheds principally takes issue with the agency's determination that the planned spring grazing would not significantly disturb sage-grouse nests. But FWS explained that the spring grazing—the only grazing that would overlap with the sage-grouse nesting season—would occur on the fire-damaged east side of the U, and "no hens are known to nest in that area due to the lack of sage brush cover." Western Watersheds disputes this, but the agency's factual determination, which is based on nearly a decade of monitoring data, merits deference. *See Native Ecosystems*, 697 F.3d at 1051; *N. Plains*, 668 F.3d at 1075.

The record also demonstrates that in 2013, the most recent year that data was available, nesting attempts only took place on the western portion of the U. Western Watersheds dismisses the 2013 nesting season as anomalous, pointing instead to data from the California Department of Fish and Game. But Western Watersheds has not demonstrated that this data establishes more than a handful of successful nesting attempts between 2007 and

2012 in the new areas that FWS would allow for grazing. And FWS did not rule out the possibility of future hens nesting on the east side of the U. Indeed, a driving purpose of the grazing program is to restore sagebrush habitat in that area, and hopefully increase successful sage-grouse nesting. FWS thus emphasized that the spring grazing program was experimental and subject to monitoring. Moreover, FWS reasonably determined that even to the extent grazing would disturb sage-grouse nests, "the larger and longer-term habitat benefits of a properly conducted program would far outweigh such negative effects."[5]

Western Watersheds also maintains that FWS failed to evaluate the combined effects on sagebrush habitat of adding a spring grazing period to the existing fall grazing period. That argument is unavailing. Western Watersheds' argument is at odds with the agency's considered view of the grazing program, which FWS believes will improve sage-grouse habitat over time, not deplete it. FWS explained that "when properly managed, this habitat management practice would be expected to *increase* the value of Refuge habitats for a diversity of wildlife species, including sage grouse and geese." (Emphasis added).

On this score, the Conservation Plan included as support for its cumulative impact analysis the joint "Conservation and Recovery Strategy for Sage-Grouse (*Centrocercus urophasianus*) and Sagebrush Ecosystems Within the

[5] Western Watersheds argues the Conservation Plan provided only a brief response to a study by Michael D. Reisner, et al., suggesting that large-scale grazing could harm native grasses. But that does not render FWS's NEPA analysis deficient. The record reflects a robust consideration of the available scientific evidence, and "FWS is free to choose among experts." *Zinke*, 900 F.3d at 1068 (citing *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)).

Devil's Garden / Clear Lake Population Management Unit"—or "Sage-Grouse Recovery Plan" for short. That separate multi-agency plan to grow Clear Lake Refuge's sage-grouse population was developed just two years before the Conservation Plan's scoping process began. And it specifically included spring and fall grazing periods as part of the sage-grouse recovery strategy. While Western Watersheds may disagree with the agency's reasoned scientific judgment about the effects of grazing on sage-grouse habitat, the Conservation Plan does not reflect a failure to consider the cumulative effects of grazing on sage-grouse.[6]

For the same reason, we reject Western Watersheds' argument that FWS failed to evaluate the cumulative effects to sage-grouse of grazing on the adjacent Modoc National Forest. The Modoc livestock do not access the U. FWS's conclusion that managed grazing would be conducive to sage-grouse recovery, based on its considered evaluation of the grazing program as a whole, a fortiori applies to the effects of the more minimal, incidental Modoc grazing on the Refuge.

[6] In referencing the Sage-Grouse Recovery Plan, FWS did not improperly "tier" to it. "'Tiering refers to the coverage of general matters in broader environmental impact statements . . . with subsequent narrower statements . . . incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.'" *Klamath-Siskiyou*, 387 F.3d at 997 (quoting 40 C.F.R. § 1508.28). FWS did not tier to the Sage-Grouse Recovery Plan or attempt to use it as a substitute NEPA analysis. Instead, FWS performed its own NEPA analysis and merely cited the Sage-Grouse Recovery Plan for additional support.

We thus hold that the agency took a sufficiently hard look at the effects of grazing on sage-grouse, including the cumulative effects.

2

We further conclude that the Conservation Plan took a sufficiently hard look at the effects of managed livestock grazing on suckerfish in Clear Lake Refuge.

FWS acknowledged that grazing "can adversely affect aquatic environments," but concluded that it had "no empirical data that shows that current grazing practices adversely affect the primary constituent elements (PCEs) of critical habitat for suckers in Clear Lake." The Conservation Plan explained that suckerfish spawn in upstream rivers from February through May (when the spring grazing would occur). The Plan also recognized that "[l]arval habitat is generally along the shoreline," which grazing cattle could access. Shoreline habitat is often "associated with emergent aquatic vegetation," which "provides cover from predators, protection from currents and turbulence, and abundant prey." But although "[e]xcessive grazing could result" in "turbidity" if "livestock were allowed access to surface waters," FWS believed that because grazing at the Refuge is "localized and seasonal," any such effect would likely be "only occasional, of short duration[,] and no more than minor." FWS's experimental spring grazing pastures would also include water troughs distant from the lakeshore to discourage livestock from accessing the shoreline.

In addition, FWS emphasized that "grazing has occurred on the Refuge for decades without major problems associated with [negative] effects, and stipulations associated with this use would greatly reduce the likelihood and significance of any potential impacts of this nature."

This was not an admission that the effects of grazing on Clear Lake suckerfish was "unknown," *see Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 732–733 (9th Cir. 2001), *abrogated on other grounds by Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139 (2010), but a recognition that grazing was not known to have been harmful based on extensive past experience. And in any event, the agency added that "consultation for the [Conservation Plan] will be conducted pursuant to section 7 of the federal ESA, for federally-listed species and their critical habitat," which includes suckerfish, and "conservation measures . . . will be implemented to protect listed species and their habitat that occur on the refuge, as applicable."

To this end, within days of adopting the Conservation Plan, and as it indicated it would, FWS issued a 2017 Biological Assessment (BA) to evaluate further the effects of the Conservation Plan's management actions, including Clear Lake grazing, on eleven threatened species. The 2017 BA, though not a replacement for the NEPA analysis that FWS included in the Conservation Plan, was contemplated in the Plan as a further protective measure for threatened species. Like the Conservation Plan, the BA acknowledged the potential for indirect "contamination of aquatic habitats" and "increased turbidity" when grazing is "done without consideration of the timing of entrance and egress, placement of watering systems, and mineral blocks." But the 2017 BA concluded that "[t]here are no direct effects to suckers with grazing on the refuge where it is used." The BA also addressed possible reductions in suckerfish food supply but found that the "reductions would likely be a secondary effect to impacts that resulted from direct effects and may not be notic[ed] or measurable for multiple years." The BA ultimately concluded that "[b]ased on available

species occurrence data, knowledge of seasonal habitat usage, discussions with species experts, and implementation of best management practices, [the] management actions outlined above and in the [Conservation Plan] may affect[] but are not likely to adversely affect Lost River or shortnose suckers."

FWS also was not obligated to conduct additional studies into the effects of grazing on suckerfish. When there is "incomplete information relevant to reasonably foreseeable significant adverse impacts" that is "essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant," an agency must obtain and include the missing information. 40 C.F.R. § 1502.22(a); *see also WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 927 (9th Cir. 2015). But here the agency reasonably determined—based on the long history of grazing on the Refuge and the limits FWS imposed on it—that grazing would not have materially adverse effects on suckerfish. Western Watersheds has not demonstrated that other information was "essential to a reasoned choice among alternatives." *See* 40 C.F.R. § 1502.22(a).[7]

Western Watersheds also maintains that FWS failed to give adequate consideration to the cumulative effects of grazing on suckerfish. But FWS said in the Conservation Plan's "Cumulative Impacts" section that "adverse affects to [suckers, among others] are not likely." FWS also relied on a joint Biological Opinion issued in 2013 by FWS and the

[7] To the extent that Western Watersheds relies on an internal reviewer's comments about the Conservation Plan's treatment of suckerfish, FWS responded to that comment by committing to producing the BA that was issued within days of the Conservation Plan, and that addressed the reviewer's concerns.

National Marine Fisheries Service, where "[c]umulative effects to both species of sucker [we]re enumerated." FWS proceeded to discuss a variety of threats to suckerfish populations, including "ongoing warming and drought," and concluded that the best way to support suckerfish populations was "to improve water quality" and quantity—which, for reasons previously discussed, remains a substantial challenge for FWS in managing the Refuges. The 2017 BA similarly considered the cumulative effects to suckerfish of "future, State, tribal, local, or private actions that are reasonably certain to occur," and did not anticipate any adverse cumulative effects to suckerfish as a result of Clear Lake grazing.

Finally, the Conservation Plan explained that the suckerfish population was threatened for reasons independent of grazing. The Conservation Plan describes suckers as "relatively abundant in Clear Lake," but with "lower frequency of large individuals present compared to data from the 1990s," suggesting "relatively good recruitment but low adult survivorship." The Plan recounted how the suckerfish population was dependent on sufficient water levels. In other words, the threat to sucker populations is not that larvae have inadequate shoreline habitat, as one might expect if grazing were significantly degrading the shoreline. To this point, FWS has explained that the decline in suckerfish population over time is attributable to a 64% loss of lake and wetland habitat and to "blocked access to spawning and rearing areas, low instream flows, entrainment losses resulting from diversions, and other factors."

For all of these reasons, the agency took a sufficiently hard look at the effects of grazing on suckerfish.

C. Refuge Act

For the same reasons that FWS's decision to continue managed grazing on Clear Lake Refuge does not violate NEPA, it does not violate the Refuge Act either. Western Watersheds argues that the agency failed to ensure that grazing was a compatible use of the Refuge. *See* 16 U.S.C. § 668dd(d)(3)(A)(i). But, as explained, FWS reasonably decided to continue managed grazing for the benefit of sage-grouse, and, for the same reasons, reasonably determined that grazing would "not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge." *See* 16 U.S.C. § 668ee(1). FWS thus did not violate the Refuge Act in authorizing continued grazing on Clear Lake Refuge.

* * *

For the foregoing reasons, the district court's grant of summary judgment to FWS on CBD's and Western Watersheds' challenges is

AFFIRMED.