

FOR PUBLICATION

**UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

No. 18-36030

D.C. Nos.
9:17-cv-00089-DLC
9:17-cv-00117-DLC
9:17-cv-00118-DLC
9:17-cv-00119-DLC
9:17-cv-00123-DLC
9:18-cv-00016-DLC

OPINION

2 CROW INDIAN TRIBE V. STATE OF WYOMING

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE
INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

and

STATE OF WYOMING,
*Intervenor-Defendant-
Appellant.*

CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36038

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

STATE OF WYOMING,
Intervenor-Defendant,

and

SAFARI CLUB INTERNATIONAL;
NATIONAL RIFLE ASSOCIATION
OF AMERICA, INC.,
*Intervenor-Defendants-
Appellants.*

CROW INDIAN TRIBE V. STATE OF WYOMING

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CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT,

Plaintiffs,

and

ROBERT H. ALAND,
Plaintiff-Appellant,

No. 18-36050

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

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v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE
INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants-Appellees,

STATE OF WYOMING; SAFARI
CLUB INTERNATIONAL;
NATIONAL RIFLE ASSOCIATION
OF AMERICA, INC.;
SPORTSMEN'S ALLIANCE
FOUNDATION; ROCKY
MOUNTAIN ELK FOUNDATION;
STATE OF IDAHO,

*Intervenor-Defendants-
Appellees.*

CROW INDIAN TRIBE V. STATE OF WYOMING

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CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36077

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

and

STATE OF IDAHO,
*Intervenor-Defendant-
Appellant.*

CROW INDIAN TRIBE V. STATE OF WYOMING

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CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36078

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,
Defendants-Appellants.

CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36079

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

and

WYOMING FARM BUREAU
FEDERATION; WYOMING STOCK
GROWERS ASSOCIATION;
CHARLES C. PRICE; W&M
THOMAN RANCHES, LLC,

*Intervenor-Defendants-
Appellants.*

CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36080

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

and

STATE OF MONTANA; MONTANA
DEPARTMENT OF FISH,
WILDLIFE AND PARKS,

*Intervenor-Defendants-
Appellants.*

CROW INDIAN TRIBE; CROW
CREEK SIOUX TRIBE; STANDING
ROCK SIOUX TRIBE; PIIKANI
NATION; THE CRAZY DOG
SOCIETY; HOPI NATION BEAR
CLAN; NORTHERN ARAPAHO
ELDERS SOCIETY; DAVID
BEARSHIELD; KENNY
BOWEKATY; LLEVANDO FISHER;
ELISE GROUND; ARVOL
LOOKING HOUSE; TRAVIS
PLAITED HAIR; JIMMY ST.
GODDARD; PETE STANDING
ALONE; NOLAN J. YELLOW
KIDNEY; HUMANE SOCIETY OF
THE UNITED STATES; THE FUND
FOR ANIMALS; WILDEARTH
GUARDIANS; NORTHERN
CHEYENNE TRIBE; SIERRA
CLUB; CENTER FOR BIOLOGICAL
DIVERSITY; NATIONAL PARKS
CONSERVATION ASSOCIATION;
ALLIANCE FOR THE WILD
ROCKIES; NATIVE ECOSYSTEMS
COUNCIL; WESTERN
WATERSHEDS PROJECT; ROBERT
H. ALAND,

Plaintiffs-Appellees,

v.

UNITED STATES OF AMERICA;
U.S. DEPARTMENT OF THE

No. 18-36042

D.C. Nos.

9:17-cv-00089-DLC

9:17-cv-00117-DLC

9:17-cv-00118-DLC

9:17-cv-00119-DLC

9:17-cv-00123-DLC

9:18-cv-00016-DLC

INTERIOR; DAVID L.
BERNHARDT, Secretary, United
States Department of the
Interior; UNITED STATES FISH
AND WILDLIFE SERVICE; JIM
KURTH, Acting Director, United
States Fish and Wildlife
Service, or his Successor in
Office; HILARY COOLEY,
Grizzly Bear Recovery
Coordinator,

Defendants,

STATE OF WYOMING; SAFARI
CLUB INTERNATIONAL;
NATIONAL RIFLE ASSOCIATION
OF AMERICA, INC.,

Intervenor-Defendants,

and

SPORTSMEN'S ALLIANCE
FOUNDATION; ROCKY
MOUNTAIN ELK FOUNDATION,

*Intervenor-Defendants-
Appellants.*

CROW INDIAN TRIBE V. STATE OF WYOMING 17

Appeal from the United States District Court
for the District of Montana
Dana L. Christensen, District Judge, Presiding

Argued and Submitted May 5, 2020
Portland, Oregon

Filed July 8, 2020

Before: Mary M. Schroeder, Paul J. Watford, and
Andrew D. Hurwitz, Circuit Judges.

Opinion by Judge Schroeder

SUMMARY*

Endangered Species Act

The panel affirmed the district court’s orders remanding to the U.S. Fish & Wildlife Services (“FWS”) for further consideration of several issues concerning a 2017 Rule governing the Greater Yellowstone grizzly bear population, with the exception of the district court’s order requiring the FWS to conduct a “comprehensive review” of the remnant grizzly population.

In 2007, the FWS issued a rule declaring the Yellowstone grizzly population a “distinct population segment” within the meaning of the Endangered Species Act (“ESA”) and

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

removing it from the protections of the ESA. This court subsequently upheld the district court's determination that further agency consideration was required. That remand eventually resulted in a second delisting rule – the 2017 Rule – that the district court again vacated and remanded to the agency for further consideration.

In its remand order, the district court found three important deficiencies in the FWS's analysis. First, the district court held that the FWS failed adequately to consider the impact of delisting on the remnant grizzly population. Second, the district court held the FWS acted contrary to the best available science when it determined that the Yellowstone grizzly bear was not threatened by a lack of genetic diversity, and that the translocation and connectivity assurances contained in the 2007 Rule were no longer necessary. Third, the district court faulted the FWS for failing to include a commitment to recalibration in the event a different population estimator were to be adopted. The district vacated the 2017 Rule and remanded for further agency consideration.

The FWS and numerous intervenors – comprised of states of the Yellowstone region and private hunting and farming organizations – challenge the district court's order. Appellees include plaintiff environmental and tribal organizations.

The panel first considered appellate jurisdiction, and rejected appellees' challenges. The panel held that the district court's remand order was final as to the FWS. The panel also held that FWS did not merely seek an advisory opinion, and FWS had standing because its alleged injury – being required to reevaluate certain aspects of the 2017 Rule that it claimed were legal – was redressable by a favorable

decision. The panel further held that the recalibration order was final with respect to the intervenors, and the intervenors had standing to pursue their appeal regarding a commitment to recalibration.

Turning to the merits, the panel first considered the FWS's appeal of the district court's order to consider the effect of delisting on the remnant grizzly population. The panel agreed with the FWS that the district court appeared to have required a ESA Section 4(a) analysis of the remnant population. The panel held that such an extensive analysis was not required by the ESA or *Humane Society v. Zinke*, 865 F.3d 585 (D.C. Cir. 2017), and the district court erred in relying upon the text of Section 4(c). Although a full Section 4(a) analysis of all factors affecting the continued existence of the remnant was not required, the FWS must determine on remand whether there was a sufficiently distinct and protectable remnant population, so that the delisting of the distinct population segment will not further threaten the existence of the remnant. The panel thus vacated that portion of the district court's order calling for a "comprehensive review" of the remnant grizzly population, and vacated for the district court to order further examination.

The panel next considered the district court's order to ensure the long-term genetic diversity of the Yellowstone grizzly. The panel held that because there were no concrete, enforceable mechanisms in place to ensure long-term genetic health of the Yellowstone grizzly, the district court correctly concluded that the 2017 Rule was arbitrary and capricious in that regard. Remand to the FWS was necessary on this matter.

The district court concluded that the FWS's decision to drop the commitment to recalibration in the conservation strategy violated the ESA because it was the result of political pressure by the states rather than having been based on the best scientific and commercial data. The panel held that the district court properly ordered the FWS to include a commitment to recalibration. The panel rejected the intervenors' argument that because the states have committed to using the current population estimator for the foreseeable future, any commitment to recalibration would be unnecessary and speculative.

COUNSEL

Jay A. Jerde (argued), Special Assistant Attorney General; Erik E. Petersen, Senior Assistant Attorney General; Attorney General's Office, Cheyenne, Wyoming; for Intervenor-Defendant-Appellant/Cross-Appellee State of Wyoming.

Robert H. Aland (argued), Winnetka, Illinois, pro se Plaintiff-Appellant.

Rebeca Dockter, Chief Legal Counsel; William A. Schenk, Agency Legal Counsel; Montana Department of Fish, Wildlife and Parks, Helena, Montana; Tim Fox, Attorney General; Jeremiah D. Weiner, Assistant Attorney General; Attorney General's Office, Helena, Montana; for Intervenor-Defendants-Appellants State of Montana and Montana Department of Fish, Wildlife and Parks.

Jeremy E. Clare and Anna M. Seidman, Safari Club International, Washington, D.C.; Michael T. Jean, The National Rifle Association of America, Fairfax, Virginia; for

Intervenors-Defendants-Appellants/Cross-Appellees Safari Club International and National Rifle Association of America, Inc.

Cody J. Wisniewski, Mountain States Legal Foundation, Lakewood, Colorado, for Intervenor-Defendants-Appellants/Cross-Appellees Wyoming Farm Bureau Federation, Wyoming Stock Growers Association, Charles C. Price, and W&M Thoman Ranches, LLC.

James H. Lister, Birch Horton Bittner & Cherot P.C., Washington, D.C., for Intervenor-Defendants-Appellants/Cross-Appellees Sportsmen's Alliance Foundation and Rocky Mountain Elk Foundation.

Matthew K. Bishop (argued), Western Environmental Law Center, Helena, Montana; Kelly E. Nokes, Western Environmental Law Center, Taos, New Mexico; for Plaintiff-Appellee WildEarth Guardians.

Timothy J. Preso (argued) and Joshua R. Purtle, Earthjustice, Bozeman, Montana; Beth Baldwin, Ziontz Chestnut, Seattle, Washington; for Plaintiffs-Appellees Northern Cheyenne Tribe, Sierra Club, Center for Biological Diversity, and National Parks Conservation Association.

Joan M. Pepin (argued), Andrew C. Mergen, and Ellen J. Durkee, Attorneys; Eric Grant, Deputy Assistant Attorney General; Jeffrey Bossert Clark, Assistant Attorney General; Environment and Natural Resources Division, United States Department of Justice, Washington, D.C.; Tyson Powell, Office of the Solicitor, United States Department of the Interior, Washington, D.C.; for Federal Defendants-Appellees/Cross-Appellants.

Jeffrey S. Rasmussen, Fredericks Peebles & Patterson LLP, Louisville, Colorado, for Plaintiffs-Appellees Crow Indian Tribe, Crow Creek Sioux Tribe, Standing Rock Sioux Tribe, Piikani Nation, The Crazy Dog Society, Hopi Nation Bear Clan, Northern Arapaho Elders Society, David Bearshield, Kenny Bowekaty, Llevando Fisher, Elise Ground, Arvol Looking House, Travis Plaited Hair, Jimmy St. Goddard, Pete Standing Alone, and Nolan J. Yellow Kidney.

Nicholas Arrivo and Anna Frostic, The Humane Society of the United States, Washington, D.C., for Plaintiffs-Appellees The Humane Society of the United States and the Fund for Animals.

Rebecca K. Smith, Public Interest Defense Center, Missoula, Montana; Timothy M. Bechtold, Bechtold Law Firm, Missoula, Montana; for Plaintiffs-Appellees Alliance for the Wild Rockies, Western Watersheds Project, and Native Ecosystems Council.

Lawrence G. Wasden, Attorney General; Darrell G. Early, Chief Deputy Attorney General, Natural Resources Division; Steven Strack and Kathleen Trever, Deputy Attorneys General; Office of the Attorney General, Boise, Idaho; for Intervenor-Defendant-Appellee/Cross-Appellant State of Idaho.

Darren Eastman, Los Gatos, California, as Amicus Curiae.

Jonathan Wood, Pacific Legal Foundation, Arlington, Virginia, for Amici Curiae Pacific Legal Foundation and Property and Environment Research Center.

Graham Coppes and Emily Wilmott, Ferguson Law Office PLLC, Missoula, Montana, for Amicus Curiae Save the Yellowstone Grizzly.

OPINION

SCHROEDER, Circuit Judge:

*“And the squeal of the pig will float through the air;
From the tummy of the grizzly bear.”*

– *Up With Montana*, University of Montana Fight Song

One of the original goals and much lauded successes of the Endangered Species Act (“ESA”) is the survival of the grizzly bear, an iconic symbol of the Rocky Mountain west. Indeed, the grizzly’s decline was a motivating force for passage of the original ESA in 1973, and the grizzly was listed as “threatened” not long after. *See Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 183–84 (1978) (citing 119 Cong. Rec. 42,913 (1973)).

The grizzly’s success has been so marked in the Greater Yellowstone Ecosystem of Idaho, Montana, and Wyoming, that the agency responsible for enforcement of the ESA, the Fish and Wildlife Service (“FWS”), has for almost fifteen years been trying to delist the bears in that area. These efforts have been met with enthusiastic support from hunters and from the states affected, but with fierce opposition from environmental and tribal groups.

In 2007, the FWS first issued a rule declaring the Yellowstone grizzly population a “distinct population

segment” within the meaning of the ESA and removing it from the protections of the ESA. *See* Final Rule Removing the Yellowstone Distinct Population Segment of Grizzly Bears From the Federal List of Endangered and Threatened Wildlife, 72 Fed. Reg. 14,866 (Mar. 29, 2007) (“2007 Rule”). When that attempted delisting reached our court in 2011, we upheld the district court’s determination that further agency consideration was required. *Greater Yellowstone Coal., Inc. v. Servheen*, 665 F.3d 1015, 1030 (9th Cir. 2011).

That remand eventually resulted in a second delisting rule that the district court again vacated and ordered remanded for consideration of several discrete issues. *See* Final Rule Removing the Greater Yellowstone Ecosystem Population of Grizzly Bears from the Federal List of Endangered and Threatened Wildlife, 82 Fed. Reg. 30,502 (June 30, 2017) (“2017 Rule”); *Crow Indian Tribe v. United States*, 343 F. Supp. 3d 999 (D. Mt. 2018). The FWS now appeals only those aspects of the remand that require the study of the effect of the delisting on the remaining, still listed, grizzly population in the coterminous 48 states, as well as further consideration of the threat of delisting to long term genetic diversity of the Yellowstone grizzly. The states of the region (Idaho, Montana, and Wyoming), as well as private hunting and farming organizations, have intervened on the government’s behalf. The Intervenor challenge the same district court rulings as the FWS. Some Intervenor additionally appeal the district court’s order requiring recalibration of any new grizzly population estimator to the current estimator.

The Appellees are environmental and tribal groups that brought the action in the district court. They contend this court lacks jurisdiction to consider any issue on appeal

because the remand order is not appealable under this Circuit's jurisprudence. They rely on *Natural Resources Defense Council v. Gutierrez*, 457 F.3d 904 (9th Cir. 2006), and *Alsea Valley Alliance v. Department of Commerce*, 358 F.3d 1181 (9th Cir. 2004).

Gutierrez involved an agency's attempt to challenge only the reasoning behind a district ruling and not the relief granted. 457 F.3d at 906. Here, the FWS does challenge the scope of the remand order. Under *Alsea Valley*, a remand of an agency's rulemaking is a final order as to the government and therefore appealable. See 358 F.3d at 1184. We conclude we also have jurisdiction to consider the Intervenor's appeals regarding recalibration, because unlike *Alsea Valley*, the issue the Intervenor raises has been conclusively determined by the district court and cannot be taken into account in the FWS proceedings upon remand.

On the merits, we affirm the district court's remand order, with a clarification of what we hold to be the relatively narrow scope of the consideration that must be given on remand to the effect of the delisting on the remaining, still listed, grizzly population in the coterminous 48 states.

I. BACKGROUND

The Endangered Species Act ("ESA") was passed in 1973 with the stated purpose of providing "a program for the conservation of . . . endangered and threatened species." 16 U.S.C. § 1531(b). The ESA defines a "threatened species" as one that "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* § 1532(20). An "endangered species" is one that "is in danger of extinction throughout all or a

significant portion of its range. . . .” *Id.* § 1532(6). Once a species is listed as either endangered or threatened, it receives substantial legal protection against nearly all killing or hunting. *Id.* §§ 1532(19); 1538(a)(1).

In Section 4 of the original 1973 Act, Congress required the Secretary of the Interior to evaluate, and reevaluate every five years, listing of species as threatened or endangered. *Id.* § 1533(a)(1), (c)(2); *see also* 50 C.F.R. § 402.01(b) (delegating the FWS as the agency responsible for administering the ESA). Section 4 requires the FWS to consider each of the following factors “to determine whether any species is an endangered species or threatened species:”

(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; and

(E) other natural or manmade factors affecting its continued existence.

16 U.S.C. § 1533(a)(1).

In the 1978 amendments to the ESA, Congress gave the FWS a more refined tool to evaluate listing or delisting of

less than an entire biological or taxonomic species. In the definition of “species,” Congress included “any distinct population segment of any species of vertebrate fish or wildlife.” *Id.* § 1532(16). The FWS has defined the characteristics of a distinct population segment (“DPS”) to be a segment that is both discrete from the remainder of the species and significant in relation to the remainder of the species. Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act, 61 Fed. Reg. 4,722, 4,725 (Feb. 7, 1996). If a DPS exists, such segment is considered a “species” in and of itself, independent from the rest of the biological species. *See id.* As the FWS’s implementing policy describes, designation of a DPS allows the FWS to further the ESA’s purpose of protecting endangered and threatened species. *Id.* (“Listing, delisting, or reclassifying distinct vertebrate population segments may allow the Service[] to protect and conserve species and the ecosystems upon which they depend before large-scale decline occurs that would necessitate listing a species or subspecies throughout its entire range.”). FWS need not wait to take action until the entire species is affected. FWS has cautioned, however, that designation of a DPS is a tool to be used “sparingly.” *Id.* at 4,722.

A. The Yellowstone Grizzly’s Experience Under the ESA

The grizzly’s experience since Congress enacted the ESA in 1973 has run a zigzag course. Originally listed in 1975, the grizzly bear (*Ursus arctos horribilis*) was by then the subject of nationwide concern because the population had suffered a steep decline. *See* Amendment Listing the Grizzly Bear of the 48 Conterminous States as a Threatened Species, 40 Fed. Reg. 31,734 (July 28, 1975). Indeed, the ESA’s passage was partially because of the grizzly’s population decline. *See*

Tenn. Valley Auth., 437 U.S. at 183–84 (citing 119 Cong. Rec. 42,913 (1973)). As many as 50,000 grizzly bears once roamed the United States, but with European settlement in the nineteenth century came hunting that caused great grizzly population loss. *See* 2017 Rule, 82 Fed. Reg. at 30,508. Throughout the nineteenth and twentieth centuries the grizzly bear population continued to decline, and was reduced to less than two percent of its former level by the 1930s. *Id.* The grizzly bear of the conterminous 48 states was therefore among the early species to be listed as “threatened” under the ESA. Amendment Listing the Grizzly Bear of the 48 Conterminous States as a Threatened Species, 40 Fed. Reg. 31,734 (July 28, 1975); *see also* *Tenn. Valley Auth.*, 437 U.S. at 183–84.

The FWS followed up the grizzly listing with a Grizzly Bear Recovery Plan in 1982, identifying six different, geographically isolated ecosystems extending from the Greater Yellowstone area, to parts of Idaho and Montana, the North Cascades area of Washington, and into southeast British Columbia. *See* 2017 Rule, 82 Fed. Reg. at 30,508–09. At present, only two ecosystems have a substantial population of grizzlies: the Greater Yellowstone Ecosystem, with which we are directly concerned, and which has approximately 700 bears, and the Northern Continental Ecosystem of north-central Montana, which is estimated to have approximately 900 bears. *Id.* at 30,509. In Yellowstone National Park, within the Greater Yellowstone Ecosystem, grizzlies reached Park capacity by 2006. *See Greater Yellowstone Coal.*, 665 F.3d at 1020.

The success of the Recovery Plan in the Greater Yellowstone Ecosystem brought about the first FWS effort to remove the bears in that area from the List of Threatened and

Endangered Wildlife. *See* 2007 Rule, 72 Fed. Reg. 14,866. This required separating the Yellowstone grizzlies from the rest of the grizzlies to create a DPS, declaring the Yellowstone grizzlies no longer threatened, and delisting them. *Id.* at 14,866.

In the inevitable lawsuit that followed, environmental and tribal groups successfully challenged the delisting. Ultimately, this court upheld the district court's order vacating the rule. We held the FWS had arbitrarily concluded that declines of whitebark pine, an important food source for the grizzlies, were unlikely to threaten the Yellowstone grizzlies. *Greater Yellowstone Coal.*, 665 F.3d at 1030. We affirmed the district court's remand to the FWS to further consider the impact of whitebark pine on the Yellowstone grizzly population. *Id.*

Five years after the remand, the FWS in 2016 published the Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem. That Conservation Strategy outlines the manner in which the Yellowstone grizzly is to be managed and monitored upon delisting. *See* 2016 Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem, at 2 (Dec. 2016) ("2016 Conservation Strategy"). Although the Conservation Strategy itself is not legally binding, it was produced only after many iterations of drafting and compromises with Idaho, Montana, and Wyoming. *See Crow Indian Tribe*, 343 F. Supp. 3d at 1018. Federal and state agencies therefore adopted it and committed to implement the management strategies into law. *See* 2016 Conservation Strategy at 13–14 (Memorandum of Understanding).

The FWS accompanied the 2016 Conservation Strategy with the publication of the 2017 Rule at issue in this appeal. In that Rule, the FWS not surprisingly concluded that the decline of the whitebark pine does not pose a substantial threat to the Yellowstone grizzlies. 2017 Rule, 82 Fed. Reg. at 30,536–40. The FWS further concluded, as it had in 2007, that the Yellowstone grizzly satisfies the requirements for designation as a DPS, and that ESA protections are no longer necessary for the DPS. *Id.* at 30,502. In reaching these conclusions, the 2017 Rule relied on the 2016 Conservation Strategy’s management plan as sufficient to ensure the long-term recovery of the Yellowstone grizzly. *Id.* at 30,515–16.

Publication of the 2017 Rule did not mark the end of this regulatory chapter, however. Not long after that publication, the D.C. Circuit considered a case in which, as here, the FWS had simultaneously created a DPS and delisted it. That case involved the Western Great Lakes gray wolf, and resulted in the influential opinion *Humane Society v. Zinke*, 865 F.3d 585 (D.C. Cir. 2017).

In *Humane Society*, the D.C. Circuit first considered whether the FWS’s interpretation of the ESA, as permitting the agency to simultaneously create and delist a DPS, was reasonable. *Id.* at 595. Although such action arguably conflicts with the ESA’s purpose to protect species, *see* Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act, 61 Fed. Reg. 4,722, 4,725 (Feb. 7, 1996), the court held that this statutory interpretation was legally permissible, 865 F.3d at 599–600. Nevertheless, in order to lawfully create and delist a DPS, the D.C. Circuit explained, the FWS needs to look at the effect of partial delisting on the portion of the species that remained listed, the so-called remnant species.

The FWS must “address the impact that extraction of the segment would have on the legal status of the remaining [segment] in the already-listed species.” *Id.* at 600. As the court put it, “when a species is already listed, the Service cannot review a single segment with blinders on, ignoring the continuing status of the species’ remnant.” *Id.* at 601.

The D.C. Circuit concluded that the rule delisting the Western Great Lakes segment of the gray wolf was arbitrary and capricious, because it delisted that segment without analyzing the impact of doing so on the remnant gray wolf population. *Id.* at 602–03. The failure to consider impact on the remnant species in *Humane Society* was particularly concerning, because FWS had tried to delist the remnant gray wolf population on the ground that once the Western Great Lakes gray wolf was separately delisted, the remnant no longer could be considered a “species.” *Id.* at 602; *see also* Removing the Gray Wolf (*Canis lupus*) From the List of Endangered and Threatened Wildlife, 78 Fed. Reg. 35,664, 35,674–75 (June 13, 2013) (explaining that the remnant gray wolf no longer met the definition of “population,” because the remnant wolves were dispersed throughout the country rather than part of a “common spacial arrangement”).

At the time *Humane Society* came down, the FWS had already published the 2017 Rule and this litigation had commenced. Before the parties could file any dispositive motions in the district court in this case, however, the FWS took it upon itself to do a regulatory review in light of *Humane Society*. *See* Request for Comments, Possible Effects of Court Decision on Grizzly Bear Recovery in Coterminous United States, 82 Fed. Reg. 57,698 (Dec. 7, 2017). A few months later, in a brief order, the FWS concluded the D.C. Circuit’s decision required no

modification of the 2017 Rule, reasoning that the remnant grizzly population remained legally protected. Review of 2017 Final Rule, Greater Yellowstone Ecosystem Grizzly Bears, 83 Fed. Reg. 18,737, 18,739 (Apr. 30, 2018) (“Regulatory Review”). It did not otherwise review the viability and protectability of this remnant population.

B. District Court Proceedings

The post-*Humane Society* Regulatory Review triggered the filing of cross motions for summary judgment in the district court. In an order that dealt fully with all of the contentions of the parties, the district court granted summary judgment for the Plaintiffs, vacated the 2017 Rule, and remanded to the FWS. *See Crow Indian Tribe v. United States*, 343 F. Supp. 3d 999 (D. Mt. 2018). The court found three important deficiencies in the FWS’s analysis. We describe each in turn.

First, looking to *Humane Society*, the district court held that the FWS failed adequately to consider the impact of delisting on the remnant grizzly population. *Id.* at 1013–15. It was not sufficient for the Regulatory Review to declare, without legal or factual analysis, that the remnant population continued to be listed on the List of Threatened and Endangered Species. Some further consideration was needed. In determining what type of consideration would be sufficient, the district court turned to the text of the ESA. *Id.* at 1013–14. Section 4(c) of the ESA requires the FWS to periodically review the status of all listed species and make delisting determinations only after conducting such a review. 16 U.S.C. § 1533(c)(2)(A). As the district court explained, Section 4(c) thus requires the FWS to evaluate already-listed species when making a decision to simultaneously create and

delist a DPS. *Crow Indian Tribe*, 343 F. Supp. 3d at 1014 (citing *Humane Society*, 865 F.3d at 601 for the identical conclusion). The FWS, however, had failed to perform any review of the remnant grizzly population. The district court went on to say that “the [FWS’s] review must be comprehensive of all identified and reasonably identifiable threats.” *Id.*

Second, the district court held the FWS acted contrary to the best available science when it determined that the Yellowstone grizzly is not threatened by a lack of genetic diversity, and that the translocation and connectivity assurances contained in the 2007 Rule were no longer necessary. *Id.* at 1018–21. The district court concluded the FWS had misread the two scientific studies it relied upon, because both had recognized that some government intervention would likely be required to assure the Yellowstone grizzly’s long-term genetic diversity. *Id.* at 1020–21. The regulatory mechanisms that the FWS viewed as sufficient, none of which required government intervention, were not adequate, because they were not in accord with Congress’s directive to rely upon the best available science when making delisting decisions. *Id.* at 1021; 16 U.S.C. § 1533(b)(1)(A).

Third, the district court faulted the FWS for failing to include a commitment to recalibration in the event a different population estimator were to be adopted. *Id.* at 1015–18. Currently, the FWS relies upon a method called “Chao2” to estimate the population of the Yellowstone grizzly. 2017 Rule, 82 Fed. Reg. at 30,512. Chao2 is known to be a conservative method of estimating the grizzly population. *Id.* So, if any new method of estimating grizzly population were to be adopted, it would likely show an increase in

Yellowstone grizzlies, even if no population increase actually occurred. *See Crow Indian Tribe*, 343 F. Supp. 3d at 1017. The district court held that a commitment to recalibration was necessary in the event that a new method of estimating the population were adopted. Recalibration would ensure that the new method would “be brought in line with . . . the Chao2 model.” *Id.* at 1015. Although the FWS had included a commitment to recalibration in the draft Conservation Strategy, the final 2016 Conservation Strategy relied upon by the 2017 Rule removed such commitment. *See id.* According to the district court, the FWS’s decision to remove the commitment to recalibration was not based upon best available science as required by the ESA, 16 U.S.C. § 1533(b)(1)(A), but was instead a response to political pressure. *Id.* at 1016–18. Such pressure on the FWS came from the states of the region, Idaho, Montana, and Wyoming, now Intervenor in this litigation.

On the basis of those three rulings, the district court vacated the 2017 Rule and remanded for further agency consideration. *Id.* at 1021–22. These appeals followed, and they raise challenges to all three of the district court’s rulings.

The FWS does not challenge the recalibration order. It does appeal the remand for consideration of the Yellowstone grizzly’s long-term genetic health, and contends the district court’s order for a “comprehensive review” of the effect of delisting on the remnant species is broader than that required by the ESA as interpreted in *Humane Society*. Numerous Intervenor also challenge those rulings, taking positions similar to the FWS. They include the states of the Yellowstone region (Idaho, Montana, and Wyoming), as well as private hunting and farming organizations (Safari Club International and The National Rifle Association of America;

Wyoming Farm Bureau Federation, Wyoming Stock Growers Association, Charles C. Price, and W&M Thoman Ranches, LLC; and Sportsmen's Alliance Foundation and Rocky Mountain Elk Foundation). The Intervenor, with the exception of Wyoming Farm Bureau Federation et al., also challenge the district court's ruling on recalibration.

Appellees include the plaintiff environmental and tribal organizations. They not only defend the district court's rulings on the merits, but also raise a number of challenges to our appellate jurisdiction. We must consider the jurisdictional challenges first.

II. APPELLATE JURISDICTION

The district court proceedings resulted in a remand to the FWS for further consideration. The Appellees contend this court lacks jurisdiction to review the order because it is not final. They rely on *Alsea Valley Alliance v. Department of Commerce*, in which we held that a remand was not a final order with respect to private parties whose positions on the merits would be considered during the agency proceedings on remand. 358 F.3d 1181, 1184–85 (9th Cir. 2004). In *Alsea Valley*, however, we also held that the remand order was a final order as to the agency, since, absent an appeal, the agency would not be able to obtain review of the remand ordering it to conduct further proceedings. *Id.* at 1184. Under *Alsea Valley*, the district court's remand order is final as to the FWS.

Appellees' jurisdictional challenges to the FWS's appeal do not stop there, however. They characterize the FWS's appeal as challenging only the grounds for the district court's remand and not the remand itself, and contend that the FWS

is therefore seeking an advisory opinion and that the FWS lacks standing to maintain this appeal. Appellees rely on *Natural Resources Defense Council v. Gutierrez*, where we held the federal agency lacked standing to challenge only one of multiple grounds for an injunction, when it did not challenge the injunction itself. 457 F.3d 904, 906 (9th Cir. 2006). We explained in *Gutierrez* that the appeal, even if legally successful, would not have altered what the agency had been ordered to do. *Id.*

This case materially differs from *Gutierrez*, because the FWS does challenge what the district court ordered it to do on remand. The district court required the agency to consider several distinct issues. The FWS contends it should not be required to consider some of them. If successful, the FWS would have to do considerably less. Because the manner in which the FWS would reevaluate the 2017 Rule on remand would be altered by a favorable decision by this court, the FWS does not merely seek an advisory opinion. Appellees also couch their argument in terms of standing. For similar reasons, FWS has standing, because its alleged injury—being required to reevaluate certain aspects of the 2017 Rule that it claims are legal—is redressable by a favorable decision.

Appellees also challenge our jurisdiction to consider Intervenors’ appeals of the district court’s order requiring a commitment to recalibration. We hold that under our Circuit law, the recalibration order is final with respect to the Intervenors. We have stated that a remand order is considered final as to non-agency parties where “(1) the district court conclusively resolves a separable legal issue, (2) the remand order forces the agency to apply a potentially erroneous rule which may result in a wasted proceeding, and (3) review would, as a practical matter, be foreclosed if an

immediate appeal were unavailable.” *Alsea Valley All.*, 358 F.3d at 1184 (quoting *Collord v. United States Dep’t of the Interior*, 154 F.3d 933, 935 (9th Cir. 1998)). The recalibration order satisfies these criteria, as can be seen from a closer examination of *Alsea Valley*.

In *Alsea Valley*, environmental groups brought suit challenging the National Marine Fisheries Service’s (“NMFS”) final rule listing the naturally spawned coho salmon as threatened under the ESA, but excluding the hatchery spawned coho population. *Id.* at 1183. The district court remanded to the NMFS for further consideration of the best available science. *Id.* The appellants included private parties who had intervened because they feared the NMFS would not appeal the district court’s remand order, and who supported the NMFS final rule. *Id.* at 1184. We held the remand order was not final as to the private party intervenors, however, because their positions would be taken into account in the remand proceeding which could result in a decision favorable to them. *Id.* at 1185.

The same is not the case here, because the district court has issued a definitive ruling, contrary to the Intervenor’s position, concluding that the FWS’s failure to include a commitment to recalibration in the 2017 Rule was arbitrary and capricious. *Crow Indian Tribe*, 343 F. Supp. 3d at 1015. Indeed, the FWS removed a commitment to recalibration from the 2017 Rule at the insistence of the Intervenor’s. *See id.* at 1017. The district court has now ordered the FWS to include it in any new rulemaking. An appeal is the only way the Intervenor’s objections can be considered. We thus have jurisdiction to consider their appeal.

Appellees also contend that the state Intervenor, Idaho, Montana, and Wyoming, lack standing, arguing the states did not suffer a concrete injury. As the states point out, however, the district court order caused the states an injury, as the states had relied on the validity of the 2017 Rule in enacting legislation and state management plans. They have a legally protected interest in enforcing those measures. *See Alfred L. Snapp & Son v. Puerto Rico*, 458 U.S. 592, 601 (1982) (holding that a state has a legally protectable interest in enforcing its legal code); *Hughes v. Oklahoma*, 441 U.S. 322, 337 (1979) (explaining that states have an interest in conservation and protection of wild animals). Moreover, a ruling for the states from this court that would reverse the district court order and uphold the legality of the 2017 Rule would redress these injuries. We hold that the state Intervenor has standing to pursue their appeal regarding a commitment to recalibration. We therefore consider the issues raised by all the Appellants concerning all three of the grounds on which the district court remanded to the agency.

III. MERITS OF THE APPEALS

A. The FWS's Appeal of the District Court's Order to Consider the Effect of Delisting on the Remnant Grizzly Population

A major issue before the district court was whether the FWS should make a fuller examination of the effect delisting the Yellowstone grizzlies would have on the remnant grizzly population. This was a novel issue that arose in light of the D.C. Circuit's opinion in *Humane Society v. Zinke*, 865 F.3d 585 (D.C. Cir. 2017), which had prompted the FWS to conduct a cursory Regulatory Review. The FWS determined in that Regulatory Review that because the legal status of the

remnant grizzly population remained listed as “threatened,” the FWS need not conduct any further review of the viability of the remaining population. Regulatory Review, 83 Fed. Reg. at 18,739–41. The district court ruled more was required and ordered the FWS to conduct a “comprehensive review.” *Crow Indian Tribe*, 343 F. Supp. 3d at 1014.

The dispute in this appeal is over what such a review should entail. The FWS and the Appellee environmental and tribal groups now all seem to agree that some further review should be undertaken. They also appear to agree, or at least do not disagree, that our decision should be consistent with *Humane Society*, which used the phrase “comprehensive review.” *Humane Soc’y*, 865 F.3d at 601. We agree with FWS and Appellees on both of these points.

This case, however, materially differs from the situation in *Human Society*, because there the FWS had created a DPS, delisted it, and attempted to discard the remnant population as no longer a protectable species. *Id.* at 602. The D.C. Circuit was concerned not so much with the nature of the analysis the FWS should have made, but with the practical outcome: the DPS delisting would result in “a backdoor route to the *de facto* delisting” of the entirety of the species. *Id.* at 601–02. The D.C. Circuit vacated the rule, because the FWS failed to take into account “whether the remnant itself remains a species so that its own status under the Act will continue as needed.” *Id.* at 600. The remnant in that case could not remain a species.

In this case, we do not know whether the remnant grizzly population would be protectable as a species after the delisting of the Yellowstone grizzly, because the FWS has not examined the remnant. The FWS has merely kept the

remnant listed as “threatened” as a matter of law without any empirical examination of the effect delisting the Yellowstone grizzly would have on the remnant. *Humane Society* envisions a more practical inquiry.

The FWS’s concern in this appeal, however, is that the district court went too far. The agency contends that, consistent with *Humane Society*, it should determine whether there is a sufficient remnant population to merit protection, but that it need not go back to square one and make the full, five-factor analysis contemplated by Section 4(a). Indeed, the district court’s order does suggest that a Section 4(a) analysis of the remnant is what is required. The FWS raises legitimate concerns.

For their part, Appellees maintain that the district court’s opinion does not go so far as to require a Section 4(a) analysis. Instead, they contend, neither the district court nor the D.C. Circuit required a full Section 4(a) analysis when using the term “comprehensive review.”

We agree with the FWS that the district court appears to have required a Section 4(a) analysis of the remnant population. *See Crow Indian Tribe*, 343 F. Supp. 3d at 1014 (“Because § 4(c) incorporates the § 4(a) threats analysis, the Service’s review must be comprehensive of all identified and reasonably identifiable threats. . . .”). We hold that such an extensive analysis is not required by the ESA or *Humane Society*. The district court erred in relying upon the text of Section 4(c), because that section requires a full, five-factor threats analysis only when making a decision to delist, not when reviewing the status of a species. *Compare* 16 U.S.C. § 1533(c)(2)(A) (requiring periodic review of listed species),

with id. § 1533(c)(2)(B) (requiring delisting decisions to be made in accordance with Section 4(a)).

Nevertheless, although a full Section 4(a) analysis of all the factors affecting the continued existence of the remnant was not required, the FWS must determine on remand whether there is a sufficiently distinct and protectable remnant population, so that the delisting of the DPS will not further threaten the existence of the remnant. As described in *Humane Society*, this analysis requires a review of the “implications for both the segment and the remnant during the delisting . . . process,” in order to ensure that the remnant is not “divest[ed] . . . of legal force.” 865 F.3d at 601. If, after such an inquiry, the FWS determines that delisting the DPS would render the remnant population no longer viable, no partial delisting can take place. This is necessary in order to avoid the “*de facto* delisting” the court in *Humane Society* was concerned about. *See Humane Soc’y*, 865 F.3d at 602. We thus vacate that portion of the district court’s order calling for a “comprehensive review” of the remnant grizzly population, and remand for the district court to order further examination of the delisting’s effect on the remnant grizzly population consistent with this opinion.

B. The District Court’s Order to Ensure the Long-Term Genetic Diversity of the Yellowstone Grizzly

The FWS concluded that genetic concerns do not pose a threat to the Yellowstone grizzly population. 2017 Rule, 82 Fed. Reg. at 30,535–36, 30,544. This determination reversed course from the 2007 Rule, which had found, based on the best available science, that the Yellowstone grizzly’s long-term genetic diversity would be threatened if grizzly bears from other ecosystems did not migrate into the Greater

Yellowstone Ecosystem. *See id.* at 30,536. In order to maintain the Yellowstone grizzly’s genetic diversity, the 2007 Rule’s accompanying Conservation Strategy recommended that, if no natural connectivity between grizzly bear ecosystems occurred by 2020, one or two grizzlies per year from the Northern Continental Divide Ecosystem of north-central Montana should be translocated into the Greater Yellowstone Ecosystem. *Id.*

The district court ruled that the FWS acted contrary to the best available science in determining that the Yellowstone grizzly was no longer threatened by lack of genetic diversity in the long term, and in failing to include adequate regulatory mechanisms to protect genetic health. *Crow Indian Tribe*, 343 F. Supp. 3d at 1021. The FWS provided little reasoning or explanation for the departure from its earlier findings.

The FWS in this appeal now argues that it reasonably interpreted the best available science to conclude that current levels of genetic diversity indicate that mandatory translocation is not necessary, and that there is “no immediate need for new genetic material.” *See* 2017 Rule, 82 Fed. Reg. at 30,535. The FWS supports its position by looking to the conclusion of the principal scientific studies in the record. Yet these studies concluded only that the Yellowstone grizzly’s genetic health is likely not a threat *in the short term*. Craig R. Miller and Lisette P. Waits, *The History of Effective Population Size and Genetic Diversity in the Yellowstone Grizzly (Ursos arctos): Implications for Conservation*, 100 Proc. of the Nat’l Acad. of Sci. 4334, 4338 (2003) (“Miller and Waits”); Pauline L. Kamath et al., *Multiple Estimates of Effective Population Size for Monitoring a Long-Lived Vertebrate: An Application to Yellowstone Grizzly Bears*, 24 Molecular Ecology 5507, 5517 (2015) (“Kamath et

al.”). The problem, then, is that the studies do not support the FWS’s overall conclusion reached in the 2017 Rule that it “do[es] not consider genetic concerns to be a threat.” 2017 Rule, 82 Fed. Reg. at 30,544. This means not just in the short-term, but at all.

In fact, both studies express concerns about the long-term genetic health of the Yellowstone grizzly. Miller and Waits state that, “the genetic consequences of inbreeding and isolation are likely to transpire over longer time periods (decades and centuries).” Miller and Waits, at 4338. And the work by Kamath et al. concludes that, aided by ESA protection, the Yellowstone grizzly “may eventually approach the long-term viability population criterion,” but it has not yet done so. Kamath et al., at 5517. Because the 2017 Rule’s conclusion that genetic health no longer poses a threat to the Yellowstone grizzly is without scientific basis, this conclusion is arbitrary and capricious. *See Ariz. Cattle Growers’ Ass’n v. Salazar*, 606 F.3d 1160, 1163 (9th Cir. 2010) (explaining that agency interpretations of science are arbitrary and capricious when they are “without substantial basis in fact”).

The 2017 Rule even acknowledged that long-term viability requires regulatory measures. It stated “that the long-term viability of the [Yellowstone grizzly] will benefit from occasional gene flow from nearby grizzly bear populations.” 2017 Rule, 82 Fed. Reg. at 30,536. The Rule expressly refers to regulatory mechanisms for ensuring that gene flow occurs. It cites as examples Montana’s indication that it would manage hunting in the area “in order to retain the opportunity for natural movements of bears between ecosystems,” and commitments by both state and federal agencies to monitor bear movement. *Id.*

The district court found these regulatory mechanisms to be inadequate because they failed to ensure long-term genetic viability of the Yellowstone grizzly. *Crow Indian Tribe*, 343 F. Supp. 3d at 1021. In this appeal, the FWS accuses the district court of substituting its own judgment for the agency's on what regulatory mechanisms will maintain long-term genetic health. The FWS may be correct that it need not adopt the identical regulatory mechanisms that it adopted in the 2007 Rule, but because a lack of genetic diversity continues to threaten the Yellowstone grizzly, it must adopt regulatory mechanisms that ensure long-term genetic health. *See* 16 U.S.C. § 1533(a)(1)(D) (requiring the FWS to consider “the inadequacy of existing regulatory mechanisms”). It failed to do so here.

State management plans may be considered adequate regulatory mechanisms, but only if they work. As the D.C. Circuit pointed out, such plans must be “sufficiently certain and effective to alleviate a threat of endangerment . . . after delisting.” *Defenders of Wildlife v. Zinke*, 849 F.3d 1077, 1081 (D.C. Cir. 2017) (internal quotations omitted). The states have committed to monitor bear movement and set restrictions on hunting, but they have made no commitment to take action if natural connectivity of grizzly bear populations does not occur. The states' measures, therefore, cannot be said to be “sufficiently certain . . . to alleviate a threat of endangerment.” *Id.*

The FWS has committed to possible future action, but that commitment is not adequate. In the event that monitoring demonstrates natural connectivity between distinct grizzly ecosystems is not occurring, or if hunting of the Yellowstone grizzly decreases population size, the FWS commits to initiating “a formal status review” and halting hunting. 2017

Rule, 82 Fed. Reg. at 30,514; 2016 Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem, at 102 (Dec. 2016). Yet, we have expressly rejected “any suggestion that the future possibility of relisting a species can operate as a reasonable justification for delisting.” *Greater Yellowstone Coal.*, 665 F.3d at 1029. Moreover, although a commitment to halt hunting may serve as a regulatory mechanism to ensure that overhunting does not occur, it does not demonstrate a commitment to increase population size, as the studies the FWS relies upon indicate would be required to ensure long-term viability.

Accordingly, because there are no concrete, enforceable mechanisms in place to ensure long-term genetic health of the Yellowstone grizzly, the district court correctly concluded that the 2017 Rule is arbitrary and capricious in that regard. Remand to the FWS is necessary for the inclusion of adequate measures to ensure long term protection.

C. The District Court’s Order Requiring a Commitment to Recalibration

Recalibration is needed in the event the FWS changes its method of estimating the Yellowstone grizzly bear population. Recalibration accounts for methodological changes between population estimators in order to ensure that the FWS is able to accurately estimate the Yellowstone grizzly’s population size. The issue is particularly important here, because the current estimator is known to be conservative and a change could result in an illusory increase in population. Acknowledging the importance of recalibration, a draft version of the Conservation Strategy included a commitment to recalibration. The Intervenor states that were deeply involved in the adoption of the

Conservation Strategy, objected to any recalibration commitment, and, at their insistence, the final Conservation Strategy contained none. *See Crow Indian Tribe*, 343 F. Supp. 3d at 1015–18.

The district court concluded that the FWS’s decision to drop the commitment to recalibration in the Conservation Strategy violated the ESA, because it was not made “solely on the basis of the best scientific and commercial data,” 16 U.S.C. § 1533(b)(1)(A), but instead was the result of political pressure by the states. *Crow Indian Tribe*, F. Supp. 3d at 1016–17. The district court’s conclusion was based upon a careful analysis of the record, which contained several email exchanges between FWS employees, including the former Director of the FWS and the former Grizzly Bear Recovery Coordinator, who acknowledged that failing to include a recalibration commitment would be a “show-stopper” and would result in a “biologically and legally indefensible” delisting of the Yellowstone grizzly. *Id.* at 1017.

The FWS accepts the district court’s order to include a commitment to recalibration, and does not appeal this part of the remand. Intervenorors do appeal this order, however, arguing that because the states have committed to using the current population estimator for the foreseeable future, any commitment to recalibration would be unnecessary and speculative. The district court addressed this argument, explaining that, as recognized by FWS’s leadership, the threat to the Yellowstone grizzly from a failure to include such a provision is evident, regardless of whether the states presently plan to rely on the current estimator for the foreseeable future. *Id.* at 1018. A commitment to recalibration is necessary in the event that the states adopt a new estimator,

or else the effect of any future change will never be known. The states' promise to retain the current estimator for now does nothing to address this threat.

The FWS violated the ESA's directive to make listing decisions "solely on the basis of the best scientific and commercial data," 16 U.S.C. § 1533(b)(1)(A), when it failed to include a commitment to recalibration despite the FWS's acknowledgment that a failure to provide such provision could threaten the Yellowstone grizzlies. Thus, the district court properly ordered the FWS to include a commitment to recalibration.

CONCLUSION

We affirm the district court in all respects, with the exception of the order requiring the FWS to conduct a "comprehensive review" of the remnant grizzly population. As to that order, we remand for the district court to order further examination of the delisting's effect on the remnant grizzly population consistent with this opinion.

AFFIRMED in part; REMANDED in part. Each party to bear its own costs.