# PETITION TO THE UNITED STATES FISH AND WILDLIFE SERVICE

*To revise the 1993 Recovery Plan for grizzly bears in the U.S. Northern Rockies using a metapopulation approach for lasting and sustainable recovery.*

*SUBMITTED ON BEHALF OF:*

Center for Biological Diversity
Endangered Species Coalition
Friends of the Bitterroot
Friends of the Clearwater
Great Bear Foundation
Humane Society Legislative Fund
Humane Society of the United States
Nimiipuu Protecting the Environment
Park County Environmental Council
Sierra Club
Western Watersheds Project
WildEarth Guardians
Wyoming Wildlife Advocates
Yaak Valley Forest Council


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## Introduction

Earthjustice and 14 partner groups together present this Petition[1] and the attached report authored by Dr. Christopher Servheen, Ph.D.,[2] requesting that the U.S. Fish and Wildlife Service (Service) revise the 1993 Recovery Plan for grizzly bears in the U.S. Northern Rockies.[3] The proposed revisions include the best available science while also incorporating decades of evolving conservation knowledge.

Human-caused grizzly bear deaths are at an all-time high since garnering protection under the Endangered Species Act in 1975.[4] The leading cause of mortality is lethal removal of bears that have come into conflict with livestock or have become accustomed to human-related food sources. Other human-caused mortalities include hunting conflicts, self-defense kills, poaching, mistaken identity shootings, and vehicle collisions–which recently claimed the life of world-famous Grizzly 399 near of Jackson, Wyoming.[5] The rise in human-caused grizzly bear deaths highlights the shortcomings of the 1993 Recovery Plan in failing to predict the consequences of the ever-expanding human encroachment in grizzly habitat.

While grizzly deaths escalate, the Service is considering petitions from Idaho, Montana, and Wyoming to prematurely strip grizzlies of the protections afforded to them under the Endangered Species Act (ESA). The States assert that grizzlies have achieved recovery and that federal protections are no longer necessary, while

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[1] This Petition is filed pursuant to 5 U.S.C. §§ 553(e), 551(4) (defining "rule" as "the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy").

[2] Dr. Christopher Servheen, Ph.D., served as the U.S. Fish and Wildlife Service Grizzly Bear Recovery Coordinator for 35 years, until 2016 when he retired. Dr. Servheen authored the 1993 Recovery Plan, which he now says needs to be revised to incorporate new science that supports managing bears in a unified metapopulation.

[3] The proposed revisions apply to the Northern U.S. Rockies grizzly bear population. The petition does not address ongoing recovery efforts in the Cascades. Nor does it address the potential for grizzly bears to recolonize other portions of their historical range, including in the Sierra and the San Juans.

[4] Matthew J. Gould, Bryn E. Karabensh, Mark A. Haroldson, & Frank T. van Manen, *Provisional documented known and probable grizzly bear mortalities in the Greater Yellowstone Ecosystem, 2024*, U.S. Geological Survey data release (Provisional Release, updated 2024-11-22), https://doi.org/10.5066/P91961X7.

[5] U.S. Fish and Wildlife Serv., *Grizzly Bear 399 Fatally Struck by Vehicle in Snake River Canyon* FWS Press Release (Oct. 23, 2024), https://www.fws.gov/press-release/2024-10/grizzly-bear-399-fatally-struck-vehicle-snake-river-canyon.

at the same time introducing and enacting new lethal policies that would undermine durable ecosystem-based recovery.

The numerous threats that grizzly bears face now are not adequately addressed under the outdated 1993 Recovery Plan. Two of the five recovery areas fall short of population targets. And a third recovery area, the Bitterroot ecosystem, has only occasional instances of documented grizzly bear presence in recent years. In all, the Northern Rockies recovery areas *still* lack natural connectivity—and the state and federal regulatory mechanisms necessary to promote connectivity—that is essential to their genetic health and resiliency. Delisting grizzly bears under the current antiquated and unsuccessful management scheme that compartmentalizes bears into five, isolated recovery areas is premature under ESA standards.

We urge the Service to replace the 1993 Recovery Plan's piecemeal management strategy with the science-backed metapopulation approach described in Dr. Servheen's attached report (Exhibit A). The metapopulation approach calls for grizzly bears to be managed as a single, interconnected population in the U.S. Northern Rockies.[6] Overwhelming scientific consensus agrees that a naturally connected metapopulation of grizzly bears will lead to improved genetic diversity and greater demographic resiliency of the species. Rather than delisting grizzlies at a time when they are most vulnerable to human-caused mortalities, the Service should revise its 1993 Recovery Plan—which the agency never intended to be final in the first place—and give grizzly bears in the Northern Rockies a chance at lasting and durable recovery.

## Background

Grizzly bears remaining in the lower-48 states are a vestige of the era prior to European presence, when an estimated 50,000 grizzlies roamed from the Canadian border south to Mexico, west to the coast of California, and east to the Great Plains.[7] Throughout the 19th and early 20th centuries, the region's grizzlies were "shot, poisoned, and trapped wherever they were found," eliminating them from more than 98 percent of their range by the 1930s and reducing their population to fewer than 1,000 individuals.[8] When author and naturalist Peter Matthiessen wrote about the grizzly in 1959, he had reason to think that "the time

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[6] *See* Exhibit B (relevant literature to studies supporting metapopulation management).

[7] Removing the Greater Yellowstone Ecosystem Population of Grizzly Bears from the Federal List of Endangered and Threatened Wildlife, 82 Fed. Reg. 30,502, 30,508 (June 30, 2017) [hereinafter 2017 Delisting Rule].

[8] *Id.*

is not far off" when this "'monarch of the wild' will disappear" completely.[9] "For many of us," he warned, "the great grizzly will always represent a wild, legendary America somewhere to the north and west which we were born too late ever to see."[10]

## I. The Protection of the Lower-48's Grizzly Bears under the Endangered Species Act

Thanks to the protections of the Endangered Species Act, the lower-48's grizzlies—and wildness that sustains them—were never fully lost. The ESA has long been recognized as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[11] Congress, recognizing extinction of various species "as a consequence of economic growth and development," promulgated the statute in 1973 as a means of protecting imperiled species and the ecosystems they depend on.[12] And it specifically sought to ensure that grizzly bears would not be "'driven to extinction[.]'"[13] The ESA represents a vital commitment "to halt and reverse the trend toward species extinction—whatever the cost."[14]

To receive protection under the ESA, a species must first be listed as either "endangered" or "threatened."[15] An "endangered species" is one that "is in danger of extinction throughout all or a significant portion of its range[,]" while a species is "threatened" when it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."[16]

When determining "whether any species is an endangered species or a threatened species[,]" the Service is required to evaluate the five factors set forth in Section 4(a)(1) of the act:

> (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

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[9] Peter Matthiessen, Wildlife in America 90 (rev. ed. 1987).

[10] *Id.*

[11] *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1973).

[12] *Id.* at 183–84; 16 U.S.C. § 1531(a)(1).

[13] *Tenn. Valley Auth.*, 437 U.S. at 183–84 (emphasis omitted) (quoting 119 Cong. Rec. 42,913 (1973)).

[14] *Id.* at 154.

[15] *See, e.g.*, 16 U.S.C. §§ 1536, 1538.

[16] 16 U.S.C. §§ 1532(6), 1532(20).

inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.[17]

Congress made clear that the Service's assessments must be rooted in science, not politics, declaring in Section 4(b) that the agency may only rely on "the best scientific and commercial data available[.]"[18]

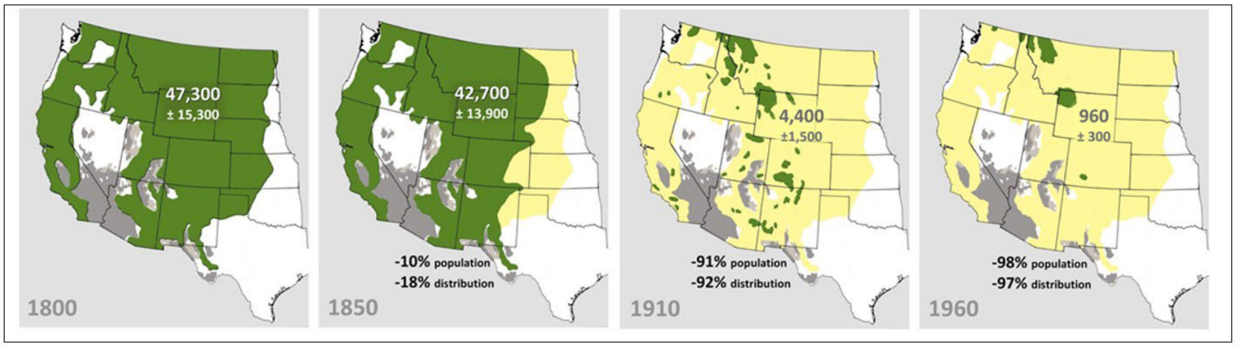


*Fig. 1. This series of maps shows extirpations of grizzly bears in the western United States between 1800 and 1960. Grizzly bear distribution at each time step is shown in green with the cumulative area of extirpations in yellow. An estimate of total grizzly bear population size (plus or minus one standard deviation) is also given, along with the cumulative percent loss of both bear numbers and distributions as percentages. (Mattson 2021).*[19]

The Service first protected the lower-48's few hundred remaining grizzly bears in 1975, when it listed them as threatened.[20] In doing so, the agency cited a long list of threats facing the species, including the modification and destruction of grizzly habitat; the inadequacy of existing regulatory mechanisms; and the continued loss of bears to both "indiscriminate illegal killing" and "control operations[.]"[21]

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[17] 16 U.S.C. §§ 1533(a)(1), (b)(1)(A).

[18] *Id.* § 1533(b)(1)(A).

[19] David. J. Mattson, *Estimating Densities, Distributions, and Total Population Sizes of Extirpated Grizzly Bears in the Contiguous United States*, ResearchGate (Dec. 2021), https://www.researchgate.net/publication/357098026_Estimating_densities_distributions_and_total_population_sizes_of_extirpated_grizzly_bears_in_the_contiguous_United_States.

[20] Amendment Listing the Grizzly Bear of the 48 Coterminous States as a Threatened Species, 40 Fed. Reg. 31,734 (July 28, 1975); *see also* U.S. Fish and Wildlife Serv., Grizzly Bear Recovery Plan 11 (Jan. 29, 1982) [hereinafter 1982 Recovery Plan] (showing dramatic decline in estimated grizzly distribution from 1800 to 1975).

[21] *Id.* At the time of the Service's 1975 listing, Congress had not yet enacted the ESA provision allowing the Service to list a distinct population segment. *See* Endangered Species Act of 1973, Pub. L. No. 93-205, § 3, 87 Stat. 884, 886. The Service accordingly had to rely on its then-existing authority to list, in addition to biological species and subspecies, "any other group of fish or wildlife

To that end, Section 9 under the ESA prohibits the "take" of endangered species, making it illegal for anyone to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" and provides for the extension of such prohibitions to threatened species via rulemaking. 16 U.S.C. §§ 1538(a)(1)(B)(G), 1532(19). With limited exceptions, the Service extended the prohibition on take to protect grizzly bears in the 48 conterminous states. 50 C.F.R. § 17.40(b). In further protecting imperiled species, Congress declared that the purpose of the ESA is to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the[se] purposes. 16 U.S.C. § 1531(b).

## II. The Service's Plans for Grizzly Recovery in the Lower-48

The listing of the lower-48's grizzlies required the Service to provide for their recovery. Under Section 4(f) of the Endangered Species Act, the agency is obligated to "develop and implement … 'recovery plans' … for the conservation and survival of endangered species and threatened species … , unless [it] finds that such a plan will not promote the conservation of the species."[22] Each recovery plan must include "a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species[.]"[23] It must establish "objective, measurable criteria which, when met, would result in a determination … that the species be removed from the list[.]"[24] And it must provide "estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal."[25] Given the importance of the recovery plan, Congress also required the agency to "provide public notice and an opportunity for public review and comment" on every draft recovery plan and "consider all information presented during the public comment period prior to approval of the plan."[26]

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of the same species or smaller taxa in common spatial arrangement that interbreed when mature." *See id.*

[22] 16 U.S.C. § 1533(f)(1).

[23] *Id.*

[24] *Id.*

[25] *Id.*

[26] *Id.* § 1533(f)(4).

### A. The 1982 Grizzly Bear Recovery Plan

The Service finalized its first recovery plan for the lower-48's grizzlies on January 29, 1982.[27] To meet core recovery objectives, the plan required the Service to take four actions: (1) "[i]dentify grizzly bear population goals that represent species recovery in measurable and quantifiable terms for the several regions that were determined to have suitable habitat for such populations, and … provide a data base that will allow informed decisions"; [28] (2) "[i]dentify population and habitat limiting factors that account for current populations existing at levels requiring threatened status under ESA"[29]; (3) "[i]dentify specific management measures needed to remove population limiting factors that will allow the populations to increase or sustain themselves at levels identified in the recovery goals"[30]; and (4) "[e]stablish recovery of at least three populations in three distinct grizzly bear ecosystems in order to delist the species in the conterminous 48 states."[31]

The Service's decision to focus its initial recovery efforts on only three grizzly populations was the product of practical concerns, not science. In the words of the agency:

> The question of how many grizzly populations are needed for recovery of the species was debated repeatedly at … various meetings and workshops. No one … recommend[ed] a single population in a single ecosystem as being adequate to provide a reasonable margin of safety against what Shaffer (1978) described as 'systematic pressures and stochastic perturbations.' Several persons thought all known areas containing grizzlies were necessary for recovery and believed the ESA mandated such action. However, a majority of those in attendance shared the opinion that it was impractical to assume that all six identified populations could be recovered and they believe[d] the recovery plan should concentrate primarily on only three populations; those in the Yellowstone Grizzly Bear Ecosystem … the Northern

[27] 1982 Recovery Plan.

[28] *Id.* at 1.

[29] *Id.*

[30] *Id.*

[31] *Id.*

> Continental Divide Grizzly Bear Ecosystem … and the Cabinet-Yaak Grizzly Bear Ecosystem[.][32]

In selecting the three ecosystems that would benefit from its first recovery efforts, the Service again focused on practicalities, not biology. As the agency explained, the Yellowstone ecosystem "was chosen because of the research data [that had been] collected over the past two decades, a … program [that was already underway,] and an estimated population of several hundred grizzly bears."[33] The Northern Continental Divide ecosystem "was selected because … [a] Border Grizzly Project [wa]s currently collecting data in th[e] ecosystem and it too ha[d] a substantial bear population."[34] And the Cabinet-Yaak ecosystem "was chosen because it ranked third in areas where data had been collected and … [already] ha[d] research projects planned and funded."[35] If additional funding became available, the Service noted that preliminary surveys in the Selkirk Mountains Grizzly Bear Ecosystem, the Selway-Bitterroot Grizzly Bear Ecosystem, and the North Cascades Grizzly Bear Ecosystem would be "recommended in that order."[36]

Given the limits of its 1982 recovery plan, the Service was careful to emphasize that the strategy was only "an initial starting point to promote an increase in the present numbers of bears"—"not a final plan on behalf of grizzly bears" in the lower-48.[37] The plan, in other words, was intended to be "dynamic" and "provide for changes which research indicates are prudent and for periodic reviews."[38]

**B. The 1993 Grizzly Bear Recovery Plan**

In 1993, the Service followed through on its intention to revisit the grizzly's recovery needs by issuing a revised plan for the species—one prepared by the

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[32] *Id.* at 2; *see also id.* (noting that the conservation and recovery of three populations, as opposed to only one or two populations, was "believed necessary to assure perpetuation of the species to a point that no longer requires the protection of the ESA"); *id.* at 103 (noting that biologists had "not been able to unanimously agree on how many populations are necessary for recovery of the species in the conterminous 48 states" and that "[f]or practical purposes and with the welfare of the species in mind, three areas were chosen to concentrate on a recovery effort").

[33] *Id.* at 2.

[34] *Id.*

[35] *Id.*

[36] *Id.*

[37] *Id.* at 6.

[38] *Id.*

agency's Grizzly Bear Recovery Coordinator, Dr. Christopher Servheen.[39] Rather than limiting its definition of recovery to only three bear populations, the Service's revised approach was "directed at establishing viable populations in the six to seven areas in parts of four to five States where the grizzly was known to or believed to exist when it was listed in 1975."[40] For six of these areas—in the North Cascade, Selkirk, Cabinet-Yaak, Bitterroot, Northern Continental Divide, and Greater Yellowstone ecosystems—the plan either established or promised specific recovery criteria that would have to be met before delisting could be considered.[41] And for the seventh—in Colorado's San Juan Mountains—the plan called for "[e]valuat[ing] the feasibility of grizzly bear recovery" with a "focus on habitat values, [the] size of the area[], human use and activities in general, [the region's] relation to other areas where grizzly bears exist, and historical information."[42]

While the Service's 1993 plan expanded the reach of the agency's conservation efforts, it again stopped short of requiring true biological recovery for the lower-48's grizzlies. As the Service acknowledged, it is "widely accepted in conservation biology that island populations of any species are subject to high rates of extinction"—and that "[w]ide ranging mammals [like grizzly bears] are particularly sensitive to the detrimental effects of insular distribution."[43] The agency's revised plan, however, provided for the "[d]elisting of each of the remaining"—and "largely discontinuous"—grizzly populations "by population" as they met their individual recovery goals.[44]

Despite this language, the Service's revised plan did recognize the importance of establishing natural connectivity and genetic exchange within the lower-48's grizzly population. As the plan stated:

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39 U.S. Fish and Wildlife Serv., Grizzly Bear Recovery Plan (Sept. 10, 1993) [hereinafter 1993 Recovery Plan].

40 *Id.* at ix; *see id.* at 11–13 (discussing grizzly bear distribution and status in 1993).

41 *Id.* at ii, 39–121.

42 *Id.* at 121; *see also id.* at ii (noting that the "San Juan ecosystem is being evaluated as a possible recovery zone and is not yet considered established").

43 *Id.* at 23; *see also id.* at 24 (noting that "[l]oss and fragmentation of natural habitat is particularly relevant to the management and survival of grizzly bears[,]" as "[g]rizzlies are large animals with great metabolic demands requiring extensive home ranges" and "[t]heir low densities, low reproductive rate, individualistic behavior, and association with riparian habitat that is also used extensively by man cause grizzlies to be more vulnerable to extirpation than many other species").

44 *Id.* at ii, 23.

> [P]reserving linkage between populations is a more legitimate long-term conservation strategy than are attempts to manage separate island populations. ... The existence of individuals and habitats within linkage zones could act to provide a connection between larger populations. Linkage zones enhance the viability of populations that are separated by some distance by facilitating the exchange of individuals and maintaining demographic vigor and genetic diversity.[45]

Ultimately, the Service was careful to emphasize that "the possibility of linkage between the existing island populations" remained a "consideration in future grizzly bear management"—and that the agency's revised recovery plan "will be revised" again, "as future research indicates that changes are needed."[46]

In his new report on the urgent need for a revised grizzly plan, Dr. Servheen again confirms that the Service's 1993 planning efforts, which he authored, were dominated by the need for triage—the need to prevent the lower-48's struggling bear populations from disappearing entirely. As explained by Dr. Servheen:

> At the time of the original recovery plan (1982) and the revised recovery plan (1993), the recovery of grizzly bears was envisioned to occur within the six to seven … recovery areas … where grizzlies either were or were thought to be. At that time, little thought was given to the possibility of bears outside these recovery areas because the primary challenge was to simply achieve recovery within these separate areas. The challenges to achieving recovery in the six to seven recovery areas were formidable so there was minimal consideration of connecting these recovery areas or to imagining grizzly bears in areas outside the recovery areas.[47]

To achieve full recovery, the Service now needs to revise its management of the Northern Rockies' grizzly bears as "island populations [that] are subject to high rates of extinction,"[48] and require the establishment of a naturally connected metapopulation of grizzly bears within the Northern Rocky Mountains.[49]

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[45] *Id.* at 24; *see also id.* (noting that "[o]ne factor that may affect the sustainability of grizzly bear populations in the future is the ability of individual animals to move between ecosystems").

[46] *Id.* at 24, 31; *see also id.* at 31 (noting that the 1993 recovery plan, like its predecessor, was "not a final plan on behalf of grizzly bears" and was instead "intended to be dynamic").

[47] Christopher Servheen, Proposed Revisions to the Grizzly Bear Recovery Plan 3 (Dec. 9, 2024) (Exhibit A) [hereinafter Servheen Report].

[48] 1993 Recovery Plan at 23.

[49] Servheen Report at 7.

## III. The Slow Recovery of Grizzlies in the Lower-48 and the Service's Premature Attempts at Delisting in the Greater Yellowstone Ecosystem

The need for a revised approach to grizzly recovery has been confirmed by the challenges still facing bears in the lower-48. At present, the region's isolated Selkirk, Cabinet-Yaak, Greater Yellowstone, and Northern Continental Divide ecosystems support a total of approximately 2,000 grizzlies—approximately four percent of the estimated historical population in the western United States.[50] And critically, these bears have yet to achieve the status of a fully functioning metapopulation. In fact, the most recent Species Status Assessment acknowledges that the number of bears in the Selkirk and Cabinet-Yaak ecosystems remain "very low" and that the Bitterroot Ecosystem remains devoid of a permanent population, according to the Service.[51] The continued absence of a robust grizzly bear population in the Bitterroot has caused the grizzlies in the Greater Yellowstone region to remain isolated, leaving them at risk of genetic and demographic declines.[52] Before true biological recovery can be declared in the U.S. Northern

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[50] *Id.* at 4; U.S. Fish and Wildlife Serv., 90-Day Finding on a Petition to Identify and Delist the Northern Continental Divide Distinct Population Segment of the Grizzly Bear (*Urus Arctos Horribilis*) under the Endangered Species Act (Docket No. FWS-R6-ES-2022-0150) (Dec. 14, 2022), at 5 (stating that the NCDE population "currently exceeds 1,000 bears"); U.S. Fish and Wildlife Service, 90-Day Finding on a Petition to Establish the Greater Yellowstone Ecosystem Grizzly Bear Distinct Population Segment and Remove the Greater Yellowstone Ecosystem Grizzly Bear Distinct Population Segment from the Federal List of Endangered and Threatened Wildlife (Docket No. FWS-R6-ES-2022-0150) (Dec. 14, 2022), at 5 (noting that the State of Wyoming has "assert[ed] that the GYE grizzly population currently exceeds 1,000 bears"); *see also* U.S. Fish and Wildlife Serv., *Grizzly Bear*, https://www.fws.gov/species/grizzly-bear-ursus-arctos-horribilis (last visited Dec. 5, 2024) (estimating that there are "[c]urrently … at least 1,923 individuals in the 48 contiguous states, with 727 in the GYE demographic monitoring area, 1,092 in the NCDE, about 60 in the CYE and a minimum of 44 in the United States portion of the SE," and noting that "[i]n the GYE, this estimate does not capture the entire distribution of grizzly bears").

[51] U.S. Fish and Wildlife Serv., Species Status Assessment for the Grizzly Bear in the Lower-48 States: A Biological Report 12 (Jan. 2022, Version 12) [hereinafter 2022 Grizzly Bear Status Assessment].

[52] *See, e.g.*, U.S. Fish and Wildlife Serv., Grizzly Bear Recovery Program 2022 Annual Report 11–12; 2022 Grizzly Bear Status Assessment at 55 (noting that "[t]he GYE grizzly bear population remains isolated today, with no evidence of genetic exchange with any other population[,]" but that "the distance between current distributions of grizzly bears in the GYE and NCDE has decreased recently and distributions are now are close … with multiple verified sightings in between, and it is likely that natural connectivity will occur in the near future"); *id.* at 170 (noting that the Yellowstone population "ha[s] not yet achieved levels of *Ne* [effective population size] that would support long-term genetic viability").

Rockies, natural connectivity must be established, maintained, and protected there.[53]

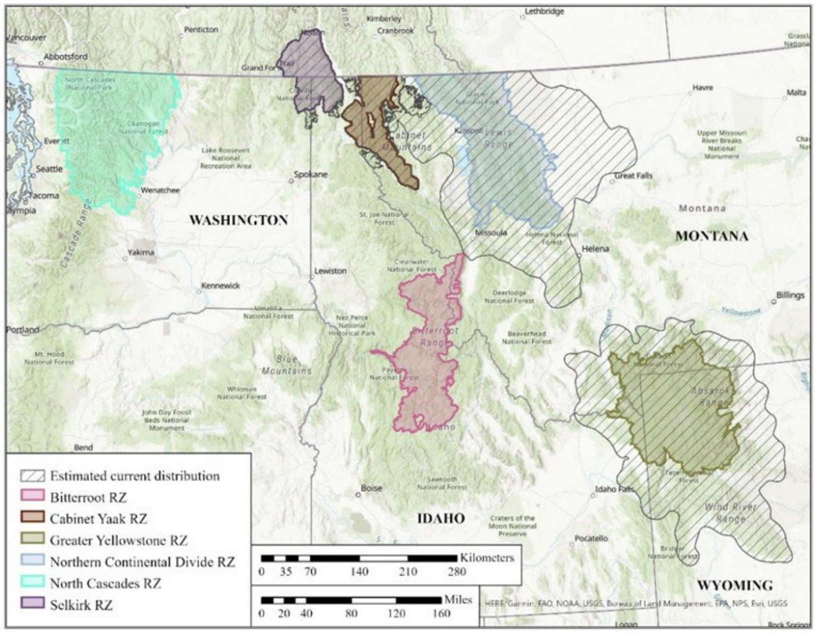


*Fig. 2. Recovery zones and estimated distributions for the six ecosystems identified in the 1993 Recovery Plan.*[54]

Rather than requiring this needed connectivity, the Service has instead attempted to delist the Yellowstone region's isolated bear population—twice. In 2007, the agency made its first attempt at declaring that the Greater Yellowstone's grizzlies had achieved recovery and should accordingly be stripped of the ESA's protections.[55] A federal district court in Montana, however, vacated the Service's

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[53] In a recent update to the Bitterroot Ecosystem Grizzly Bear Restoration Plan EIS process, the Service's proposed action allows for the natural recolonization of grizzly bears in the Bitterroot. Recolonization of the Bitterroot represents an important step toward achieving connectivity and recovery and would necessitate stronger state and federal regulatory mechanisms to protect bears and habitat both in the recovery areas and in connective zones in between. U.S. Fish and Wildlife Serv., Bitterroot Ecosystem Grizzly Bear Restoration Plan EIS: Quarterly Update—Fall 2024, https://www.fws.gov/sites/default/files/documents/2024-09/be_gb_eis_public-update_q3_sept_09262024.pdf.

[54] *Id.* at 2 ("Estimated distributions are current as of 2020 for the Greater Yellowstone and the Northern Continental Divide and are current as of 2019 for the Cabinet-Yaak and Selkirk. There are currently no known populations in the North Cascades and Bitterroot. Current estimated distributions represent 'occupied range,' which do not include low-density peripheral locations and represent a minimum known area of occupancy, not extent of occurrence.").

[55] *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) [hereinafter 2007 Delisting Rule].

decision based on the inadequacy of the regulatory scheme that had been developed for the population's post-delisting management and the fact that the agency had arbitrarily discounted the threat posed by the decline of the whitebark pine, whose seeds had long been a key food source for bears in the region.[56]

The Ninth Circuit affirmed the district court's vacatur of the Service's delisting rule in 2011.[57] In doing so, the court faulted the Service for relying on the grizzly's omnivorous diet to buffer the impacts of whitebark pine loss, noting that "the heart of the threat that whitebark pine loss poses to the bears" is "increased proximity to humans when bears *do* adapt to seed shortages by seeking substitute foods."[58] "That the bears are likely to seek alternate foods in the face of whitebark pine decline[,]" the court emphasized, "is a part of the problem, not an answer to it."[59]

The Ninth Circuit's decision proved prophetic. In response to further, catastrophic declines in the availability of whitebark pine seeds, the Yellowstone region's bears have increasingly shifted to a diet based more on wild ungulates, offal, livestock, and wounded animals left by hunters.[60] And as grizzlies have become more dependent on meat, they have come into increasing conflict with hunters and ranchers—conflict that often proves fatal for bears when hunters open fire in response to perceived threats to their safety, or when government wildlife managers kill bears that have been drawn to unsecured attractants.[61]

Despite the rise in human-caused grizzly mortalities, the Service made a second attempt at delisting the Yellowstone region's bears in 2017.[62] Again, the district court vacated the agency's delisting rule, concluding that the Service acted

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[56] *See Greater Yellowstone Coal. v. Servheen*, 672 F. Supp. 2d 1105, 1120 (D. Mont. 2009), *aff'd in relevant part, rev'd in part, and remanded*, 665 F.3d 1015 (9th Cir. 2011).

[57] *Greater Yellowstone Coal. v. Servheen*, 665 F.3d 1015, 1032 (9th Cir. 2011).

[58] *Id.* at 1026 (emphasis in original).

[59] *Id.*

[60] *See, e.g.*, Michael R. Ebinger *et al.*, *Detecting Grizzly Bear Use of Ungulate Carcasses Using Global Positioning System Telemetry and Activity Data*, 181 Oecologia 695, 703–05 (2016) (documenting increased grizzly reliance on ungulate carcasses coinciding with the decline in whitebark pine).

[61] Kerry A. Gunther, *et al.*, *Grizzly Bear–Human Conflicts in the Greater Yellowstone Ecosystem, 1992–2000*, 15 Ursus 10, 13–16 (2004); Charles C. Schwartz, *et al.*, *Hazards Affecting Grizzly Bear Survival in the Greater Yellowstone Ecosystem*, 74 J. of Wildlife Mgmt. 664, 664–65 (2010); Interagency Grizzly Bear Study Team, Yellowstone Mortality and Conflicts Reduction Report 14 (2009).

[62] 2017 Delisting Rule, 82 Fed. Reg. at 30,502.

arbitrarily and capriciously in delisting the grizzlies in the Yellowstone ecosystem without considering the impact on remaining bears within the lower-48 grizzly designation.[63] The district court also held that the Service's failure to require a recalibration provision in the Conservation Strategy was arbitrary and capricious and that the agency had "failed to demonstrate that genetic diversity within the Greater Yellowstone Ecosystem, long-recognized as a threat to the Greater Yellowstone grizzly's continued survival, has become a non-issue."[64]

On appeal, the Ninth Circuit affirmed almost wholesale the district court's order, vacating the Service's delisting rule on the basis that the rule lack adequate protections of grizzlies' long-term genetic health.[65] The Ninth Circuit noted that the agency's delisting decision ignored a vital question the D.C. Circuit had recently emphasized in *Humane Society of the United States v. Zinke*: "'the continuing status of the species' remnant'" following the identification and delisting of a new distinct population segment (DPS).[66]

The court's analysis focused on the agency's failure to determine whether the lower-48 listing would remain viable under the statute once the Yellowstone population had been cut out of it.[67] As a result of this failure, the Ninth Circuit noted:

> [W]e do not know whether the remnant grizzly population would be protectable as a species after the delisting of the Yellowstone grizzly, because the [Service] … [did] not examine[] the remnant. The [agency] … 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.[68]

The court accordingly ordered the Service to determine "whether there is a sufficiently distinct and protectable remnant population, so that the delisting of … [a Yellowstone] DPS will not further threaten the existence of the remnant."[69] This analysis, the Ninth Circuit emphasized, "requires a review of the 'implications for both the segment and the remnant during the delisting process,' in order to ensure

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[63] *Crow Indian Tribe v. United States*, 343 F. Supp.3d 999 (D. Mont. 2018).

[64] *Id.* at 1018, 1021.

[65] *Crow Indian Tribe v. United States*, 965 F.3d 662, 679 (9th Cir. 2020).

[66] *Id.* at 673, (quoting *Human Soc'y v. Zinke*, 865 F.3d 585, 601 (D.C. Cir. 2017)).

[67] *Id.* at 677–78.

[68] *Id.* at 677.

[69] *Id.* at 678.

that the remnant is not 'divested of legal force.'"[70] And "[i]f, after such an inquiry, the [Service] determines that delisting the DPS would render the remnant population no longer viable, no partial delisting can take place."[71]

## IV. A Summary of Existing Threats to Grizzly Bears in the U.S. Northern Rockies

Threats to grizzly bears remain unresolved or have increased since the Service's last attempt at delisting them from ESA protections.[72] As noted in Dr. Servheen's report, widespread development across the Northern Rockies has compromised grizzly habitat and increased mortality rates. At the same time, the federal and state governments have adopted anti-carnivore policies, leaving grizzly bears increasingly at risk without adequate regulatory mechanisms to protect them or their habitat. These and other ongoing threats stand in the way of lasting recovery. They include, but are not limited to:

### A. Lack of Connectivity, Population Resilience, and Long-Term Genetic Viability

Even after decades of management under the 1993 Recovery Plan, grizzly bear populations in the U.S. Northern Rockies face headwinds to their long-term resiliency due to isolation and lack of connectivity (most acutely for the Greater Yellowstone Ecosystem) to other populations. Best-available science underscores the critical role that connectivity plays in the genetic and demographic resiliency of a species. Grizzly bears are less resilient if they live in isolated populations that, due to fragmented habitat, cannot be recolonized by a neighboring population if a catastrophic event reduces or kills off the population. Natural connectivity is also critically important to genetic diversity and viability for grizzly bears, particularly in the context of their conservation in fragmented habitats like the Northern Rockies.

The best available science demonstrates that *effective population size*—which is the reproductive members of a population—is just a fraction of the total number of the population.[73] Identifying both an effective and total metapopulation objective

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[70] *Id.* (cleaned up) (quoting *Humane Soc'y*, 865 F.3d at 601).

[71] *Id.*

[72] *See* Appendix of Relevant Literature (Exhibit B) (citing numerous scientific authorities categorizing threats to grizzly bears).

[73] *See, e.g.*, Hans Ellegren, & Nicolas Galtier *Determinants of genetic diversity*, 17 Nature Reviews Genetics 422 (2016); Richard Frankham, Corey J.A. Bradshaw, & Barry W. Brook, *Genetics in conservation management: Revised recommendations for the 50/500 rules, Red List criteria and*

would be a necessary component of a revised grizzly bear recovery plan, which also includes occupancy goals and connectivity (that is, safe passages) between each of the recovery areas as Dr. Servheen recommends in his report. The management of the U.S. Northern Rockies as a functioning metapopulation with movement within and between these population units and continued functional movement with adjacent grizzly populations in British Columbia and Alberta will enhance the genetic and demographic resilience and adaptability of grizzly bears in their remaining habitats south of Canada.

Genetic exchange is essential for the species' long-term survival and to prevent inbreeding with potential reduced adaptability. While grizzly bears within the separate recovery areas in the Northern Rockies are getting closer to connecting, there is inadequate natural movement of bears between the five recovery areas to provide sufficient resiliency and genetic exchange. Adequate regulatory mechanisms are needed to secure natural connectivity between the isolated populations and recovery areas. Without natural connectivity, grizzly bears will continue to face increased risks of extinction due to genetic bottlenecks, small, isolated populations and climate change and environmental pressures.

### B. Increased Human-Caused Mortality

Human activities remain the leading cause of grizzly bear mortality, and the range of direct human-caused mortality factors illustrates the complex challenges grizzly bears face in their habitats. Bears frequently die from conflicts with humans over attractants, such as improperly stored human-related foods and livestock depredations. Idaho, Montana, and Wyoming have relaxed hunting and trapping regulations of other animals to the point of causing foreseeable risk of injury or death to grizzly bears.[74] The States have allowed wolf trapping and snaring in grizzly bear habitat, as well as hound hunting and baiting of black bears, which are proven to place grizzlies at risk. Vehicle collisions, mistaken-identity killings, self-defense and illegal killings are also frequent causes of bear mortality. These human-bear interactions are exacerbated by the expansion of human infrastructure and activities into bear habitats. The current management of human-bear conflicts has been insufficient in reducing mortality rates. Reducing these conflicts through

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*population viability analyses,* 170 Biological Conservation 56 (2014); Craig L. Shafer, *A Greater Yellowstone Ecosystem Grizzly Bear Case Study: Genetic Reassessment for Managers*, 14 Conservation Genetics Res. 331 (2022); Ian G. Jamieson & Fred W. Allendorf, *How does the 50/500 rule apply to MVP?*, 27 Trends in Ecological Evolution 578 (2012).

[74] *See, e.g.*, *Flathead-Lolo-Bitterroot Citizen Task Force v. Montana*, 98 F.4th 1180 (9th Cir. 2024); *Ctr. for Biological Diversity v. Little*, 724 F. Supp. 3d 1113 (D. Idaho 2024).

better management practices, assistance to livestock producers, public education, and coexistence measures is essential to protect grizzly populations.

### C. Human-Caused Habitat Fragmentation and Displacement

Habitat alienation is another major factor in the decline of grizzly bear populations, as bears increasingly avoid areas with high human activity. State and federal regulatory mechanisms, particularly forest plans and amendments, have failed to protect bears against high recreation pressure in key habitats and high-density road networks. These factors contribute to habitat avoidance and fragmentation, limiting the bears' ability to access vital resources and move between populations. High road densities, traffic volumes, and lack of safe road crossings create dangerous conditions for bears, leading to higher mortality from vehicle collisions, restricted movement, and habitat avoidance. Protecting and restoring habitats, along with establishing wildlife corridors, is crucial to preserving bear populations and reducing habitat alienation.

### D. Climate Change and Anthropogenic Environmental Degradation

Climate change has significantly affected grizzly bear habitat by altering food availability and habitat productivity. Changing climate has contributed to the loss of changes in distribution and abundance of food sources and as a result bears have been forced to shift their diets in some places. Wildfires and urban sprawl further degrade bear habitat. Addressing these issues requires adaptive management strategies to mitigate the effects of climate change and better private land development planning to reduce human encroachment into important bear habitats.

### E. Coexistence Practices

The leading cause of grizzly deaths is management killings due to livestock depredation. Current coexistence strategies being employed by certain producers and landowners have significant potential to reduce bear/livestock conflicts and increase tolerance and outcomes for grizzly bears. Efforts led by agriculture producers, landowners, and conservation organizations to reduce conflicts serve as a model of successful coexistence practices. The States need to promote and invest in more conflict-reduction programs—such as the Grizzly Conflict Reduction Grazing Agreement, a market-based approach that empowers ranchers to attract support from conservation partners to bring positive economic and environmental outcomes, and the National Fish and Wildlife Foundation America the Beautiful Challenge, which provides resources and technical support to producers so they can adopt voluntary nonlethal conflict prevention tools, including carcass removal programs, electric fencing, range riders and bear-resistant garbage services—to enhance current coexistence efforts. Bolstering programs and resources like these are key to changing perspectives toward bears and will promote reduction in human-bear conflicts, ensuring long-term survival of the species.

## V. The Pending Delisting Petitions and the Need for a New Path Forward

In the wake of the Ninth Circuit's decisions overturning the FWS' prior delisting decisions, and with threats unresolved and in many circumstances increasing, the need for a thorough reassessment of grizzly conservation in the lower-48 states has only become more apparent. At present, the Service is considering three petitions to delist some or all of the lower-48's bears: one focused, once again, on the Greater Yellowstone Ecosystem; one targeting the grizzlies of the Northern Continental Divide; and one aimed at stripping the ESA's protections from every grizzly bear in the continental United States.[75] For all of the reasons raised in the many comments submitted by the undersigned organizations, these petitions must be denied.[76] Grizzlies have not achieved durable recovery. To ensure that future conservation and delisting efforts are premised on the actual needs of the grizzly, the Service must revise its more than thirty-year-old recovery plan and bring it up to date with current best available science.

## Petition for a Revised Grizzly Recovery Plan

With his attached report, the biologist who led the development of the Service's 1993 plan—Dr. Christopher Servheen—has explained the urgent need to adopt a revised framework for grizzly conservation in the U.S. Northern Rockies.[77]

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[75] *See* Wyoming Governor Mark Gordon, Petition to Establish the Greater Yellowstone Ecosystem (GYE) Grizzly Bear (*Ursus arctos horribilis*) Distinct Population Segment (DPS) and Remove the GYE Grizzly Bear DPS from the Federal List of Endangered and Threatened Wildlife (Jan. 10, 2022); Montana Governor Greg Gianforte, A Petition to Identify and Delist the Northern Continental Divide Distinct Population Segment of the Grizzly Bear (*Ursus arctos horribilis*) under the Endangered Species Act (Dec. 17, 2021); Idaho Governor Brad Little, Petition to Delist Grizzly Bear (Ursus arctos horribilis) in the Conterminous "Lower 48" United States from the Federal List of Endangered and Threatened Wildlife (Mar. 9, 2022).

[76] *See* Earthjustice, *et al.*, Comments on the Pending Petitions to Delist Grizzly Bears in the Northern Continental Divide Ecosystem and the Greater Yellowstone Ecosystem (FWS–R6–ES–2022–0150) (Dec. 3, 2023); *See* Humane Society Legislative Fund, *et al.*, Comment on the Pending Petitions to Delist Grizzly Bears in the Northern Continental Divide Ecosystem and the Greater Yellowstone Ecosystem (FWS–R6–ES–2022–0150) (June. 14, 2024) (38 scientists and academics oppose delisting, due in part to continued threats and lack of connectivity between recovery areas and bear subpopulations).

[77] Servheen Report at 1–32.

In the words of Dr. Servheen, the agency's current, "compartmentalized approach" to grizzly-bear management—which "judges the health and recovery status of individual recovery areas independent of the other areas"—"does not reflect the best available science applied to the northern Rockies grizzly population as it exists today."[78] "To reflect current science and the status of the current grizzly population," it is accordingly essential that the Service adopt and implement "a unified, comprehensive metapopulation approach to grizzly bear recovery in the entire Northern U.S. Rockies."[79] This will require a number of things—among them, (1) the establishment of a new recovery standard that requires the establishment of a naturally functioning grizzly metapopulation in the Northern Rockies; (2) the development of management guidelines that are sufficient to protect bears and their habitat in the areas that connect the region's ecosystems; (3) the implementation of an updated monitoring scheme that will allow the Service to confirm when a connected and resilient metapopulation has been established across the region's five grizzly recovery areas; and, finally, (4) the adoption of durable and adequate regulatory mechanisms that will ensure the U.S. Northern Rockies metapopulation remains recovered following delisting.

## VI. The Need for a New Recovery Standard Requiring a Connected Metapopulation of Grizzlies in the U.S. Northern Rockies

In updating its existing plan for grizzly conservation, the Service must begin with the plan's inadequate standard for the bears' recovery. As Dr. Servheen explains:

> To adequately address the listing factors related to sufficient habitat and the number of bears needed to achieve and maintain recovery, and to increase the resiliency of grizzly bears south of Canada, it is necessary to revise the approach taken in the original recovery plan(s) of considering each of the grizzly recovery areas or ecosystems separately. This is necessary because the long-term survival of grizzly bears in the Northern U.S. Rockies will best be served by managing these bears as an interconnected, naturally functioning metapopulation in the Northern U.S. Rockies for genetic and demographic health[.][80]

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[78] *Id.* at 7.

[79] *Id.* A not-exhaustive compilation of the grizzly-bear research that must be considered by the Service is included with this petition in Exhibit B, Appendix of Relevant Literature. Maps illustrating grizzly bear habitat and movement areas can be found at Bader and Sieracki, 2024, p. 10, Figure 5; and Mattson 2021, p. 31, Figure 12.

[80] *Id.* at 9.

The metapopulation approach to wildlife conservation "has now been firmly established in population biology."[81] It is focused, of course, on the establishment and maintenance of metapopulations—"ensemble[s] of interacting populations connected by dispersal of individuals among them."[82] As researchers have shown, "[m]etapopulation processes are central to the persistence of species in fragmented landscapes" and they can also play a significant role "at the margin of [a] species range[.]"[83] This is a result of the connectivity that a functioning metapopulation requires. When members of one population are able to reach and join a smaller, neighboring population, "the genetic and demographic contribution of immigrant individuals may potentially rescue the [neighboring] population from extinction by increasing its population size, thus lowering the chances of disappearing because of demographic or genetic stochasticity."[84]

In light of this comprehensive science, Dr. Servheen states that, "[t]he naturally functioning metapopulation concept is particularly appropriate to the grizzly bear in the Northern U.S. Rockies because the historical relationship between grizzlies and humans resulted in gradual elimination of grizzlies from formerly contiguous habitats … and the creation of island populations of grizzlies in a sea of human activities[.]"[85] To remedy this fragmentation—and to counter the mounting threats of climate change and human population growth—the Service

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[81] Hanski, I, and D. Simberloff. 1997. The Metapopulation Approach, Its History, Conceptual Domain, and Application to Conservation. In Metapopulation Ecology, Ecology, Genetics and Evolution. *Available at* https://www.sciencedirect.com/science/article/abs/pii/B9780123234452500031.

[82] Marquet, P. 2002. Metapopulations. In Encyclopedia of Global Environmental Change, Volume 2, The Earth System: Biological and Ecological Dimensions of Global Environmental Change. *Available at* https://marquet.cl/wp-content/uploads/2016/10/3_marquet_2002a-metapopulations_chapter.pdf. *See also, e.g.*, van Nouhuys, S. 2016. Metapopulation Ecology. In: eLS. John Wiley & Sons, Ltd: Chichester. DOI: 10.1002/9780470015902.a0021905.pub2 (defining "metapopulation" as a "spatially structured population that persists over time as a set of local populations with limited dispersal between them").

[83] van Nouhuys (2016), at 2, 5. *See also, e.g.*, Marquet (2002), at 1 (noting that "[m]any species exist as metapopulations, and more are expected to do so, considering that the distribution of habitats within landscapes is becoming increasingly patchy through habitat loss, degradation, and fragmentation").

[84] Marquet (2002), at 4. *See also* 2022 Grizzly Bear Status Assessment at 174 (noting that "as few as one to two effective migrants per generation can maintain or enhance genetic diversity" but that "[n]o effective migrants into the GYE have been detected to date").

[85] Servheen Report at 7; *see also id.* (explaining that a metapopulation approach to grizzly management in the Northern Rockies is appropriate because "[t]he region's bears are currently at the southern margin of the grizzly's distribution in North America[;]" their "remaining populations … [a]re relatively small[;]" and "[p]rior to initiation of the grizzly bear recovery program, the … populations … were declining and close to extinction").

must take "a unified approach to achieving grizzly recovery across the landscape by considering all five Northern U.S. Rockies populations as one metapopulation that must achieve and maintain natural connectivity."[86]

## VII. The Need for New Management Guidelines Sufficient to Protect Bears in Connecting Habitats

The essential elements of a metapopulation-based management scheme are set out in the attached report of Dr. Servheen.[87] To summarize them, the Service's revised plan must include and implement a number of fundamental changes to grizzly bear conservation:

- *First*, it must abandon the "approach taken in the original recovery plan(s) of considering each of the grizzly recovery areas or ecosystems separately" requiring, instead, that they be managed "as an interconnected, naturally functioning metapopulation in the Northern U.S. Rockies for genetic and demographic health[.]"[88]
- *Second*, it must define the external boundaries of the area in which a metapopulation will be established and protected, and the "details of the boundary … should be legally described to include all five recovery areas in the Northern U.S. Rockies and the contiguous connecting habitats between them."[89]
- *Third*, as "[g]enetic … and demographic rescue … can only happen if there is continued management effort to establish and maintain movement and connectivity opportunities between the five Northern U.S. Rockies grizzly areas[,]" the plan must require such management effort.[90]
- *Fourth*, it must establish "occupancy goals for the connectivity areas between each of the five ecosystems within the metapopulation that

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[86] *Id.* at 8.

[87] Numerous scientific publications and expert reports support a unified Northern Rockies grizzly bear population (i.e. metapopulation), and necessary management strategies to achieve species recovery. *See* Appendix of Relevant Literature (Exhibit B), "Metapopulation" section; *see also* Servheen's Report, p. 33, including a list of additional biologist and land managers who endorse the metapopulation approach.

[88] *Id.* at 9.

[89] *Id.*

[90] *Id.* at 12–13.

emphasizes that grizzly presence is needed but at lower densities than within each of the ecosystem boundaries."[91]

- *Fifth*, it must establish habitat and mortality requirements for the region's connectivity areas, as if "grizzlies are to ever successfully and durably connect the five recovery areas, there must be specific habitat and mortality management systems … in place for all the connectivity areas."[92]
- *And finally*, it must establish "population objectives for eventual increasing populations in the recovery areas where population objectives are not yet met, including the Cabinet/Yaak, Selkirks, and the Bitterroot recovery areas."[93]

Given all the Service has learned since it last revised the grizzly's recovery plan, it should be well-positioned to develop and implement these amendments—with the assistance of the public.[94] These revisions should be reflected in the Conservation Strategies that inform land management policies, particularly land and resource management plans. Where specific conservation strategies have been incorporated into those plans, courts have found them to be inadequate and therefore the strategies should be revised to better provide for grizzly bear recovery.[95]

## VIII. The Need for an Updated Monitoring Scheme that Is Sufficient to Document the Establishment and Maintenance of a Grizzly Metapopulation in the U.S. Northern Rockies

The Service's revised recovery standard will require a revised monitoring program—one that will gather the data needed to confirm that a grizzly metapopulation is being established and maintained in the U.S. Northern Rockies. State and federal officials, of course, will need to engage in continued "population monitoring … for each recovery area"—with a new requirement that "population

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[91] *Id.* at 15.

[92] *Id.* at 18.

[93] *Id.* at 15.

[94] 16 U.S.C. § 1533(f)(4) (noting that the Service must, "prior to final approval of a new or revised recovery plan, provide public notice and an opportunity for public review and comment on such plan" and "consider all information presented during the public comment period prior to approval of the plan").

[95] Conservation strategies influence forest management policies and decisions and have resulted in several key court decisions against federal agencies: *Swan View Coalition v. Haaland*, CV 22-960M-DLC (D. Mont. June 28, 2024); *WildEarth Guardians v. Steele*, CV 19-56-M-DWM (D. Mont. June 24, 2021).

data [be reported] for the entire metapopulation area as one population[.]"[96] But as Dr. Servheen has emphasized, there will also be a need for the monitoring required to confirm connectivity. This includes "[m]onitoring the occupancy goals and connectivity between the ecosystems within the metapopulation area using techniques like camera traps, DNA hair sampling, credible sightings, and radio collaring."[97] And it will further require managers to monitor "genetic indicators of connectivity by genetic sampling of each bear captured [or found dead] in the metapopulation area[,]" as "[t]hese genetic data will allow confirmation of connectivity by documenting the distribution of bears from genetically identifiable population areas and the eventual interbreeding of bears when it occurs from two different population units."[98]

## IX. The Need for Regulatory Mechanisms that Will Be Sufficient to Protect a U.S. Northern Rockies Metapopulation following Delisting

By regulation, the Service specifically prohibited harassing, harming, hunting, shooting, wounding, killing, trapping or otherwise capturing grizzly bears in the 48 conterminous states, with limited exceptions.[99] But once a fully functioning metapopulation of grizzlies has been established and documented in the Northern Rockies, the Service will have to ensure that the relevant states' regulatory schemes will be adequate to maintain the metapopulation.[100] Already, Idaho, Montana, and Wyoming have demonstrated both a willingness and a desire to "drive [bear] numbers down"—"even in core grizzly habitats"—following delisting.[101] As Dr. Servheen and other former wildlife officials have emphasized, sport hunting is not an effective or necessary management tool.[102] Once a functioning metapopulation has actually been established in the region, the Service

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[96] Servheen Report at 15.

[97] *Id.*

[98] *Id.*

[99] 16 U.S.C. §§ 1538(a)(1)(B), 1539(a)(1), 1532(19); 50 C.F.R. § 17.40(b)(1)(i)(A)-(F).

[100] 16 U.S.C. § 1533(a)(1)(D) (requiring the Service to evaluate "the inadequacy of existing regulatory mechanisms" when considering petitions to list or delist a species).

[101] *See, e.g.*, Christopher Servheen, *et al.*, FWP Misses the Mark on Grizzly Delisting, *Mountain Journal* (Feb. 28, 2024), *available at* https://mountainjournal.org/wildlife-experts-say-montana-not-ready-to-delist-grizzly-bear;

[102] *Id.* (the comments of Dr. Servheen, as joined by Tim Aldrich and Gary Wolfe, former members of the Montana Fish and Wildlife Commission; Tom Puchlerz, a former supervisor with the U.S. Forest Service; Harvey Nyberg, a former regional supervisor with Montana Fish, Wildlife and Parks; and Dale Becker, a former wildlife program manager with the Confederated Salish and Kootenai Tribes).

will need the States to guarantee that adequate regulatory mechanisms will "apply to the entire metapopulation" area—not just core grizzly habitats.[103]

In his report, Dr. Servheen has outlined a number of the regulatory mechanisms—both state and federal—that will be required in the Northern U.S. Rockies to ensure grizzly bear recovery is not jeopardized by excessive human-caused mortality and fragmentation following delisting.[104] They include:

- *First*, a permanent prohibition on "all wolf trapping and neck snaring with or without bait in all areas in the Northern U.S. Rockies metapopulation area except between January 1 to February 15 when most grizzlies are in dens."[105]
- *Second*, a permanent prohibition on "all shooting of wolves and other carnivores at night using bait, artificial lights, or night vision scopes in all areas in the Northern U.S. Rockies metapopulation area except between January 1 to February 15, when most grizzlies are in dens[,]" with a year-round prohibition in place within all five recovery areas.[106]
- *Third*, a permanent prohibition on "all hound hunting of black bears in all portions of the Northern U.S. Rockies metapopulation area."[107]
- *Fourth*, a permanent prohibition on "sport hunting of grizzly bears [in all connectivity areas between the five recovery areas] in the Northern U.S. Rockies metapopulation area."[108]
- *Fifth*, "expand[ed] efforts to reduce human-bear conflicts in all connectivity areas between the five recovery areas to reduce the possibility of human-bear conflicts and resulting mortalities."[109]
- *Sixth*, population-management plans that "manage stable populations in each of the demographic monitoring areas and/or recovery areas and in connectivity areas after recovery and delisting."[110]

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[103] Servheen Report at 23.

[104] *Id.* at 23–32.

[105] *Id.* at 23.

[106] *Id.* at 24.

[107] *Id.* at 25.

[108] *Id.* at 26.

[109] *Id.*

[110] *Id.* at 28.

- *Seventh*, habitat-management commitments that address the threats posed by increasing development and recreation.[111]
- *And finally*, "reliable commitments by state and federal agencies that state and federal laws and policies that resulted in the recovery of the Northern U.S. Rockies metapopulation and met the requirements for delisting remain in place after delisting."[112]

The States have given every indication, again, that they will resist any effort to impose needed restrictions on grizzly-bear mortalities following delisting. The Endangered Species Act makes it clear, however, that state officials cannot resume management of recovered species until they have put all required protections into place.[113] And as the Service noted in its 1993 Recovery Plan, a "lack of full cooperation … will only waste dollars and eventually increase the cost of recovery or increase the costs for tasks that will be necessary to prevent extinction of small populations."[114]

## Conclusion

The desire to declare victory in the fight for grizzly recovery is, in a sense, understandable. After nearly fifty years of effort by wildlife managers and the public, grizzly populations have substantially increased within two of the lower-48's remaining ecosystems. And based on recent "estimates of occupied range for grizzly bears … and verified outlier observations, the likelihood of genetic connectivity through natural bear movement [between the Northern Continental Divide Ecosystem and the Greater Yellowstone Ecosystem] is better now than at any other time since listing in 1975."[115] Not only is connectivity achievable, nascent efforts by producers and landowners to adopt coexistence strategies have shown that, with sustained effort, tolerance for bears in these connecting habitats is possible. For a true and durable recovery to be achieved, however, this connectivity must be both established and protected—something that will not occur until the Service has amended its recovery plan to include a metapopulation approach to grizzly-bear conservation and the state and federal governments have committed to stronger

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111 *Id.* at 29–32.

112 *Id.* at 28. Petitioners support laws and policies to be carried forward that prohibit hunting of grizzly bears. Further, the hostility the states have demonstrated toward predator species calls into question the reliability and durability of such commitments by the states.

113 *See, e.g.*, 16 U.S.C. § 1533(a)(1)(D) (requiring the Service to list any species that is endangered or threatened due to "the inadequacy of existing regulatory mechanisms").

114 1993 Recovery Plan at 16.

115 2022 Grizzly Bear Status Assessment at 174.

regulatory mechanisms that will reduce grizzly mortality rates and protect their habitat. We urge the agency to take this step now and put grizzly bears on the path to durable recovery.

Submitted December 11, 2024.

/s/ Mary Cochenour

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**Exhibit A**

# Proposed Revisions to the 1993 Grizzly Bear Recovery Plan[1]

## Vision Statement

The 1993 Grizzly Bear Recovery Plan neither envisioned nor addressed the modern-day threats facing grizzly bears in the Northern U.S. Rockies today. Dramatic increases in human population within grizzly bear habitat and regressive anti-carnivore policies recently enacted by the states have caused rising and unprecedented mortality risks to grizzly bears. At heart, this proposal seeks to address these previously unrecognized threats while also offering a plan to achieve lasting recovery for grizzly bears in the Northern U.S. Rockies. The proposed revisions call for two areas of change: 1.) that the recovery plan implement practices endorsed by the best available science and manage grizzly bears in the Northern U.S. Rockies as a single, unified metapopulation, and 2.) for the states and the federal agencies to commit to stronger regulatory mechanisms to protect against human-caused mortality and further destruction of grizzly bear habitat. These revisions will enhance resiliency and build a strong recovery system for grizzlies in the small 4% area of their historical range within the U.S. Rather than rush to delist the grizzly bear, this plan invites Tribal, State, and Federal agencies to come together to build a strong and lasting recovery framework for this vulnerable and iconic species.

## Contents



[1] See author note on final page.

## I. Summary

After almost 50 years of Endangered Species Act (ESA) protections, grizzly bears are still struggling to recover in the Northern U.S. Rockies. Fragmented recovery areas leading to isolated populations, increasing mortality risk from regressive anti-predator policies, conflicts in connectivity areas, loss of habitat, increasing human development causing human-bear conflicts, and inadequate mortality and habitat regulatory protections continue to impede recovery efforts. Many of these threats are new or have evolved since the implementation of the U.S. Fish and Wildlife Service's (FWS) 1993 Grizzly Bear Recovery Plan. The following report proposes updates to this decades-old Recovery Plan to incorporate new science and new management practices that will address these threats that have stalled grizzly bear recovery in the Northern U.S. Rockies. These updates to the 1993 Recovery Plan will lead this iconic species to an achievable and durable recovery.

The proposed revisions describe two major updates. First, they call for the FWS to abandon the 1993 recovery approach of managing Northern Rockies bears in five separate grizzly bear recovery islands in Montana, Wyoming, Idaho, and eastern Washington, and, instead, manage these grizzly bears as a single, interconnected metapopulation. Sound conservation science demonstrates the importance of establishing and maintaining connectivity between the Northern Continental Divide and the Greater Yellowstone ecosystems, and between the smaller recovery areas in the Selkirks, Cabinet/Yaak, and Bitterroot ecosystems. Coordinated management and connectivity of all grizzly bear habitats within the metapopulation area in the Northern U.S. Rockies will foster genetic and demographic connectivity, enhance genetic diversity, and increase resiliency for grizzly bears. By focusing on improving the key recovery factors of habitat, populations, and regulatory mechanisms, the proposed revisions set forth an actionable approach for durable and lasting recovery of the entire grizzly bear population in the Northern U.S. Rockies.

Second, the proposed revisions request federal and state governments to assure that strong regulatory mechanisms remain in place after recovery and delisting–a prerequisite to achieving lasting recovery and a legal requirement for removing ESA protections for grizzly bears. In recent times, regulatory protections for grizzly bears have been diminished by regressive state anti-carnivore policies that threaten grizzlies and impede their ability to move across the landscape. State and federal governments must make long-term commitments to policies and regulations that protect grizzly bears from unregulated human-caused mortality sources and degradation of their core and connective habitats on public lands. Delisting the grizzly bear from ESA protections, which Idaho, Montana, and Wyoming have advocated for, will depend on state and federal governments cooperation to assure long-term protections against mortality and habitat degradation through adequate regulatory mechanisms.

Until the FWS implements a metapopulation management approach that uses the best available science, until these separate recovery areas achieve natural connectivity between them, and until the state and federal governments work together to assure adequate regulatory protections, the grizzly bear in the Northern U.S. Rockies

remains in danger and cannot be considered for delisting from Endangered Species Act protections.

## II. Background on the Requirements for Recovery

Per the Endangered Species Act, for a species to be listed, it must meet one of the five criteria in Section 4(a)(1):

1. There is a present or threatened destruction, modification, or curtailment of its habitat or range.

2. The species is being overutilized for commercial, recreational, scientific, or educational purposes.

3. The species is declining due to disease or predation.

4. Existing regulatory mechanisms are inadequate.

5. There are other natural or manmade factors affecting its continued existence.[2]

Of the five listing factors in Section 4(a)(1), three raise issues particularly relevant to grizzly bears in the Northern U.S. Rockies:

1. Is grizzly **habitat available in sufficient amounts** and productive enough to support a recovered grizzly population? This should include both the habitat within the recovery areas or demographic monitoring areas as well as the connectivity habitats between each of the recovery areas in the Northern U.S. Rockies.

2. Are grizzly **population numbers sufficient** and **mortalities sufficiently controlled** so that the bears occupy all the available habitats to allow the populations to become and remain recovered and stable? This would include both the numbers of bears within the recovery areas (or demographic monitoring areas) as well as the number of bears using the connectivity habitats between each of the recovery areas in the Northern U.S. Rockies.

3. Are **adequate regulatory mechanisms** in place to ensure that necessary grizzly habitat remains available into the future and grizzly mortality is sufficiently controlled in the future so that mortality does not

[2] 16 U.S. Code § 1533

> result in population decline? These adequate regulatory mechanisms must be in place to limit human-caused mortalities from all sources both within the recovery areas (or demographic monitoring areas) as well as within the connectivity habitats between each of the recovery areas in the Northern U.S. Rockies.

The original Grizzly Bear Recovery Plan was published in 1982. This recovery plan was revised and updated in 1993. The preface to the 1993 Recovery Plan states:

> *Under authority of the Endangered Species Act (Act), The U.S. Fish and Wildlife Service listed the grizzly bear (Ursus arctos horribilis) as a threatened species in 1975. Since the arrival of Europeans in North America, grizzly bear populations have been eliminated from all but approximately 2 percent of their original range in the lower 48 States. The recovery of the grizzly bear is directed at establishing viable populations in the six to seven areas in parts of four to five states where the grizzly was known or believed to exist when it was listed in 1975. Recovery in other areas of the bear's historic range where adequate space and habitat exists is under consideration.*[3]

At the time of the original recovery plan (1982) and the revised recovery plan (1993), the recovery of grizzly bears was envisioned to occur within the six to seven recovery zones (hereafter called recovery areas) where grizzlies either were or were thought to be. At that time, little thought was given to the possibility of bears outside these recovery areas because the primary challenge was to simply to achieve recovery within these separate areas. The challenges to achieving recovery in the six to seven recovery areas were formidable so there was minimal consideration of connecting these recovery areas or to imagining grizzly bears in areas outside the recovery areas.

The current range and distribution of grizzly bears is the result of state, federal, Tribal, and public recovery efforts. When the grizzly was listed in 1975, there was no population census available, but the overall population number was likely about 400 bears in all areas with most bears being confined within the original recovery areas and few if any bears in between the recovery areas.

As of 2024, there are approximately 2,000 grizzly bears within and outside five different recovery areas in the states of Montana, Wyoming, Idaho, and Washington. As of 2024, a significant but unknown percentage of these bears live all or portions of their lives outside the recovery areas. There is currently a proposal to reintroduce grizzly bears into the North Cascades outside the contiguous Northern U.S. Rockies but contiguous with a small Canadian population in adjacent British Columbia. This North

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[3] Grizzly Bear Recovery Plan. 1993. p. ix.

Cascades recovery area and the proposed reintroduction effort are not addressed in this proposed recovery plan revision.

The remainder of this document will use the term "recovery areas" because there have been adjustments to the boundaries of some recovery areas managed for grizzly bears since 1993, as described in the Conservation Strategy documents for the Yellowstone and NCDE (see Figure 1 for an example for the Yellowstone recovery area), and the use of the term "recovery zone" is no longer applicable.

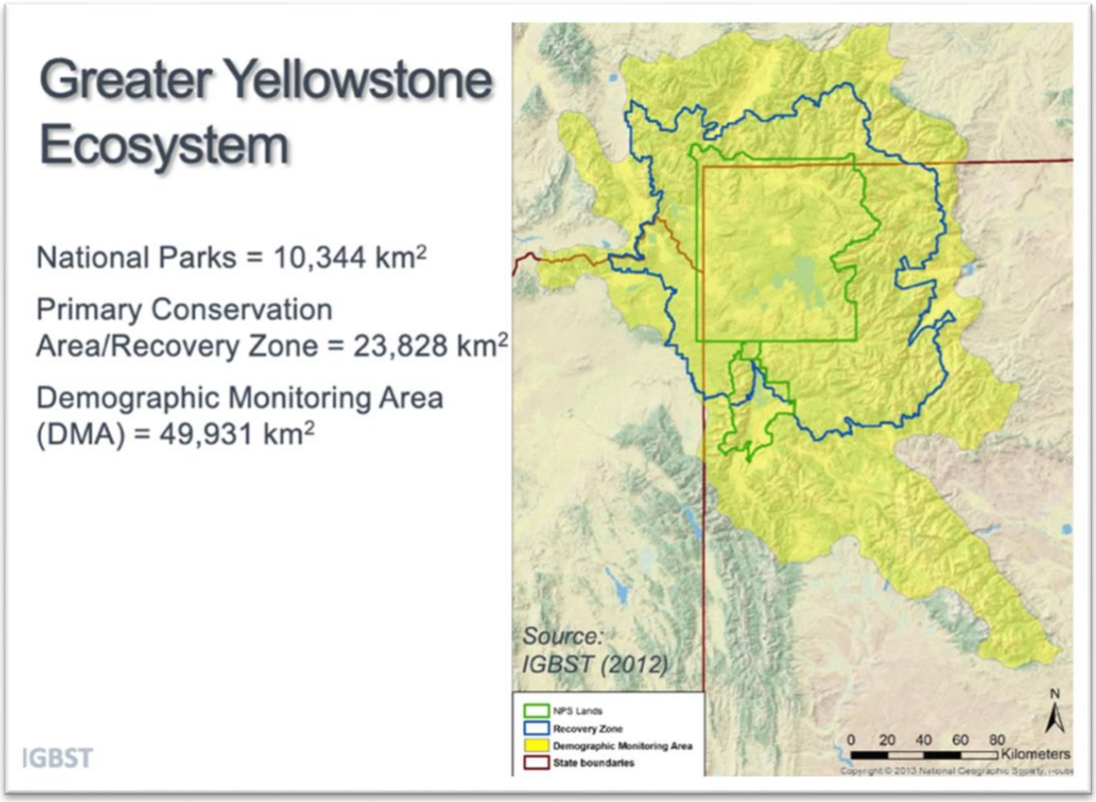


*Figure 1. The Greater Yellowstone Ecosystem showing the original recovery zone and the demographic monitoring area. (IGBST graphic)*

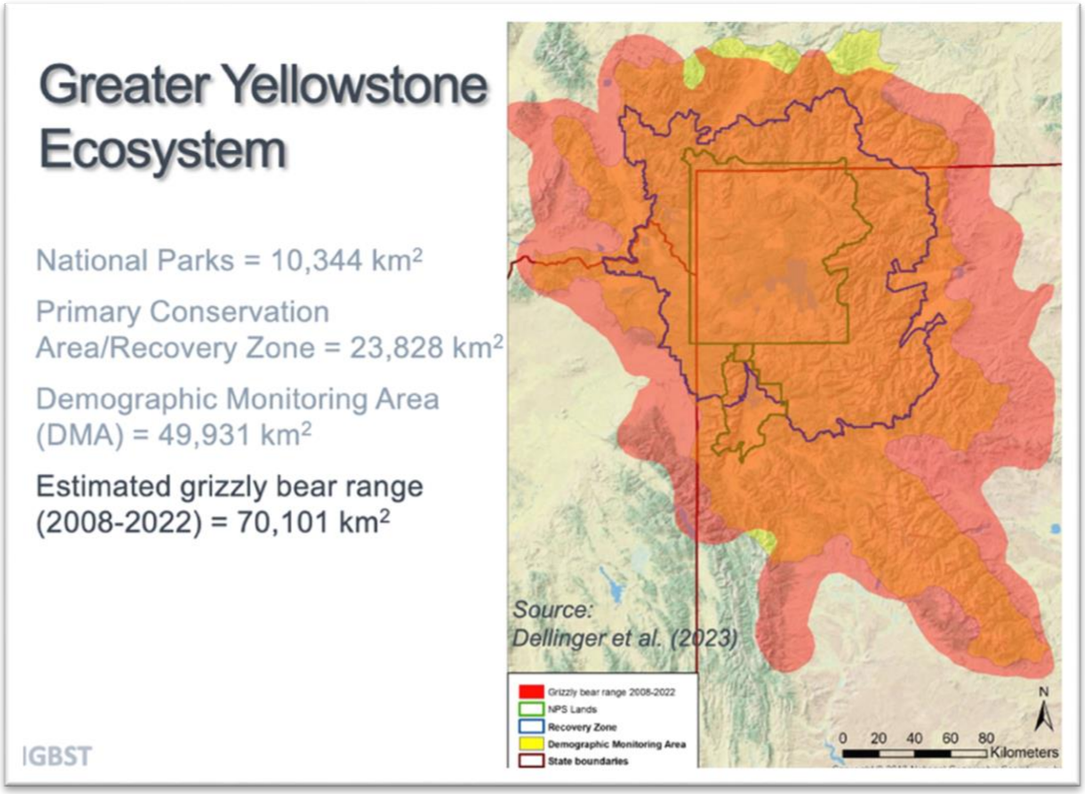


*Figure 2. Yellowstone recovery area showing current grizzly range. (IGBST graphic)*

## III. Perspectives on the Current Population Objectives for Grizzly Bear Recovery

The 1993 recovery plan describes recovery for each recovery area or ecosystem as a population that:

1. Can sustain the existing level of known and estimated unknown, unreported human-caused mortality that exists within the ecosystem, and

2. Is well distributed throughout the ecosystem.

Using sightings of females with cubs, the 1993 recovery plan states that the minimum calculated population in 1992 in the Yellowstone ecosystem was 236 bears[4] while the minimum calculated population in 1992 in the NCDE was 391 bears.[5] The 1993 recovery plan also requires that counts be based on unduplicated sightings of females with cubs within each recovery area and within 10 miles outside the recovery

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[4] Grizzly Bear Recovery Plan. 1993. p. 43

[5] Grizzly Bear Recovery Plan. 1993. p. 62

area boundaries. Insufficient monitoring data on females with cubs were available in the Cabinet/Yaak area and the Selkirk area to estimate minimum population size. Populations were estimated for these areas at 15-20 in the Cabinet/Yaak[6] and 26-36 in the Selkirks.[7]

The 1993 recovery plan adopts a compartmentalized approach that counts bears and quantifies recovery status separately within the boundaries of each individual recovery area. This approach judges the health and recovery status of individual recovery areas independent of the other areas, which does not reflect the best available science as applied to the northern Rockies grizzly population as it exists today. As grizzlies within the Northern U.S. Rockies recovery areas grow in numbers and distribution and bears begin to live both outside and inside the separate recovery areas, the compartmentalized approach becomes less practical and applicable for grizzly management and less appropriate as a foundation for directing and judging grizzly recovery status. To reflect current science and the status of the current grizzly population, we now suggest the application of a unified, comprehensive metapopulation[8] approach to grizzly bear recovery in the entire Northern U.S. Rockies.

## IV. The Need for a Comprehensive Metapopulation Approach to Grizzly Recovery in the Northern U.S. Rockies

The metapopulation concept is well established as both a demographic and genetic approach in applied species conservation.[9] In a naturally functioning metapopulation, geographically dispersed breeding subpopulations interact and allow for species-level recovery across a large landscape.

The naturally functioning metapopulation concept is particularly appropriate to the grizzly bear in the Northern U.S. Rockies because the historical relationship between grizzlies and humans resulted in gradual elimination of grizzlies from formerly contiguous habitats/populations and the creation of island populations of grizzlies in a sea of human activities (Figure 3). Managing the grizzly bears in the Northern U.S.

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[6] Grizzly Bear Recovery Plan. 1993. p. 84

[7] Grizzly Bear Recovery Plan. 1993. p. 102

[8] A metapopulation is defined as any assemblage of discrete local populations with migration among them. (Hanski, I and M. E Gilpin, Editors. 1997. Metapopulation Biology: Ecology, Genetics and Evolution. Academic Press. https://doi.org/10.1016/B978-0-12-323445-2.X5000-7)

[9] For a summary, see: Hanski, I, and D. Simberloff. 1997. The Metapopulation Approach, Its History, Conceptual Domain, and Application to Conservation. Pp. 5-26 in Metapopulation Biology: Ecology, Genetics and Evolution. https://doi.org/10.1016/B978-012323445-2/50003-1

Rockies to achieve and maintain a naturally functioning metapopulation is appropriate in that:

1. The region's bears are currently at the southern margin of the grizzly's distribution in North America due to dramatic human-caused population and range decline over the past 170 years.[10]

2. The remaining populations as described in the original recovery zones were relatively small compared to the overall range of the grizzly bear prior to the arrival of European settlers.

3. Prior to initiation of the grizzly bear recovery program, the remaining grizzly populations in the Northern U.S. Rockies were declining and close to extinction.

The metapopulation approach to the five grizzly recovery areas in the Northern U.S. Rockies is a comprehensive way to address the key issues of:

- Providing a unified approach to achieving grizzly recovery across the landscape by considering all five Northern U.S. Rockies populations as one metapopulation that must achieve and maintain natural connectivity.

- Providing enough habitat for a fully recovered population by combining all five ecosystems and the lands between them as one naturally functioning metapopulation.

- Developing a comprehensive and unified metapopulation management system for the habitat and numbers of bears necessary for full recovery in the Northern U.S. Rockies.

The definition of resiliency in the 2016 FWS Species Status Assessment Framework notes that:

> *Resiliency describes the ability of a species to withstand stochastic disturbance. Resiliency is positively related to population size and growth rate and may be influenced by connectivity among populations. Generally speaking, populations need abundant individuals within habitat*

[10] Mattson, D. J. and T. Merrill. 2002. Extirpations of grizzly bears in the contiguous United States, 1850-2000. Conservation Biology https://doi.org/10.1046/j.1523-1739.2002.00414.x

> *patches of adequate area and quality to maintain survival and reproduction in spite of disturbance.*[11]

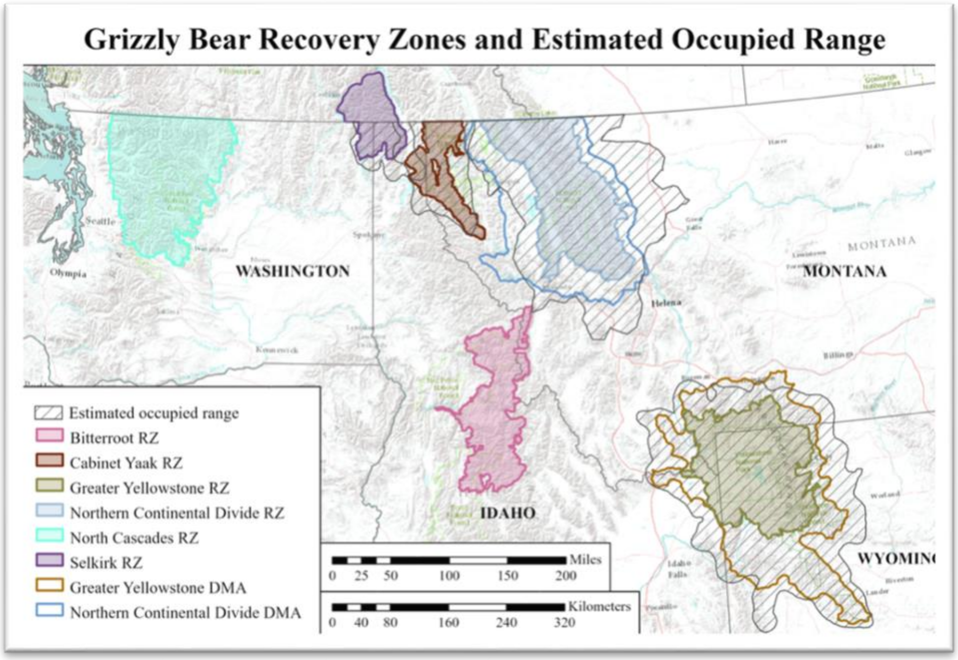


*Figure 3. The 6 grizzly bear recovery areas portrayed as separate entities on the landscape. The Yellowstone and NCDE areas are described as Demographic Monitoring Areas where the population is monitored.*

To adequately address the listing factors related to sufficient habitat and the number of bears needed to achieve and maintain recovery, and to increase the resiliency of grizzly bears south of Canada, it is necessary to revise the approach taken in the original recovery plan(s) of considering each of the grizzly recovery areas or ecosystems separately. This is necessary because the long-term survival of grizzly bears in the Northern U.S. Rockies will best be served by managing these bears as an interconnected, naturally functioning metapopulation in the Northern U.S. Rockies for genetic and demographic health (Figure 4). Managing the Northern U.S. Rockies grizzly bears as a single, unified metapopulation will greatly enhance population and habitat resiliency in the face of the rapid changes in habitats and grizzly foods resulting from climate change and the accelerating negative impacts of human activities that are ongoing in the same area of the Northern U.S. Rockies where grizzlies live.

The metapopulation should be legally described to include all five recovery areas in the Northern U.S. Rockies and the contiguous connecting habitats between them. This area should start at the Canadian boundary southward along at least the eastern boundary of the NCDE demographic monitoring area (Figure 7), then north and south

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[11] U.S. Fish and Wildlife Service, Species Status Assessment Framework (Aug. 2016), at 12, *available at* https://www.regulations.gov/document/FWS-R8-ES-2023-0132-0008

along the eastern boundary of NCDE Zone 2 (Figure 7), then directly southeast to connect to the northeast corner of the Yellowstone demographic monitoring area, then south to include at least the northern and eastern edge of the Yellowstone demographic monitoring area to its southernmost point, then westward along the southern edge of the Yellowstone demographic monitoring area, then northwest along the southern and western edges of the Yellowstone demographic monitoring area to the Idaho/Montana border, then west until the eastern and southern edges of the Bitterroot recovery area, then north and west to include the entire Bitterroot recovery area, then north and west to Newport, Washington, then north along the Pend Oreille River to the Canadian border.

The best available science requires consideration of habitat and population resiliency in grizzly bear recovery planning to achieve eventual grizzly recovery. Managing individual population units and assessing their status individually erodes resiliency because individual recovery units are less hardy and resistant than naturally connected recovery area populations. A naturally functioning metapopulation of interconnected grizzly bears in the Northern U.S. Rockies will be more demographically and genetically resilient to the ongoing impacts of climate change and increasing levels of human activity in this area. Managing for a functional metapopulation will require integrated demographic management of all five of the recovery areas in the Northern U.S. Rockies simultaneous with unified management of the connectivity habitats between them.

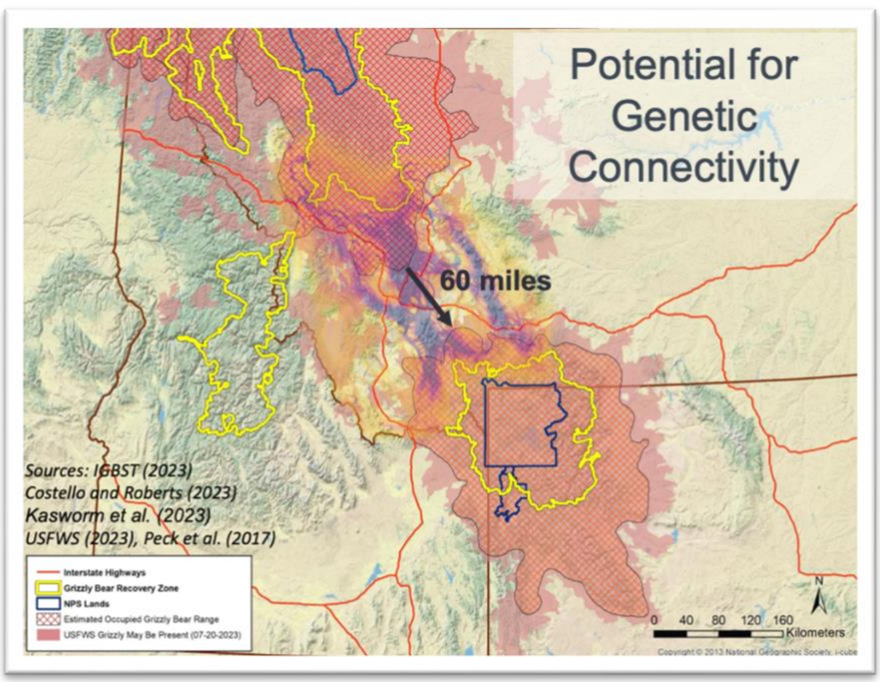


*Figure 4. The potential for natural genetic connectivity in the Northern U.S. Rockies metapopulation of grizzly bears. The recovery areas are in yellow, areas where grizzlies may be present as of 2023 in orange, and the distance between the NCDE and the Yellowstone area populations as of 2024. (IGBST graphic).*

The current lack of habitat resiliency in the separately managed Northern U.S. Rockies grizzly recovery areas presents a critical challenge to recovering the region's grizzly bears. The environment of the Northern U.S. Rockies is dynamic and presently characterized by continuously expanding residential housing development and loss of open space (Figures 5 and 6, using Montana as an example). Such habitat loss, habitat modification, and conversion of former wildlife habitat into human uses are the most significant contributors to species loss and declines worldwide.[12] As private land is developed into residential housing, there are fewer and fewer private lands available to support low-risk temporary grizzly movement or occasional grizzly use of low elevation areas that can be important spring range for bears.[13] This overall increase in human population on private lands, along with increased visitation and recreation on adjacent public lands, creates increased mortality risk and displacement for resident bears and makes movement between habitat units increasingly more difficult and risky. As recreation and visitation on public lands increases, sensitive wildlife species like bears are increasingly subject to displacement from preferred habitats and increased mortality risk due to increased encounters with humans.[14]

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[12] Dirzo, R. and P.H. Raven. 2023. Global state of biodiversity and loss. Annual Reviews of Environment and Resources. https://doi.org/10.1146/annurev.energy.28.050302.105532

[13] Schwartz, C. C., P. H. Gude, L. Landenburger, M. A. Haroldson, and S. Podruzny. 2012. Impacts of rural development on Yellowstone wildlife: linking grizzly bear *Ursus arctos* demographics with projected residential growth. Wildlife Biology 18: 246-257. https://doi.org/10.2981/11-060

[14] Zeller, K. A., M. A. Detmer, J. R. Squires, W. L. Rice, J. Wilder, D. DeLong, A. Egan, N. Pennington, C. A. Wang, J. Plucinski, and J. R. Barber, 2024. Experimental recreationist noise alters behavior and space use of wildlife. Current Biology. https://doi.org/10.1016/j.cub.2024.05.030. Coleman, T. H., C. C. Schwartz, K. A. Gunther, and S. Creel. 2013. Grizzly bear and human interaction in Yellowstone National Park: an evaluation of bear management areas. Journal of Wildlife Management 77: 1311-1320. https://doi.org/10.1002/jwmg.602. Kasworm W. F. and T. L. Manley. 1990. Road and trail influences on grizzly bears and black bears in northwest Montana. International Conference on Bear Research and Management 8: 79–84. Mace R. D. and J. S. Waller. 1996. Grizzly bear distribution and human conflicts in Jewel Basin Hiking Area, Swan Mountains, Montana. Wildlife Society Bulletin 24: 461–467.

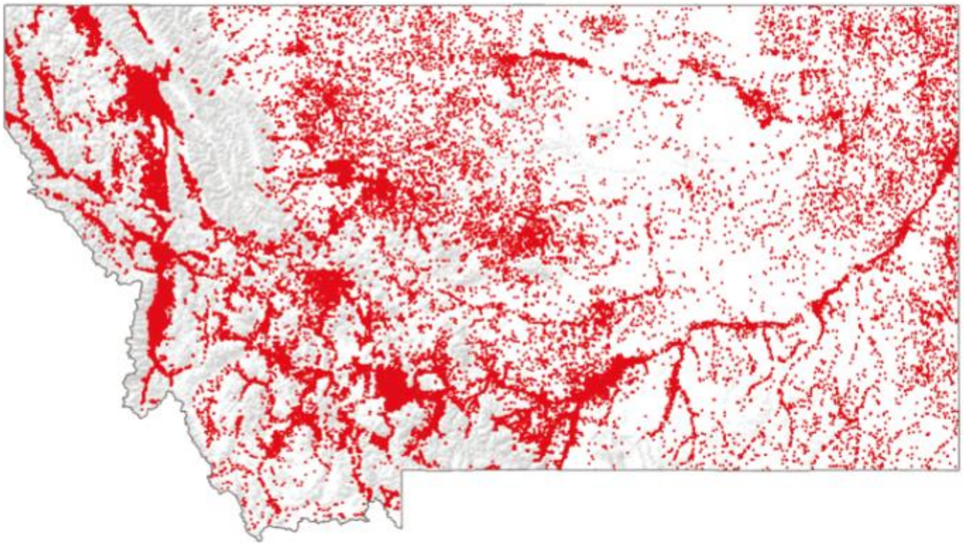

*Figure 5. Residential home development in Montana 2021. Each red dot represents a residential development site. This graphic illustrates the rapid conversion of rural private land into residential development. (Headwaters Economics graphic).*[15]

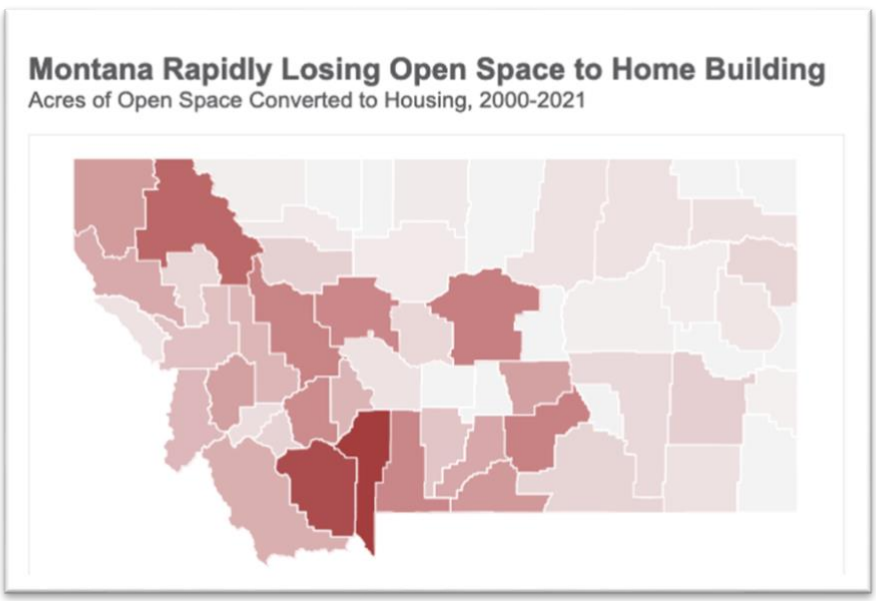


*Figure 6. Montana counties with the greatest loss of open space to home development representd by darker colors. The majority of high growth counties overlap with grizzly habitat or connectivity habitat between grizzly bear ecosystems. (Headwater Economics graphic.)*[15]

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[15] *Available at* https://headwaterseconomics.org/economic-development/montana-home-construction/

Increasing disturbance and displacement increases stress and forces bears and other wildlife to avoid places they want to be, resulting in increased stress and energetic demands as bears try to avoid increasing numbers of people in their habitats. Human disturbance from recreation and visitation in wildlife habitat is analogous to predation risk for wildlife, with similar impacts on the disturbed animals including increased stress and heart rate, increased vigilance, higher energetic costs due to avoidance of people, displacement from preferred feeding and resting habitats, changes in diurnal and nocturnal activity patterns to avoid people, reduced energy intake due to avoidance of preferred habitats used by recreating people, and reduced survival of young and even adults because of the cumulative negative impacts of continuously trying to avoid recreating people.[16] The primary way that recreation impacts grizzly bears is through temporal and spatial displacement, with associated increases in energetic costs as bears try and avoid humans, and declines in nutritional intake, as bears are displaced from preferred areas due to human presence.[17]

The remaining grizzly populations in the Northern U.S. Rockies will have increased probability of recovery and long-term survival if there are new and continued natural movements between all the recovery areas to minimize the impacts of low numbers and genetic isolation in certain recovery areas due to demographic isolation. Genetic rescue, usually due to male movements, and demographic rescue, usually by females moving between ecosystems, can only happen if there is continued management effort to establish and maintain movement and connectivity opportunities between the five Northern U.S. Rockies grizzly areas and thus improve population resiliency.[18] Beyond the genetic and demographic benefits of managing for interconnected grizzly populations in the Northern U.S. Rockies, there is the added benefit of allowing the bears to access diverse habitats and seasonal foods as climate change proceeds. These additional movement opportunities and habitat availabilities will become increasingly important as climate change affects the distribution and productivity of seasonal habitats and seasonal bear foods.

The realistic habitat opportunities for healthy populations of grizzly bears in the Northern U.S. Rockies are limited by multiple factors including the availability of contiguous patches of federal lands having appropriate levels of human disturbance,

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[16] Frid, A. and L. M. Dill. 2002. Human-caused disturbance stimuli as a form of predation risk. Conservation Ecology 6: 11. [online] URL: http://www.consecol.org/vol6/iss1/art11

[17] Fortin, J. K., K. D. Rode, G. V. Hilderbrand, J. Wilder, S. Farley, and C. Jorgensen. 2016. Impacts of Human Recreation on Brown Bears (Ursus arctos): A Review and New Management Tool. PLoS ONE 11(1) https://doi.org/10.1371/journal.pone.0141983

[18] Maroso, F., G. Padovani, V. Mora, F. Giannelli, E. Trucchi, and G. Bertorelle. 2023. Fitness consequences and ancestry loss in the Apennine brown bear after a simulated genetic rescue intervention. Conservation Biology https://doi.org/10.1111/cobi.14133

such as motorized travel routes and recreation intensity, that allow successful grizzly bear use and survival along with contiguous connectivity opportunities between existing patches of federal lands adjacent to existing populations (Figure 4). Habitat meeting these criteria is available within the boundary of the functional grizzly bear metapopulation of the Northern U.S. Rockies as described on pp. 8-9.

Past monitoring of movements between ecosystem units has documented population fragmentation, particularly among females who are less likely to move across connectivity areas than males.[19] Such fragmentation issues between ecosystems can be successfully addressed by efforts to reduce human/bear conflicts,[20] outreach to residents and communities about how to live with minimal conflicts with bears, and efforts to build community tolerance and understanding that most grizzly bears are not involved in human-bear conflicts.

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[19] Proctor, M. D., et al. 2011. Population fragmentation and inter-ecosystem movements of grizzly bears in western Canada and the northern United States. Wildlife Monographs https://doi.org/10.1002/wmon.6

[20] Proctor, M., W. F. Kasworm, K. M. Annis, A. G. MacHutchon, J. E. Teisberg, T. Radandt, and C. Servheen. 2018. Conservation of threatened Canada-USA trans-border grizzly bears linked to comprehensive conflict reduction. Human-Wildlife Interactions https://doi.org/10.26077/yjy6-0m57

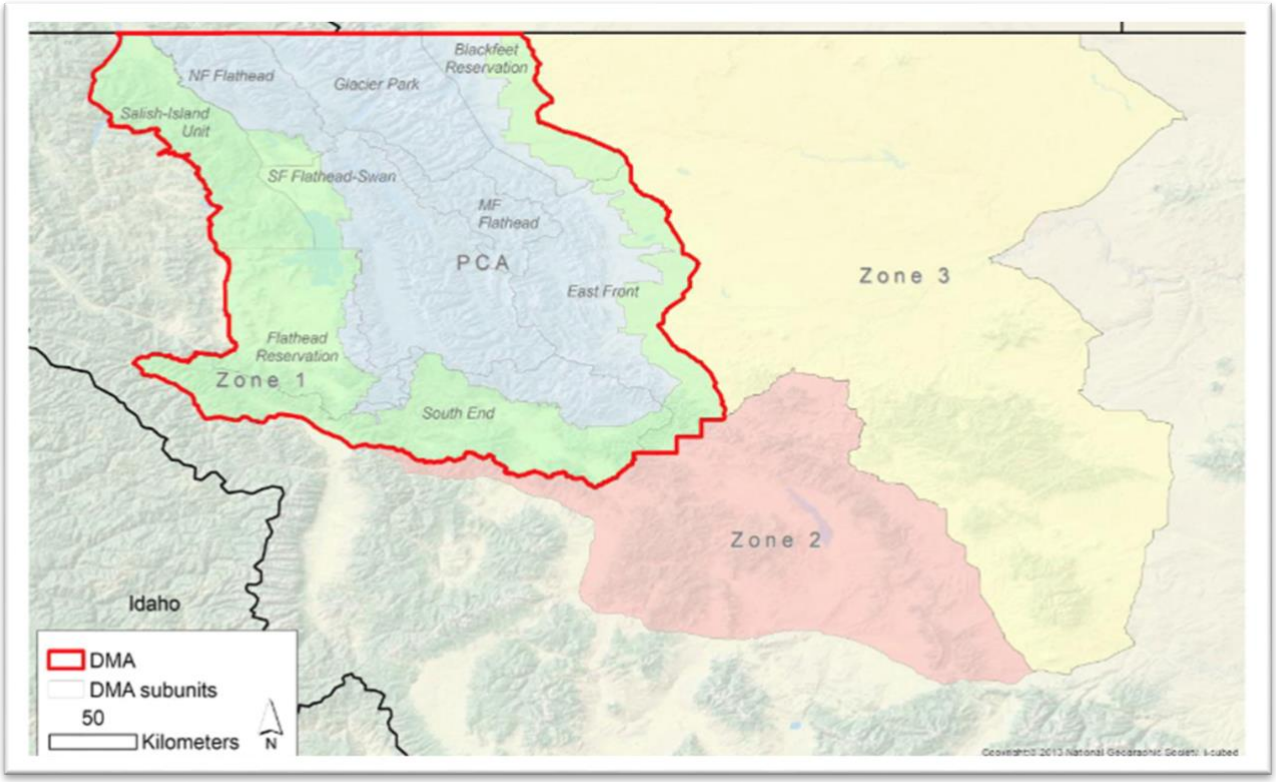


*Figure 7. Zones of the NCDE. The Demographic Monitoring Area (DMA; red line) where population monitoring is conducted consists of the Primary Conservation Area (PCA; blue) and zone 1 (green). DMA subunits DMA subunits (gray lines) are used for localized population analyses. Zone 2 (pink) is the area of potential genetic connectivity between the NCDE and the Greater Yellowstone Ecosystem. Zone 3 (yellow) is an area occupied by grizzly bears which is not likely to provide habitat linkage to other populations.*[21]

## V. Summary of the Proposed Grizzly Bear Recovery Plan Revision

The successful long-term recovery of grizzly bears should move beyond the individual recovery area approach of past recovery plans and focus on creating and fostering a resilient, naturally functioning metapopulation complex distributed across the Northern U.S. Rockies that is also contiguous with adjacent grizzly bear populations and habitats in Canada.[23] These suggested revisions to the grizzly bear recovery plan are

[21] Costello, C.M., L.L. Roberts, and M.A. Vinks. 2023. Northern Continental Divide Ecosystem Grizzly Summary Bear Monitoring Team Annual Report, 2022. Montana Fish, Wildlife & Parks, 490 N. Meridian Road, Kalispell, MT 59901. P. 3. https://fwp.mt.gov/binaries/content/assets/fwp/conservation/bears/a-summary-of-grizzly-bear-distribution-in-montana-2022_20230815.pdf

not a criticism of the 1993 recovery plan and recovery efforts since then, but instead represent the evolution of conservation knowledge and practice in the 30+ years since the 1993 recovery plan. These suggestions will allow the application of the best available science to the conservation of the grizzly bear and its habitat to achieve real and lasting recovery for the grizzlies in their important stronghold in the Northern U.S. Rockies.

A metapopulation approach for the Northern U.S. Rockies in a revised grizzly bear recovery plan requires simultaneous application of management and monitoring systems as follows:

- A **comprehensive, coordinated approach to managing the entire metapopulation area** for the health of the entire grizzly population within it, rather than separate and discrete efforts devoted to each individual recovery area.

- Establishing **occupancy goals for the connectivity areas** between each of the five ecosystems within the metapopulation that emphasize that grizzly presence is needed but at lower densities than within each of the ecosystem boundaries.

- **Monitoring the occupancy goals and connectivity** between the ecosystems within the metapopulation area using techniques like camera traps, DNA hair sampling, credible sightings, and radio collaring.

- Continuing **ongoing population monitoring systems for each recovery area** and reporting these monitoring data for each recovery area to allow management and monitoring efforts tailored to each recovery area. In addition, beginning a program to **report the population data for the entire metapopulation area as one population**. Adopting the metapopulation approach will increase resilience and the genetic and demographic health of the grizzly population throughout the entire metapopulation area.

- **Monitoring genetic indicators of connectivity** by genetic sampling of each bear captured in the metapopulation area in research or management trapping and for any bears that die in each recovery area and in all connectivity areas. These genetic data will allow confirmation of connectivity by documenting the distribution of bears from genetically identifiable population areas and the eventual interbreeding of bears when it occurs from two different population units.

- **Monitoring and reporting all mortality locations and causes** within the entire metapopulation area.

- **Establishing mortality limits within each recovery area** to maintain the population stability of the recovery areas, such as the GYE and the NCDE, where population objectives have been met.

- **Establishing population objectives** for eventual increasing populations in the recovery areas where population objectives are not yet met, including the Cabinet/Yaak, Selkirks, and the Bitterroot recovery areas.

- **Removing discretionary causes of mortality resulting from management of other species** that also cause grizzly deaths throughout the entire metapopulation area, including in all connectivity areas and within recovery areas. This will enhance and facilitate movement and occupancy in connectivity areas. This will also improve the genetic and demographic health of the entire metapopulation. Such discretionary mortality causes result from activities that include, but are not limited to, black bear hound hunting, wolf trapping and neck snaring with or without bait other than between January 1 and February 15, when most grizzly bears are in dens, and night shooting of wolves over bait other than between January 1 and February 15.

- **Management options** in the Northern U.S. Rockies currently exist under a specific 4(d) rule. Additional management options, if proposed via a revised 4(d) rule, could only be permitted if they would not risk population decline within the metapopulation, and if they would be designed to not threaten connectivity between ecosystems. There may be removals of chronic conflict bears in connectivity areas as necessary, but non-conflict bears in connectivity areas would not be removed. Management changes that increase grizzly bear mortality to non-conflict bears would not occur within the metapopulation area until full recovery of the entire metapopulation is achieved and would be designed to assure no population decline or distribution reduction within the metapopulation area.

- **Emphasizing conflict reduction efforts on both public and private lands**—not just within the recovery areas but also in all the primary connectivity areas using techniques like outreach and assistance to private landowners with respect to: garbage handling and disposal, carcass pickups to remove dead livestock from private lands, range riders to assist landowners with grizzly conflict reduction, use of livestock guarding dogs where appropriate, and assistance in electric fencing of attractant sites on private lands.

- **Continued management of bears that get into human-bear conflicts, both inside the recovery area boundaries but also in the connectivity areas and outside the metapopulation boundary.** Fundamental to successful grizzly bear management is the management of human-bear conflicts. This involves both proactive efforts to reduce conflicts through a wide range of actions before they occur but also the management of bears that do get into conflicts. Public acceptance of grizzly bears is built on public understanding that grizzly bears need to be managed and not just protected. Grizzly bears will sometimes get into conflicts with humans and livestock no matter how much effort goes into conflict reduction. Most bears do not get into such conflicts but when they do occur, there needs to be consistent and organized agency response to address these conflicts. Since the grizzly recovery program started in 1981, State, Tribal and Federal agency responses to human-bear conflicts have been directed and proscribed by the Interagency Grizzly Bear Guidelines.[22] The public needs to be assured that management of grizzly bears in conflicts will continue seamlessly inside and outside the metapopulation area during the continued efforts to achieve recovery and after recovery has been achieved. This approach will mean that efforts to reduce human-bear conflicts and agency conflict bear management will remain in place unchanged as the metapopulation approach is adopted, as recovery is completed, and after recovery is achieved. Bears in conflicts or bears that need to be removed for public safety reasons will continue to be aversely conditioned, relocated, and/or removed by qualified State, Federal, and Tribal bear management personnel as per the Guidelines and the Grizzly Bear Special Rule 50 CFR 17.40. While it is expected that human-bear conflicts will be reduced inside and outside the metapopulation area with increased application of effective conflict reduction programs, there will always be some bears that get into such conflicts. The management of these conflict bears will seamlessly continue with the adoption of this metapopulation approach and after recovery is achieved and management under the ESA transitions to management primarily outside the purview of the ESA. The mortalities of all conflict bears will be monitored, publicly reported, and be counted against annual mortality limits inside each recovery area and within each connectivity area.

The increasing levels of human development on private lands combined with associated increases in recreation and visitation intensity on public lands in grizzly habitat in the Northern U.S. Rockies continues to pressure grizzly populations, to increase human/bear conflicts with resulting increases in grizzly mortalities, and to reduce the probability of grizzlies moving successfully between population units. The current levels of human development and recreation intensity will continue to increase as more people move to the Northern U.S. Rockies. This increase in human occupancy with its associated negative influences will reduce the resiliency of grizzly bear populations and will further isolate and jeopardize the individual population units unless new comprehensive management efforts to facilitate connectivity across the landscape are adopted. The metapopulation approach to the five grizzly recovery areas in the Northern U.S. Rockies is the most effective way to address these issues and

[22] https://igbconline.org/document/1986-grizzly-bear-guidelines/

achieve and maintain genuine grizzly recovery. Application of the metapopulation approach to grizzly bears in the Northern U.S. Rockies will help address the important issue of resiliency that FWS requires for the evaluation of the status of listed species.[23] The management of the five grizzly recovery areas in the Northern U.S. Rockies as a metapopulation will greatly enhance their ability to recover and remain healthy and recovered in the future as human development and impacts increase and climate change impacts proceed.

## VI. Perspectives on the Habitat Necessary to Support a Recovered Population

Increasing levels of human development on private lands in grizzly habitat in the Northern U.S. Rockies, combined with associated increases in recreation and visitation intensity on public lands, continues to pressure grizzly populations, increasing human/bear conflicts with resulting increases in grizzly mortalities, and reducing the probability of grizzlies moving successfully between recovery areas. The level of human development and recreation intensity will continue to increase as more people move to private lands in the Northern U.S. Rockies. This increase in human occupancy, with its associated negative influences, highlights the importance of public land management as a buffer against the increasing impacts to and degradation of private lands from development. It also highlights the importance of conservation easements on private lands. Conservation easements are a win/win opportunity that can be a powerful tool to place needed limits on private land development while allowing such lands to remain in private ownership, economically benefiting landowners.

With respect to public lands, GYE and NCDE managers have developed separate conservation strategies for both recovery areas that will determine the management direction within these ecosystems. The development and agreement to implement these conservation strategies are directed by task 426 in the 1993 Recovery Plan. These documents detail the habitat and population monitoring systems inside these recovery areas that will be in place after the removal of the grizzly from the threatened species list. In general, the GYE and NCDE management strategies adequately describe habitat and population monitoring structures and describe the habitat management systems for federal and Tribal lands that will be in place after recovery and removal of the grizzly from the threatened species list. Since the conservation strategies do not legally direct land management decisions for federal lands, the USFS and NPS have amended forest plans and park management plans with the specifics of how these public lands in the recovery areas will be managed inside each recovery area after the grizzly is recovered and delisted.

As grizzly bear recovery has progressed, grizzlies have begun to occupy the areas between the recovery areas, and some have moved from one recovery area into

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[23] p. 12 in https://www.regulations.gov/document/FWS-R8-ES-2023-0132-0008

another.[24] What is lacking in the GYE and NCDE conservation strategies is any direction for habitat management in the connecting areas between the ecosystems that grizzlies have begun to occupy. An even more important issue missing from the ecosystem-specific GYE and NCDE conservation strategies and in the existing recovery plan is any consideration of or direction for mortality management in the intervening connectivity habitat between the five recovery areas in the Northern U.S. Rockies. If grizzlies are to ever successfully and durably connect the five recovery areas, there must be specific habitat and mortality management systems developed and in place for all the connectivity areas. This highlights the importance of transitioning from an ecosystem and recovery zone approach to a landscape-scale, unified metapopulation approach to grizzly bear recovery and management in the Northern U.S. Rockies. It also highlights the importance of the careful management of public lands and assistance to private landowners on ways to reduce human-bear conflicts within the metapopulation boundary.

## VII. Addressing the population and distribution goals for achieving recovery in the Northern U.S. Rockies metapopulation

The research and monitoring teams in the Yellowstone Ecosystem, the NCDE, the Cabinet/Yaak, and the Selkirks have developed population and vital rate monitoring systems and annually reported in detail these monitoring results (Table 1). These monitoring systems and data are the basis of our understanding of grizzly bear populations in these recovery areas. The population target or goal in each recovery area should reflect the grizzly carrying capacity of each area or how many bears are expected to be present for the area to achieve recovery. As these monitoring systems have proceeded in the Yellowstone and the NCDE, these populations have grown. This growth has begun to slow and stabilize as these populations reach carrying capacity,[25] demonstrated by reduced cub survival, yearling survival, and lower rates of reproductive transition from no offspring to cubs as population density increases.[26] The population target for each ecosystem shown in Table 1 is reasonable considering what is known about the likely number of bears that can be supported in various recovery areas in the Northern U.S. Rockies. The total number of grizzly bears in the Northern U.S. Rockies metapopulation area will be more than the approximately 2,200 bears within the recovery areas shown in Table 1 because a fully recovered Northern U.S. Rockies metapopulation will require grizzly bears to also live in the connectivity areas between the five recovery areas. Residence of grizzlies in the connecting areas between the

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[24] Kasworm, W. 2021. Grizzly bear recovery in the Bitterroot Mountains of Central Idaho and Western Montana, USA. International Bear News 30: 2.

[25] IGBST. 2024. 2023 research and monitoring update. Report to IGBC. https://igbconline.org/committees/yellowstone/

[26] Van Manen, F. T., M. A. Haroldson, D. D. Bjornlie, M. R. Ebinger, D. J. Thompson, C. M. Costello, G. C. White. 2015. Density dependence, whitebark pine, and vital rates of grizzly bears. Journal of Wildlife Management. https://doi.org/10.1002/jwmg.1005

existing recovery areas inside the boundary of the Northern U.S. Rockies metapopulation area will assure continued connectivity between the recovery areas with the benefits of demographic and genetic resilience that will result from continued connectivity.

***Table 1. Targets for each of the Northern U.S. Rockies ecosystems.***
*(Data from IGBST, Costello et al., Boyce and Waller, and Kasworm et al.[27])*

| Ecosystem | Population target | Females w/cubs occupancy target over last 6 years | Survival/mortality goals |
|---|---|---|---|
| **Yellowstone** | 965 total in the DMA; 95% credible interval of 819-1121. | Currently 97% of DMA occupied. | Mortality less than: 9% for independent females; 20% for independent males; 9% for independent young. |
| **NCDE** | ≥ 90% est. probability that population within DMA remains above 800 bears. This is based on adult female survival being ≥ 92% from known-fate monitoring data. | 21 of 23 BMUs in PCA<br>6 of 7 BMUs in Zone 1. | ≥ 92% survival for adult females. |
| **Cabinet/Yaak** | 6 females with cubs/yr. as 6-yr avg = 90-100 total. | 18 of 22 BMUs | ≤ 4% total mortality and less than 30% of the total number of mortalities shall be females. |
| **Selkirk** | 6 females with cubs/yr. as 6-yr avg = 90-100 total. | 7 of 10 BMUs | ≤ 4% total mortality and less than 30% of the total number of mortalities shall be females. |
| **Bitterroot** | Greater than 200 with connection to other populations. | Not set | Not set |

[27] IGBST. 2023, Yellowstone grizzly bear investigations. pp. 1-2. https://igbconline.org/document/yellowstone-grizzly-bear-investigations-2022-igbst-annual-report/ Costello, C.M., L.L. Roberts, and M.A. Vinks. 2023. Northern Continental Divide Ecosystem Grizzly Bear. Monitoring Team Annual Report, 2022. Montana Fish, Wildlife & Parks, 490 N. Meridian Road, Kalispell, MT 59901. Pp. 8-15. https://fwp.mt.gov/binaries/content/assets/fwp/conservation/bears/ncde_grizzly_population_trend_report_2022_20230828.pdf Kasworm, W., T. Radandt, J. Teisberg, and M. Proctor. 2023. Selkirk and Cabinet-Yaak grizzly bear monitoring. USFWS https://igbconline.org/document/240508-kasworm-selkirk-cabinet-yaak-monitoring-program/ Boyce, M.S. and J. S. Waller. 2003. Grizzly bears for the Bitterroot: predicting potential abundance and distribution. Wildlife Society Bulletin https://www.jstor.org/stable/3784586

For full recovery to occur throughout the Northern U.S. Rockies, monitoring results should document the simultaneous achievement of the population targets, the occupancy goal for adult females, and mortality limits and/or adult female survival goals as per Table. 1. In addition, there should be occupancy goals established for each connectivity area within the metapopulation boundary between each of the five recovery areas. These occupancy goals should document annual low density grizzly presence in each connectivity area to assure continued connectivity opportunities.

As discussed previously in the requirements for a successful metapopulation approach, monitoring for connectivity area occupancy between recovery areas within the metapopulation area should use a combination of techniques like camera traps, DNA hair sampling, credible reports, and radio collaring. These monitoring results should be reported annually by the various state and federal agencies monitoring grizzly bears in the five recovery areas. In addition to monitoring of grizzly presence in connectivity areas, there should be monitoring and annual reporting of human-bear conflicts in each connectivity area and all grizzly mortalities by cause and location. These conflict and mortality data for connectivity areas will allow focused efforts to increase outreach and assistance to residents and livestock producers in each connectivity area to improve coexistence with bears that may move through these areas. There are several non-lethal programs available that can be applied in connectivity areas to assist residents and landowners in their efforts to reduce human-bear conflicts. These programs are available from NGOs, state fish and game departments, NRCS, and Wildlife Services, and the focus areas and application effort for them can be informed by the conflict and grizzly mortality results from monitoring in connectivity areas.

***Table 2. Suggested monitoring objectives for connectivity zones within the metapopulation area. Specific monitoring objectives can be refined as metapopulation management efforts mature.***

| **Connectivity area** | **Documented bears present using DNA sampling, radio collaring, camera traps** | **Survival/mortality goals** |
|---|---|---|
| **Yellowstone – NCDE - Bitterroot** | $\geq$ 10 per year | Fewer than 5 human-bear conflicts (with different bears) per year due to garbage, livestock or property damage. |
| **NCDE – Cabinet/Yaak – Selkirks - Bitterroot** | $\geq$ 10 per year | Fewer than 5 human-bear conflicts (with different bears) per year due to garbage, livestock or property damage. |

## VIII. Addressing the adequate regulatory mechanism factor: Implementing management actions to reduce grizzly mortalities and assure that habitats on public lands will remain available for grizzly bears in the future

As noted above, the third important factor in Section 4(a)(1) specific to grizzly bear recovery is as follows:

> *Are **adequate regulatory mechanisms** in place to assure that necessary grizzly habitat remains available into the future and are there adequate regulatory mechanisms in place to control grizzly mortality to sustainable levels in the future so that mortality does not result in population decline. Adequate regulatory mechanisms must be in place to limit human-caused mortalities from all sources both within the recovery areas or demographic monitoring areas as well as bears using the connectivity habitats between each of the recovery areas in the Northern U.S. Rockies.*

In addition to meeting population objectives, a mandatory requirement of the Endangered Species Act for a species to be recovered and delisted is that adequate mortality management mechanisms and habitat management mechanisms be in place to assure that grizzlies remain healthy and recovered after they are removed from ESA protections.

The 1993 recovery plan contains a task (task 53) to create conservation strategies for each recovery area to "ensure that proper habitat and population management will remain in place to ensure that the species will remain recovered without protection under the ESA".[28]

The GYE and NCDE conservation strategies detail requirements for population and habitat management inside the GYE and NCDE recovery areas on public lands, including limits on road density, limits on new recreational site development or expansion of existing sites that might displace grizzlies or increase mortality risk, and requiring food storage and sanitation standards in front country and backcountry areas. Yellowstone National Park also has certain backcountry areas either temporarily or permanently closed to human entry to reduce human-bear interactions in the backcountry that could lead to habituation of bears to people, reduce human caused displacement of bears from important use areas, and reduce the probability of bear-caused human injuries.[29] Yellowstone and Glacier National Parks both require a permit

[28] Grizzly Bear Recovery Plan. 1993. p. 57.

[29] Gunther, K. A. 1994. Bear Management in Yellowstone National Park, 1960-93. International Conference of Bear Research and Management 9:549–560.

for backcountry overnight camping, and they specify the sites that can be used for such camping. Unlike National Parks, there are no permits required for backcountry camping on National Forest lands in grizzly habitat and no specified sites for such camping.

As envisioned in the 1993 recovery plan, the adequate regulatory mechanisms in the conservation strategies apply to the recovery areas described in the recovery plan. At the time of the 1993 recovery plan, there was no direction to apply regulatory mechanisms outside the recovery areas. Transitioning from an ecosystem and recovery area approach to a comprehensive metapopulation approach to grizzly bear recovery and management in the Northern U.S. Rockies requires that some level of habitat and population regulatory mechanisms now apply to the entire metapopulation. The purpose of adequate regulatory mechanisms for the metapopulation is to ensure that bears both inside and outside the recovery areas or demographic monitoring areas are sustainably managed so that bears can move between the recovery areas and that populations throughout the metapopulation in the Northern U.S. Rockies remain healthy as human impacts increase.

Population regulatory mechanisms are essentially grizzly bear mortality management stipulations and regulations so that all forms of direct and indirect mortality are known and monitored and able to be managed within prescribed limits. Habitat regulatory mechanisms are habitat management stipulations that will allow grizzlies to occupy and meet all their life requirements and seasonal needs like spring, summer, fall and denning habitat within the recovery areas and on the public lands within the connecting habitats between the recovery areas.

The primary threat to achieving successful recovery and delisting of grizzly bears (and maintaining recovered/delisted status for grey wolves) is the lack of adequate regulatory mechanisms necessary to control mortality due to humans. The greatest threats today to grizzly bear recovery and to eventually achieving grizzly bear delisting are the state legislatures and governors who are passing legislation that implements harmful anti-predator policies that are not informed by science and the lack of effective management of private land development adjacent to grizzly bear habitat on public lands and the negative impacts of such development. These polices will result in more dead grizzly bears and many incidental captures and deaths of non-target carnivore species and more human-bear conflicts Anti-carnivores laws and policies directly threaten the ability of state fish and game agencies to limit grizzly mortality to sustainable levels.

Adequate regulatory mechanisms must assure that grizzly bears in the Northern U.S. Rockies are sustainably managed so that populations throughout the Northern U.S. Rockies metapopulation remain stable and healthy as human populations and impacts on habitats and populations continue to increase.

**The following state regulatory mechanisms are needed as a prerequisite to delisting to ensure that the metapopulation remains healthy and functional:**

1. **Permanently eliminate all wolf trapping and neck snaring with or without bait in all areas in the Northern U.S. Rockies metapopulation area except between January 1 to February 15 when most grizzlies are in dens.** Since leg-hold traps and neck snares are indiscriminate, many non-target wildlife species—particularly carnivores such as bears, wolverines, fishers, mountain lions, lynx and bobcats—will also be captured in traps and neck snares. Such trapping and snaring will result in the incidental capture, injury,[30] and/or mortality of grizzly bears. These activities will result in unmanaged mortality because:

    a. Grizzly bears can be caught and can break off the trap or snare and take the traps or snares with them. A missing trap or snare provides nothing for a trapper to report so such incidental captures cannot be known, reported or managed. Such captures can result in severe injuries or death to those bears captured by these devices as they will carry the trap or snare for long periods until the injured foot or claws come off or the animal dies from its injuries.

    b. There is likely a low level of self-reporting of such non-target captures by trappers because if the public was aware of the high numbers of non-target animals captured or injured in traps and snares, there would be pressure for limitations on such trapping. This is a disincentive to self-reporting such incidental captures and since such traps and snares are set in remote sites only known to individual trappers, the likelihood of public knowledge of these incidental captures is low. Non-target captures of species listed under the ESA, such as grizzly bears and lynx, are subject to federal prosecution and this is another disincentive to reporting such captures.

2. **Permanently eliminate all shooting of wolves and other carnivores at night using bait, artificial lights, or night vision scopes in all areas in the Northern U.S. Rockies metapopulation area except between January 1 to February 15, when most grizzlies are in dens. Within any of the five recovery areas, no wolf night shooting over bait should be allowed to occur at any time.** Allowing shooting of wolves over bait at night using artificial lights or night vision scopes risks grizzly bear deaths as difficulty in identifying species at night is common, especially at a distance. Both grizzly and black

[30] Lamb, C., L. Smit, B. McLellan, L. M. Vander Vennen and M. Proctor. 2022. Considerations for furbearer trapping regulations to prevent grizzly bear toe amputation and injury. Wildlife Society Bulletin https://doi.org/10.1002/wsb.1343

bears will be attracted to baits set for such shooting and could be shot and killed or injured at night at these sites.

There is likely a low level of self-reporting of any grizzlies shot over bait at night because if the public was aware of grizzlies being shot at night there would be pressure for limitations on night shooting. Non-target shooting deaths of species listed under the ESA, such a grizzly bears and lynx, are subject to federal prosecution and this is another disincentive to reporting such night shooting deaths while the grizzly remains a listed species.

3. **Permanently eliminate all hound hunting of black bears in all portions of the Northern U.S. Rockies metapopulation area.** Hound hunting of black bears where grizzly bears are present will result in unmanageable grizzly bear deaths because:

   a. Grizzly bears in the metapopulation area will be at risk of death or injury anywhere hound hunting of black bears is allowed.

   b. Grizzly bears chased by hounds will not run from hounds but will usually stand and fight. Such fights will result in hounds being killed or injured by the agitated grizzly.

   c. Hound hunters encountering an agitated grizzly killing their dogs will likely want to try and protect the surviving dogs by killing the grizzly, which is illegal.

   d. Enraged grizzly bears interacting with hounds may attack hunters that are following the hounds, which may result in injury or death of these hunters, or may put the hunters in a situation when they may resort to killing the grizzly bear in self-defense.[31] Non-hound hunters such as hikers, non-hound hunting black bear hunters, and recreating individuals or families may encounter agitated and defensive grizzly bears that have been or are involved with pursuing hounds. This may result in injury or even death for these uninvolved and innocent people.

   e. Hounds may chase agitated grizzly bears onto private lands where these bears could injure or alarm landowners who have nothing to do with bear hunting.

[31] For an example see: https://www.outdoorlife.com/survival/grizzly-attacks-bear-hunter/

f. Grizzly deaths from hound hunting of black bears would be in addition to current sources of mortality. It will be impossible for state agencies to regulate such incidental mortalities and to maintain mortality levels to sustainable levels if hound hunting black bears is allowed where grizzly bears may be present.

g. There is likely a low level of self-reporting of any grizzlies killed or injured by hound hunters because such mortalities will be in remote areas only known to the hound hunters, and if the public was aware of such mortalities, there would be pressure to close such hound hunting. A further disincentive to self-reporting is that killing of grizzly bears to protect hounds is illegal while grizzlies are a listed species.

4. **Prohibit sport hunting of grizzly bears in the Northern U.S. Rockies metapopulation area until recovery is achieved.** Sport hunting of grizzly bears in connectivity areas will reduce the possibility of natural movements of bears between the recovery areas that is necessary for demographic and genetic rescue and for the resilience of the entire population. Sport hunting is not necessary to manage grizzly bears and such hunting in the places where grizzly movement between ecosystems is desired is counter to the objectives of a functional metapopulation.

5. **Enhance and expand efforts to reduce human-bear conflicts in all connectivity areas between the five recovery areas to reduce the possibility of human-bear conflicts and resulting mortalities, and to enhance public acceptance of grizzly bears in connectivity areas. These efforts to reduce human-bear conflicts should be permanent and ongoing.**

a. The acceptance of grizzly bears across the landscape is dependent upon support from local communities and residents with efforts to reduce human-bear conflict potential. Several NGO groups have worked with state and federal agencies to build funding support for and implement on-the-ground efforts to reduce human-bear conflict potential. These efforts have been implemented with local communities, livestock producers, and watershed groups to build community support for these efforts. Rural community and livestock producer acceptance of these programs has been widespread, and they have expressed appreciation for the assistance from these human-bear conflict reduction programs.

b. Conflict reduction efforts have included but are not limited to livestock carcass pickup programs, electric fencing of attractant sites, range riders to assist in locating the presence of bears and other carnivores, bear-resistant garbage containers distributed to communities and rural residents, bear-resistant garbage transfer stations, and livestock guarding dogs.

**6. Accurately and honestly describe the impact of sport hunting on grizzly bears. Sport hunting must not occur in connectivity areas between recovery areas.** If sport hunting took place such sport hunting would be a trophy hunt (broadly defined as the killing of animals for recreation with the purpose of collecting trophies such as horns, antlers, skulls, skins, tusks, or teeth for display[32]) to satisfy the interests of some people who wish to hunt grizzly bears. The states continue to mislead the public with false information about what sport hunting of grizzlies will accomplish, saying hunting will balance numbers of bears with their environment, minimize grizzly depredations against private property, and minimize grizzly attacks on humans. None of these things are true. According to the best available science:

1. Sport hunting is <u>not</u> necessary to balance grizzly bear numbers with their available habitat because grizzly bear populations regulate their own numbers by increased subadult mortality and reduced survival as populations reach carrying capacity

2. Sport hunting will <u>not</u> minimize depredations against private property within or adjacent to grizzly bear habitat.

3. Sport hunting will <u>not</u> minimize grizzly bear attacks on humans.

There is no evidence that a normally managed bear sport hunt would reduce human/bear conflicts. Peer-reviewed scientific literature confirms this.[33] Most grizzly bear attacks on people are due to close, surprise encounters between bears and people in backcountry areas or to close encounters between people and bears in human use areas because bears

[32] Sheikh, P. A. and L. Bermeja. 2019. International trophy hunting. Congressional Research Service, R45615. Washington D.C. 28 pp. https://crsreports.congress.gov/product/pdf/R/R45615

[33] Obbard, M. E., E. Howe, L. L. Wall, B. Allison, R. Black, P. Davis, L. Dix-Gibson, M. Gatt and M. N. Hall. 2014. Relationships among food availability, harvest, and human-bear conflict at landscape scales in Ontario, Canada. Ursus 25:98-110. https://doi.org/10.2192/URSUS-D-13-00018.1 Northrup, J. M., E. Howe, J. Inglis, E. Newton, M. E. Obbard, B. Pond, and D. Potter. 2023. Experimental test of the efficacy of hunting for controlling human-wildlife conflicts. Journal of Wildlife Management https://doi.org/10.1002/jwmg.22363

have become food conditioned to human-related foods like garbage.[34] Sport hunting will not reduce bear attacks on people.

The best way to reduce such human-bear encounters that sometime result in bear attacks is to: 1) increase messaging to alert people about the best ways to avoid surprise encounters in backcountry areas; and 2) increase outreach and assistance to help people reduce the availability of attractants that create human-bear conflicts in bear habitat.

Sport hunting is not necessary to effectively manage grizzly bears. Sport hunting of grizzly bears, should it be implemented outside the metapopulation area, must assure that populations do not decline in numbers or distribution within the metapopulation area by limiting sport hunting to sustainable mortality numbers that are based on quantifiable population data about grizzly bear vital rates from annual monitoring of reproduction, adult female survival, mortalities from all sources, and a credible estimate of unknown/unreported mortalities. Scientific regulation of sport hunts should be designed to limit the number, sex, age, and distribution of the grizzly bears taken to assure sustainable harvest levels and maintain the population at a stable number within established limits. Such hunts will have minimal impacts on the numbers and distribution of healthy grizzly bear populations if the harvest numbers are based on sound science and ongoing monitoring of vital rates.

7. **Regulatory mechanisms for each ecosystem must manage for stable populations in each of the demographic monitoring areas and/or recovery areas and in connectivity areas after recovery and delisting**. Upon recovery and as a prerequisite to delisting, state regulatory mechanisms for each of the five recovery areas and connectivity areas must detail monitoring programs and mortality management programs that will assure that the populations within these areas remain stable to increasing within acceptable credible intervals.

   This will require the annual monitoring and reporting of vital rates that will be used to set limits on human-caused mortalities to sustainable levels. There should also be detailed mortality reporting from all causes including an annual estimate of the number of unknown unreported mortalities. There must be state regulatory commitments to manage for stable populations post-delisting within the metapopulation area and inside each recovery area and in connectivity areas.

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[34] Gunther, K. A. 2022. Bear-caused human fatalities in Yellowstone National Park: Characteristics and trends. Human-Wildlife Interactions https://doi.org/10.26077/04ea-edae

8. **Assure that any state plans to kill bears by any means outside the metapopulation boundary will not result in decline of the populations inside the metapopulation boundary.** Many grizzlies naturally move back and forth across the recovery area boundaries and will move across the metapopulation boundaries. Any plans to remove bears outside the metapopulation boundaries will impact a certain percentage of the population inside the boundary. There must be careful and ongoing monitoring systems in place to monitor the survival and mortality levels of bears that live on the edges of the metapopulation area. This will require monitoring the survival of marked bears, particularly adult females, to assure that the trajectory of the metapopulation is not negatively impacted by mortalities outside the boundary. All mortalities outside the metapopulation area should be publicly reported annually by cause, location, age and sex.

9. **There must be reliable commitments by state and federal agencies that state and federal laws and policies that resulted in the recovery of the Northern U.S. Rockies metapopulation and met the requirements for delisting remain in place after delisting.** Mortality and habitat regulatory mechanisms are not temporary tools for state or federal agencies, governors, legislatures or congress to achieve recovery and a delisting decision, only to be eliminated or weakened after delisting. There must be reliable and credible state and federal agency assurances that adequate laws and policies to manage grizzly mortalities and habitats will remain in place after delisting. The example of how state legislators have implemented anti-wolf legislation that departs from science and biology and seeks to reduce wolf numbers and range is a cautionary tale about what could happen to grizzly bears if they were recovered and delisted without legally defensible commitments to continue science and fact-based management policies.

   This may require an enforceable agreement among the governors and land management officials of Wyoming, Montana, and Idaho that the mortality regulatory mechanisms and the federal land management habitat management mechanisms in the metapopulation area will remain in place and not be altered.[35] The long-term recovery and health of the grizzly bear population in the Northern U.S. Rockies metapopulation will be contingent on continued and reliable state and federal land management continuity and consistency that adheres to the details in this recovery plan revision.

**The following habitat regulatory mechanisms are needed to ensure that the metapopulation remains healthy and functional:**

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[35] This signature document would be synonymous with a conservation strategy-type document for the entire metapopulation area.

1. **Habitat management commitments by land management agencies must be assured post-delisting.** Careful management of public lands inside core areas must be actual commitments and not transient policies dependent on transient agency leadership. Some federal agency personnel have looked at habitat management commitments made by federal land management agencies in Yellowstone and NCDE Conservation Strategies as temporary commitments to achieve recovery and delisting and/or requirements that could be weakened or abandoned when grizzlies were delisted, but this is incorrect. This misinterpretation is most conspicuous in new land managers who have no background or understanding of the long-term reasons such land management commitments for grizzly bears were made.

   Continued careful management of the levels of recreational activity and recreational site developments such as campgrounds and trailheads, and resource extraction development such as forest road densities on public lands will be necessary for grizzly bears in the Northern U.S. Rockies to continue to remain recovered and healthy. The public lands within the metapopulation area are all necessary for the long-term survival of the grizzly bear population particularly because of ongoing development of private lands (see examples in Figures 5 and 6) that increasingly makes private lands unsuitable for grizzly occupancy and transient movements between ecosystems.[36] If managed properly with consideration of limits on additional recreation developments and levels where needed and resource extraction developments like forest roads, public lands can provide a buffer to the ongoing development of private lands and can provide habitat for grizzly bears where they can meet their needs and move between recovery areas to maintain functional connectivity for continued demographic and genetic health. A clear understanding of this fact and a commitment to this by public land managers is critical to the long-term survival of grizzly bears in the Northern U.S. Rockies metapopulation.

   Maintaining public land manager commitments to the essential management details in the conservation strategies will require updated efforts to communicate the habitat management commitments made by

[36] Smith, J.A., T. P. Duane, and C. P. Wilmers. 2019. Moving through the matrix: Promoting permeability for large carnivores in a human-dominated landscape. Landscape and Urban Planning. https://doi.org/10.1016/j.landurbplan.2018.11.003 Schwartz, C. C., P. H. Gude, L. Landenburger, M. A. Haroldson, and S. Podruzny. 2012. Impacts of rural development on Yellowstone wildlife: linking grizzly bear Ursus arctos demographics with projected residential growth. Wildlife Biology 18: 246-257. https://doi.org/10.2981/11-060

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agencies and the importance of these commitments to the long-term future of grizzly bears in revised and updated sections of these conservation strategies, at IGBC meetings, and at IGBC subcommittee meetings.

2. **Evaluate the need for additional management of recreational use and limitations on recreation site development to assure compatibility with the needs of wildlife on public lands.**
Recreation is increasingly seen as an important factor in the habitat use of animals in general[37] and bears in particular.[38] Increasing levels of recreation use of public lands[39] have the potential to displace animals from preferred habitats and increase stress and decrease nutrient intake eventually leading to reduced reproduction and survival. Current USFS recreation management in grizzly bear habitat is mainly concerned with backcountry sanitation requirements and garbage storage and sanitation in front country campgrounds, but there is little effort to manage use levels or to identify important bear use areas and implement special recreation management in these important wildlife use areas as NPS does in Yellowstone National Park.[40]

Increasing numbers of human users in grizzly bear habitat on National Forest lands, which make up most public lands occupied by grizzly bears in the Northern U.S. Rockies metapopulation area, requires that the USFS begin to evaluate and then implement systems to identify important grizzly bear use areas similar to what NPS has done in Yellowstone National Park and then implement a system to manage levels, timing, and distribution of human use of these important wildlife use areas. This will require the USFS to use their extensive science capability and vegetation

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[37] Larson, C. L., S. E. Reed, A. M. Merenlender, and K. R. Crooks. 2016. Effects of Recreation on Animals Revealed as Widespread through a Global Systematic Review. PLoS ONE 11(12) https://doi.org/10.1371/journal.pone.0167259

[38] Fortin, J. K., K. D. Rode, G. V. Hilderbrand, J. Wilder, S. Farley, C. Jorgensen. 2016. Impacts of Human Recreation on Brown Bears (Ursus arctos): A Review and New Management Tool. PLoS ONE 11(1) https://doi.org/10.1371/journal.pone.0141983

[39] Federal outdoor recreation trends: effects on economic opportunities. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 2016 https://doi.org/10.2737/PNW-GTR-945

[40] Gunther, K. A. 1994. Bear Management in Yellowstone National Park, 1960-93. International Conference of Bear Research and Management 9:549–560. Loggers, E. A., A. R. Litt, F. T. van Manan, M. A. Haroldson, and K. L. Gunther. 2023. Grizzly bear responses to restrictions on recreation in Yellowstone National Park. Journal of Wildlife Management. https://doi.org/10.1002/jwmg.22527

and habitat mapping skills combined with trail and road system maps and front country and backcountry use levels to develop maps of important seasonal grizzly bear use areas and implement recreation timing and use management to balance the needs of bears and other wildlife with the needs and interests of the public as Yellowstone National Park has done. Research in British Columbia[41] has demonstrated the importance of understanding the factors driving population dynamics to effectively manage grizzly bear habitat and, ultimately, better conserve grizzly bear populations. Such a recreation management system will balance increasing recreational use pressures on public lands with the survival needs of wildlife and sensitive species like grizzly bears. Such a system should also minimize the expansion and development of existing trailheads when such site expansion leads to increased recreation use in sensitive wildlife areas. An additional advantage of the management of recreation use levels is improvement in visitor experience as human recreation crowding of backcountry areas is reduced and harmful trail and campsite impacts are lessened.

3. **Improved evaluation and management of the impacts of the development of private lands adjacent to public land grizzly bear habitats.** Private land development creating human-dominated landscapes in grizzly bear range is continually resulting in increased human-bear conflicts due to the increased availability of human-related attractants for grizzly bears[42] and other wildlife like elk and mule deer. Such developments also have the potential to reduce wildlife movement opportunities, reduce population resiliency, and increase the lethality of these habitat areas to grizzly bears.[43] Private land developments also reduce the use of adjacent public lands by grizzly bears as recreation increases human presence in the adjacent public lands and bears are displaced.

Private land development decisions are usually made at the county level and many counties have limited resources and expertise to evaluate the wildlife impacts of land developments resulting in inadequate

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[41] Proctor, M.F., C. T. Lamb, J. Boulanger, A. G. MacHutchon, W. F. Kasworm, D. Paetkau, C. L. Lausen, E. C. Palm, M. S. Boyce, and C. Servheen. 2023. Berries and bullets: Influence of food and mortality risk on grizzly bears in British Columbia. Wildlife Monographs https://doi.org/10.1002/wmon.1078

[42] Lamb, C. T., G. Mowat, B. N. McLellan, S. E. Nielsen and S. Boutin. 2016. Forbidden fruit: human settlement and abundant fruit create an ecological trap for an apex omnivore. Journal of Animal Ecology https://doi.org/10.1111/1365-2656.12589

[43] Lamb, C. T., A. T. Ford, B. N. McLellan, and S. Boutin. 2020. The ecology of human-carnivore co-existence. Proceedings of the National Academy of Sciences. https://doi.org/10.1073/pnas.1922097117

development evaluations. The cumulative effects of multiple private land development decisions can compromise significant areas of adjacent public land grizzly bear habitats. Such problems are a challenge to address. One possible path to improve private land development decisions is to recognize this issue as a threat to grizzly bears and multiple other wildlife species and to bring together public and private partnerships to openly begin to build partnership solutions to assist counties in their land management evaluation and decision processes. Such partnerships could improve the evaluation of the impacts of private land development in grizzly range and assist county and other government entities as they evaluate developments and propose mitigation and management actions to reduce the detrimental impacts of such developments.

Author note: This proposed grizzly bear recovery plan revision was written by Christopher Servheen, Ph.D. who was the Grizzly Bear Recovery Coordinator for the U.S. Fish and Wildlife Service for 35 years until retiring in 2016. While in the position of Recovery Coordinator, he wrote the 1993 Grizzly Bear Recovery Plan and managed the grizzly bear recovery program in Montana, Wyoming, Idaho, and Washington. He is currently the co-chair of the North American Bears Expert Team for the Bear Specialist Group of IUCN.

This metapopulation approach to the management of grizzly bear recovery in the U.S. Northern Rocky Mountains has been endorsed by:

- Dale Becker, former Tribal Wildlife Program Manager, Confederated Salish and Kootenai Tribes
- Kate Kendall, former USGS lead grizzly bear scientist
- Sterling Miller, Ph.D., former Research Biologist, Alaska Fish and Game and former President of the International Association for Bear Research and Management
- Harvey Nyberg, former Regional Supervisor for Montana Fish, Wildlife and Parks
- Mike Phillips, Director, Turner Endangered Species Fund and Advisor to Turner Biodiversity Divisions
- Tom Puchlerz, former USFS Grizzly Bear Habitat Coordinator and Forest Supervisor of the Bridger-Teton and Tongass National Forests
- Chuck Schwartz, Ph.D., former Research Biologist, Alaska Fish and Game and USGS Leader of the Interagency Grizzly Bear Study Team
- Gary Wolfe, Ph.D., former Montana Fish and Wildlife Commissioner member and former CEO of the Rocky Mountain Elk Foundation and Vital Ground Foundation

# Exhibit B

## Appendix of Relevant Literature

### Bitterroot Ecosystem

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