GRIZZLY BEAR RECOVERY, WHITEBARK PINE, AND ADEQUATE REGULATORY MECHANISMS UNDER THE ENDANGERED SPECIES ACT

BY

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From the brink of extinction to renewed prominence, the iconic Yellowstone grizzlies exemplify the potential for Endangered Species Act (ESA) protections to bring listed species to full recovery. The U.S. Fish and Wildlife Service (FWS) listed grizzlies of the contiguous forty-eight states as threatened in 1975, using the Grizzly Bear Recovery Plan, a cooperative effort among federal and state agencies, to conserve the remaining grizzlies and their habitat. After steady population growth for thirty-two years, the FWS determined that the Yellowstone grizzly population satisfied the plan's criteria for a recovered population. The FWS implemented a final conservation strategy, describing the ongoing conservation efforts for Yellowstone grizzlies, and removed the population from the list of threatened species. In Greater Yellowstone Coalition v. Servheen*, a lawsuit challenging the delisting, the United States Court of Appeals for the Ninth Circuit vacated and remanded the delisting rule because the FWS failed to explain how future losses in whitebark pine seeds, a vital grizzly food source, would affect the grizzlies. In the second part of the Ninth Circuit's decision, the court upheld the FWS's analysis of existing adequate regulatory mechanisms protecting grizzlies after delisting. The court declined to clarify that the final conservation strategy should not be considered a regulatory mechanism, thus leaving uncertainty as to whether the FWS may rely on voluntary, non-binding agreements as regulatory mechanisms in future delisting decisions. The court also misunderstood the enforceability of national forest plans and National Park Service (NPS) regulations—relying on U.S. Forest Service and NPS management*

documents as adequate regulatory mechanisms to protect grizzlies. By allowing the FWS to delist grizzlies without legally enforceable mortality limits, the court failed to fulfill the ESA's goal of ensuring legal protections for listed species. Future decisions to delist species and judicial reviews of those decisions should focus on the adequacy of existing state laws and regulations to ensure species do not revert to threatened status.

I. INTRODUCTION

"May 5, 1805: Cap'. Clark and Drewyer killed the largest brown bear this evening which we have yet seen. . . . this bear differs from the common black bear in several respects; it's tallons are much longer and more blont, it's tale shorter, it's hair which is of a redish or bey brown, is longer thicker and finer than that of the black bear; his liver lungs and heart are much larger even in proportion with his size . . . his maw was also ten times the size of black bear, and was filled with flesh and fish. . . . this animal also feeds on roots and almost every species of wild fruit."[1]

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In 1804, Meriwether Lewis and William Clark led one of the first American expeditions across the Great Plains and Rocky Mountains through the heart of what was to become known as Grizzly Country.[2] The explorers encountered grizzly bears (*Ursus arctos horribilis*)[3] along the Missouri River and its tributaries, throughout present-day Montana, North Dakota, and South Dakota.[4] After the expedition, settlement and population growth in the western United States brought an ever-increasing number of people into contact and conflict with the bears.[5] Settlers hunted, trapped, and poisoned grizzly bears, and the abundant grizzly habitat of open plains and forests became occupied with roads and cities, leading to drastic declines in grizzly populations.[6] By the late twentieth century, the grizzlies' vast historic range, which once extended from Mexico to the Arctic, and from the Great Lakes to the Pacific Ocean, had vanished.[7] What was left of the grizzly bear population in the contiguous United States was confined to the last bastions of wilderness: ecological islands consisting of Yellowstone National Park and the Northern Rockies of Montana.[8]

Despite the precarious state of the grizzly bear, there is hope for the species' continued recovery. In 1975, the U.S. Fish and Wildlife Service (FWS) listed grizzly bears in the lower forty-eight states as a threatened

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1 Meriwether Lewis, *Journal Entry Dated May 5, 1805* in 1 ORIGINAL JOURNALS OF THE LEWIS AND CLARK EXPEDITION pt. 2 at 372 (Reuben Gold Thwaites ed., The Univ. Press 1904) (1805).

2 *See* ANDY RUSSELL, GRIZZLY COUNTRY 16 (1967). *See generally* Lewis, *supra* note 1 (providing a first-hand account of the Lewis and Clark expedition).

3 Grizzly bears are a subspecies of brown bears (*Ursus arctos*) endemic to North America. Christopher Servheen, The Status and Conservation of Bears of the World, *in* 2 EIGHTH INTERNATIONAL CONFERENCE ON BEAR RESEARCH AND MANAGEMENT MONOGRAPH SERIES 3, 18 (Laura M. Darling & W. Ralph Archibald eds., 1990). The bears were named for their grizzled appearance caused by the "grayish, or somewhat gray" tipped hairs on brown, black, or whitish fur. WILLIAM H. WRIGHT, THE GRIZZLY BEAR: THE NARRATIVE OF A HUNTER-NATURALIST 28–29 (Univ. of Neb. Press 1977) (1909). Historical accounts also attribute the description of "grisly," meaning terrible, horrible, or ferocious to the nomenclature of the bears. *Id.*

4 *See generally* Lewis, *supra* note 1.

5 *See* JOHN J. CRAIGHEAD ET AL., THE GRIZZLY BEARS OF YELLOWSTONE: THEIR ECOLOGY IN THE YELLOWSTONE ECOSYSTEM, 1959–1992, at 19–27 (1995) (discussing the increase in visitors to Yellowstone National Park as transportation and access improved); Stephen Herrero, Man and the Grizzly Bear (Present, Past, and Future?), 20 BIOSCIENCE 1148, 1148–49 (1970) (discussing correlations between visitor density and grizzly-related incidents and injuries in national parks).

6 *See* CRAIGHEAD ET AL., *supra* note 5, at 32–40; David J. Mattson & Matthew M. Reid, *Conservation of the Yellowstone Grizzly Bear*, 5 CONSERVATION BIOLOGY 364, 365–66 (1991).

7 *See* Brian L. Kuehl, *Conservation Obligations Under the Endangered Species Act: A Case Study of the Yellowstone Grizzly Bear*, 64 U. COLO. L. REV. 607, 607–08 (1993); U.S. FISH & WILDLIFE SERV., GRIZZLY BEAR RECOVERY PLAN ii (rev. ed. 1993), *available at* http://ecos.fws.gov/docs/recovery_plan/930910.pdf (concluding that grizzlies inhabited only two percent of their historic range by 1975).

8 *See* Craig R. Miller & Lisette P. Waits, *The History of Effective Population Size and Genetic Diversity in the Yellowstone Grizzly (Ursus arctos): Implications for Conservation*, 100 PROC. OF THE NAT'L ACAD. OF SCI. 4334, 4334 (2003); Robert B. Keiter, *Taking Account of the Ecosystem on the Public Domain: Law and Ecology in the Greater Yellowstone Region*, 60 U. COLO. L. REV. 923, 930 (1989) (discussing the opinion of conservation biologists that the Greater Yellowstone Ecosystem operates as a "habitat island").

species under the Endangered Species Act (ESA).[9] Biologists estimated that only a few hundred grizzlies remained from a population that had numbered over 50,000 at the time of the Lewis and Clark expedition.[10] The FWS identified regions of existing grizzly bear habitat, or recovery zones, where remaining groups of grizzlies could be protected and managed, increasing the population to sustainable levels.[11]

The Greater Yellowstone Ecosystem recovery zone stands out as the most recognized current home of grizzlies in the lower forty-eight states.[12] The ecosystem, totaling 30,000 square miles, includes Yellowstone and Grand Teton National Parks, and the surrounding areas of northwestern Wyoming, southern Montana, and northeastern Idaho.[13] Outside of the national parks,[14] six national forests,[15] a federal wildlife refuge,[16] and a dozen federally designated wilderness areas[17] also provide adjacent grizzly habitat.[18]

Within this ecosystem, policies for conserving grizzlies have relied on an increasing scientific awareness of the population's ecological needs, including food sources and habitat.[19] The seeds from whitebark pine (*Pinus albicaulis*)—an alpine tree species that grows throughout the

9 Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2006); 40 Fed. Reg. 31,734 (July 28, 1975) (codified at 50 C.F.R. § 17.11); *see* Kuehl, *supra* note 7, at 607–08.

10 *See* Brenda Lindlief Hall, *Subdelegation of Authority Under the Endangered Species Act: Secretarial Authority to Subdelegate His Duties to a Citizen Management Committee as Proposed for the Selway-Bitterroot Wilderness Grizzly Bear Reintroduction*, 20 PUB. LAND & RESOURCES L. REV. 81, 82 (1999).

11 GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at ii, 17.

12 *See generally* Editorial, *A Victory for Grizzly Bears*, N.Y. TIMES, Nov. 29, 2011, at A26 (encouraging policy makers to keep Yellowstone grizzlies on the ESA list of threatened species).

13 CRAIGHEAD ET AL., *supra* note 5, at 7; *see also* Reed F. Noss et al., *A Multicriteria Assessment of the Irreplaceability and Vulnerability of Sites in the Greater Yellowstone Ecosystem*, 16 CONSERVATION BIOLOGY 895, 896 (2002) (expanding the traditional Greater Yellowstone Ecosystem to over 40,000 square miles).

14 The ecosystem also includes the John D. Rockefeller Memorial Parkway, which is managed by the National Park Service. National Park Service, *Grand Teton National Park: John D. Rockefeller Memorial Parkway*, http://www.nps.gov/grte/jodr.htm (last visited July 14, 2012); *see also* Noss et al., *supra* note 13, at 896 (noting that the John D. Rockefeller Memorial Parkway is a part of the Yellowstone ecosystem).

15 Shoshone, Beaverhead-Deerlodge, Bridger-Teton, Caribou-Targhee, Custer, and Gallatin National Forests. Grizzly Bears; Yellowstone Distinct Population; Notice of Petition Finding; Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,874 (Mar. 29, 2007) (codified at 50 C.F.R. pt. 17).

16 *See* U.S. Fish & Wildlife Serv., *National Elk Refuge*, http://www.fws.gov/nationalelkrefuge/ (last visited July 14, 2012) (describing the National Elk Refuge).

17 The twelve federally designated wilderness areas comprise 3.3 million acres of protected habitat within the adjacent national forests. Greater Yellowstone Coalition, *Wilderness Areas*, http://www.greateryellowstone.org/experience/experienceFeatured.php?id=51 (last visited July 14, 2012).

18 *See* Keiter, *supra* note 8, at 937, 939.

19 *See* Charles T. Robbins et al., *Grizzly Bear Nutrition and Ecology Studies in Yellowstone National Park*, 14 YELLOWSTONE SCI. 19, 19–20 (2006), *available at* http://www.nrmsc.usgs.gov/files/norock/products/GrizzlyBearNutrition-Ecology.pdf (describing how modern technology has allowed for more accurate bear tracking through GPS collars and more sensitive DNA testing to determine the sex, identity, and diet of a bear through hair samples).

Yellowstone area—provide a crucial food source for grizzlies' winter preparation.[20] Changes to the Yellowstone ecosystem—most notably those due to climate change—have the potential to drastically reduce the availability of whitebark pine, which could lead to increases in grizzly mortality.[21] Yet, it remains uncertain whether this crucial food source will suffer drastic declines in the future, and what effect that may have on the Yellowstone grizzlies.[22]

Overall, the management strategies and legal protections for grizzly bears in the Greater Yellowstone Ecosystem over the past forty years have largely succeeded in producing a recovered grizzly population.[23] After the ESA listing of grizzly bears and the FWS's implementation of the Grizzly Bear Recovery Plan, the population of grizzlies in the Greater Yellowstone Ecosystem began to rebound.[24] By 2006, more than five-hundred grizzlies inhabited the region, and the population experienced steady growth at four to seven percent per year.[25]

In 2007, the FWS and eight federal and state agencies signed a Memorandum of Understanding (MOU) implementing a final conservation strategy and leading to the delisting of Greater Yellowstone Ecosystem grizzlies.[26] The strategy set management parameters for maintaining the current population of recovered grizzlies and securing habitat conditions necessary for their continued survival.[27] The strategy also incorporated the management plans of the states of Idaho, Montana, and Wyoming, and emphasized the voluntary cooperation of federal agencies, such as the National Park Service (NPS) and U.S. Forest Service (USFS).[28] Because the 2007 population of grizzlies in the Greater Yellowstone Ecosystem satisfied the FWS's recovery criteria[29] and the FWS determined that the strategy provided an adequate long-term conservation plan,[30] the FWS delisted the

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20 *See infra* Part II.B.

21 *Id.*

22 *See infra* Part IV.A.

23 *See* Karl Puckett, *Grizzlies' Range Has Expanded*, GREAT FALLS TRIB., Sept. 17, 2008, at A1; Defenders of Wildlife, *Grizzly Bear Facts, Video and Photos - Ursus arctos*, http://www.defenders.org/wildlife_and_habitat/wildlife/grizzly_bear.php (last visited July 14, 2012) (noting that the number of grizzlies in the greater Yellowstone area has nearly tripled in the past thirty years).

24 *See* Christine Paige, *State of the Grizzly*, http://fwp.mt.gov/mtoutdoors/HTML/articles/2008/StateOfTheGrizzly.htm (last visited July 13, 2012).

25 *Id.*; *see also* Christopher Servheen & Rebecca Shoemaker, *Delisting the Yellowstone Grizzly Bear: A Lesson in Cooperation, Conservation, and Monitoring*, 16(2) YELLOWSTONE SCI. 25, 26–27 (2008).

26 U.S. FISH & WILDLIFE SERV., FINAL CONSERVATION STRATEGY FOR THE GRIZZLY BEAR IN THE GREATER YELLOWSTONE AREA 12–13 (2007) [hereinafter FINAL CONSERVATION STRATEGY].

27 *See id.* at 6–11.

28 *See id.* at 72–78.

29 *See* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 41–44. Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,871–72 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17).

30 *See* FINAL CONSERVATION STRATEGY, *supra* note 26, at 5; 72 Fed. Reg. at 14,923.

distinct population of Yellowstone area grizzlies from threatened status under the ESA.[31]

But a recent Ninth Circuit decision in *Greater Yellowstone Coalition v. Servheen*[32] vacated the FWS's removal of grizzly bears from ESA listing. In a challenge brought by the Greater Yellowstone Coalition,[33] the Ninth Circuit affirmed the federal District Court of Montana's determination that the FWS failed to rationally explain why the potential loss of whitebark pine would not adversely affect the grizzly population.[34] The court explained that the FWS provided no scientific evidence that whitebark pine losses would not result in Yellowstone grizzlies reverting to threatened status.[35] The Ninth Circuit therefore vacated and remanded the delisting rule and reinstated ESA protections to the Yellowstone grizzlies.[36]

A problematic aspect of the Ninth Circuit's decision concerns the court's reversal of the district court's determination that no adequate regulatory mechanisms existed to ensure the continued survival of grizzlies.[37] The Ninth Circuit instead concluded that provisions relating to grizzly habitat conservation in national forest plans, NPS park regulations, and other state and federal laws provided sufficient legal protections for the species.[38] In reaching this determination, the Ninth Circuit missed an opportunity to clarify that non-binding agreements, such as the final conservation strategy for Yellowstone grizzlies, do not qualify as adequate regulatory mechanisms under the ESA.[39] The court also erred in concluding that national forest plans and NPS regulations containing provisions to protect grizzly habitat were enforceable.[40] After the Supreme Court's decision in *Norton v. Southern Utah Wilderness Alliance* (*SUWA*),[41] broad policy goals like the habitat protections for grizzlies are not enforceable.[42] Therefore, the Ninth Circuit should have concluded that no adequate regulatory mechanisms for grizzlies existed.[43] The court implicitly contradicted the ESA's long-standing policy of "institutionalized caution" by failing to ensure that legally enforceable limits on grizzly mortality were in place prior to approving FWS's analysis of regulatory mechanisms.[44]

This Chapter explores the recovery and conservation of the Greater Yellowstone Ecosystem grizzly bears, focusing particular attention on the

31 72 Fed. Reg. at 14,866.

32 Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015. (9th Cir. 2011).

33 The Greater Yellowstone Coalition is a non-profit environmental organization based in Bozeman, Montana. *See* Greater Yellowstone Coalition, *Who We Are*, http://www.greateryellowstone.org/about/who-we-are.php (last visited July 13, 2012).

34 *Servheen*, 665 F.3d at 1030.

35 *Id.*

36 *Id.* at 1032.

37 *See id.*

38 *Id.*

39 *See infra* Part V.A.

40 *See infra* Part V.B.

41 542 U.S. 55 (2004).

42 *Id.* at 66, 69, 71–72.

43 *See infra* Part V.B.

44 *See infra* Part V.C.

ESA's requirement that the FWS ensure the existence of adequate regulatory mechanisms before delisting a species.[45] Part II provides a primer on Yellowstone grizzly ecology, particularly the population's dependence on whitebark pine—a food source at risk of decline due to climate change. Part III examines the conservation measures the FWS, state, and other federal agencies implemented to protect the grizzly population. Part IV discusses the *Servheen* decisions in the district court and Ninth Circuit, and Part V criticizes the Ninth Circuit's analysis of adequate regulatory mechanisms protecting the delisted Yellowstone grizzlies. Part VI concludes by explaining the current status of Yellowstone grizzlies and recommending that future delisting decisions place special emphasis on the adequacy of state regulatory mechanisms for the continued conservation of the population.

The court's ruling in *Servheen* reinstating the threatened status of Yellowstone grizzlies will hardly be the last case to consider the future of the species. Despite continually satisfying the recovery criteria, grizzlies will remain on the ESA list of threatened species until the FWS promulgates a new rule explaining the effects of whitebark pine losses on the population.[46] For Yellowstone grizzlies, the hope for continued recovery once again rests in an uncertain balance between ecological forces and the will of the human community to protect the iconic species.

II. YELLOWSTONE GRIZZLIES AND WHITEBARK PINE

Grizzly bears in Yellowstone are the ultimate "equal opportunity maulers"[47] and locavores,[48] adapting their diet to the seasons and availability of food in a biologically and geographically diverse ecosystem.[49] Grizzlies use a variety of foods at different times of the year, especially seeds from the whitebark pine, which play a significant role in sustaining the bears throughout the winter.[50] With climate change threatening to eliminate whitebark pine habitat, grizzly bears may be forced to search for replacement food sources, which would seriously jeopardize their chances of survival.[51]

45 Endangered Species Act of 1973, 16 U.S.C. § 1533(a)(1)(D) (2006).

46 *See infra* Part VI.

47 Hopkins v. Uninsured Emp'rs' Fund, 251 P.3d 118, 121 (Mont. 2011).

48 "One who eats foods grown locally whenever possible." Merriam-Webster, *Locavore*, http://www.merriam-webster.com/dictionary/locavore (last visited July 13, 2012).

49 *See* PAUL SCHULLERY, THE BEARS OF YELLOWSTONE 46 (1992).

50 *See id.*

51 *See* David J. Mattson et al., *Yellowstone Grizzly Bear Mortality, Human Habituation, and Whitebark Pine Seed Crops*, 56 J. WILDLIFE MGMT. 432, 435, 439 (1992).

A. Grizzly Bear Ecology

In the early spring, after emerging from winter dens where bears fast for up to 211 days,[52] hungry grizzlies begin hunting elk, bison, moose, deer, sheep, and pronghorn.[53] Grizzlies also find reliable spring meals by scavenging for carrion of winter-killed bison and elk, and chasing smaller predators away from their kills.[54] During the late spring, grizzlies concentrate on fishing in streams and rivers—each bear devouring up to a hundred cutthroat trout per day on average.[55] As spring turns to summer, grizzlies turn their dietary attention to the abundant nutrition of plants,[56] grazing on grasses, clover, horsetail, dandelion, biscuit root, and berries.[57] At the end of the summer, grizzlies focus on preparing for winter with a high-fat diet of nuts found in small mammal caches, and army cutworm moths found in the high alpine talus slopes of Yellowstone.[58]

In autumn, when other food sources are scarce, whitebark pine seeds provide one of the most important food sources for grizzlies preparing to fast for most of the winter.[59] The high-fat content pine seeds are found throughout the Greater Yellowstone Ecosystem,[60] and grizzlies typically consume massive quantities at a time by raiding squirrel maidens—caches where small mammals have collected and stored the seeds.[61] In years where whitebark pine fails to produce enough seeds for the grizzly population, bears must search for high-caloric food sources elsewhere—primarily in human inhabited areas.[62] Therefore, when whitebark pine crops decline, grizzly mortality increases: bears either fail to survive the winter due to lack of nutrition, or search for food in human-occupied areas, resulting in

52 *See* SCHULLERY, *supra* note 49, at 60.

53 *See id.* at 47–48.

54 The bears often cache the remainder of their kills or carrion, coming back to the carcasses throughout the year. *See id.* at 48, 52.

55 *See id.* at 54.

56 *See id.* at 53. Although grizzly bears are better known for their carnivorous proclivities, most grizzlies are primarily vegetarians, with over 80% of their overall diet consisting of plant matter. *Id.* at 47. In contrast, studies indicate that the diet of Yellowstone grizzlies consists of more terrestrial meat: 79% of males' diet and 48% of females' diet is terrestrial meat. *See* Proposed Rule Removing Yellowstone Grizzly from Endangered Species Listing, 70 Fed. Reg. 69,854, 69,856 (Nov. 17, 2005) (to be codified at 50 C.F.R. pt. 17).

57 *See* SCHULLERY, *supra* note 49 at 53.

58 Army cutworm moths provide a significant food source for grizzlies as the bears move into high alpine areas at the end of summer and early fall. *See id.*; FINAL CONSERVATION STRATEGY, *supra* note 26, at 48.

59 *See* SCHULLERY, *supra* note 49, at 53; Mattson et al., *supra* note 51, at 433.

60 *See* STEPHEN F. ARNO & RAYMOND J. HOFF, U.S. FOREST SERVICE, GEN. TECHNICAL REPORTS INT-253, SILVICS OF WHITEBARK PINE (*PINUS ALBICAULIS*) 1 (1989).

61 *See* SCHULLERY, *supra* note 49, at 53.

62 Grizzly bears will often search out livestock, trash, or other food left unattended in human populated areas. *See* Mattson et al., *supra* note 51, at 433–34; Kerry A. Gunther et al., *Grizzly Bear-Human Conflicts in the Greater Yellowstone Ecosystem, 1992–2000*, 15 URSUS 10, 12, 14, 16 (2004) (listing livestock and anthropogenic foods, including pet foods, as primary targets; other attractants include gardens, orchards, and beehives).

conflicts and, ultimately, increased bear deaths.[63] Because grizzlies have low reproductive rates,[64] the population is highly susceptible to ecosystem changes that threaten even one of the bears' staple food sources.[65]

B. Whitebark Pine and Climate Change

The primary food source for Yellowstone grizzlies' winter preparation derives from the seeds (pinecones) of whitebark pine trees.[66] Common throughout the alpine areas of the Greater Yellowstone Ecosystem, whitebark pine grows at timberline and is part of one of the highest elevation forests in North America.[67] As a competition-intolerant species,[68] whitebark pine depends on cool atmospheric temperatures, high snow packs, strong winds, and periodic forest fires to prevent competitor species from overtaking the high alpine habitat.[69] The trees occupy a niche environment that competitors, including other pine and fir species, typically cannot inhabit.[70]

Whitebark pine grows slowly and is known for its long life cycles, old ages, and slow reproductive capabilities.[71] Typical trees grow and develop for 65 to 100 years before producing pine cones,[72] and live for up to 1,000 years in the Yellowstone ecosystem.[73] Whitebark pine forests exhibit rapid declines due to diseases or other environmental factors as well.[74] As a result, forest regeneration occurs over a dramatically slow time frame: stands may take 500-700 years to regenerate after severe disturbances.[75]

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63 *See* SCHULLERY, *supra* note 49, at 54–55. The availability of whitebark pine is one of the most important factors affecting grizzly mortality in the Yellowstone ecosystem. Mattson et al., *supra* note 51, at 439.

64 *See* SCHULLERY, *supra* note 49, at 64. The average litter size of female grizzlies in Yellowstone is 1.9 to 2.4 cubs. Females will keep their cubs for two years, only having a new litter every other year. *Id.*

65 *See* Gunther et al., *supra* note 62, at 16.

66 In years of high whitebark pine production, up to fifty-one percent of Yellowstone grizzlies' yearly protein intake derives from whitebark pine. Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,878 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17); *see* Robbins et al., *supra* note 19, at 19, 24 ("Whitebark pine nuts are by far the most important plant food eaten by the park's grizzly bears").

67 *See* ARNO & HOFF, *supra* note 60, at 1.

68 *See id.* at 6.

69 The conifer thrives in alpine habitats at high elevations with strong winds, severe blizzards, high snow packs, and cool growing seasons. *See id.* at 1–2.

70 *See id.* at 3.

71 *See id.* at 5–6; Katherine C. Kendall & Robert E. Keane, *Whitebark Pine Decline: Infection, Mortality, and Population Trends*, *in* WHITEBARK PINE COMMUNITIES: ECOLOGY AND RESTORATION 221, 237 (Diana F. Tomback & Stephen F. Arno eds., 2001).

72 *See* Kendall & Keane, *supra* note 71, at 237.

73 The slow reproductive rates and longevity of the trees' life cycles contribute to their slow adaptive processes and make the trees especially susceptible to biological and physical changes in the environment. *See* ARNO & HOFF, *supra* note 60, at 4–6.

74 *See* Kendall & Keane, *supra* note 71, at 236.

75 Jim Robbins, *At Yellowstone, an Ecosystem Teetering on a Tree*, N.Y. TIMES, Feb. 8, 2000, at F5.

In the Greater Yellowstone Ecosystem, whitebark pine faces a high risk of decline caused by three synergistic environmental threats.[76] European blister rust, a fungal disease that attacks whitebark pine, currently poses a significant risk to whitebark pine forests.[77] Between 1971 and 1991, blister rust killed as much as 42% of the whitebark pine trees surrounding the Yellowstone ecosystem,[78] and the parasite persists as a current problem for stands throughout the region.[79] Weakened by blister rust, whitebark pine is increasingly susceptible to a second environmental threat: infestation by mountain pine beetles,[80] a native species that attacks and kills old or weakened pine trees.[81] Historically, whitebark pine faced little threat from the mountain pine beetle because whitebark forests grew outside the climatic range of the beetles.[82] Scientists warn that rising temperatures due to climate change will increase the range of mountain pine beetles, hence increasing the risk of beetle kills in whitebark pine forests.[83]

Most importantly, climate change poses a potential threat to whitebark pine habitat in the Yellowstone ecosystem.[84] In a seminal study of the Yellowstone ecosystem and climate change, ecologists concluded that climate change could shift the alpine tree line upwards, displacing whitebark pine habitat by allowing other pine and fir species to move up in elevation.[85] Scientific modeling indicated that whitebark pine habitat would likely decrease and become more fragmented as a result of changing climate conditions.[86] In some scenarios, whitebark pine may disappear completely from the Yellowstone ecosystem in the next 50 to 100 years.[87] Yet, the effects of climate change on whitebark pine are not completely understood; increases in temperature extremes and forest fires could benefit whitebark

76 Kendall & Keane, *supra* note 71, at 221–26.

77 European blister rust (*Cronartium ribicola*), also known as white pine blister rust, is a non-native, invasive fungus species that attacks whitebark pine trees. *See id.* at 222–25 (describing European blister rust and its invasion pattern).

78 *Id.* at 227.

79 *See id.* at 221; Robbins, *supra* note 75.

80 Kendall & Keane, *supra* note 71, at 225.

81 *See* Werner A. Kurz et al., *Mountain Pine Beetle and Forest Carbon Feedback to Climate Change*, 452 NATURE 987, 987–88 (2008) (describing favorable hosts as "mature stands").

82 *See* Frederic H. Wagner, *Global Warming Effects on Climactically-Imposed Ecological Gradients in the West*, 27 J. LAND RESOURCES & ENVTL. L. 109, 115 (2006) (describing the range of mountain pine beetles and noting their sensitivity to cold temperature).

83 Jesse A. Logan et al., *Whitebark Pine Vulnerability to Climate-Driven Mountain Pine Beetle Disturbance in the Greater Yellowstone Ecosystem*, 20 ECOLOGICAL APPLICATIONS 895, 895–96 (2010).

84 *See id.*

85 *See* William H. Romme & Monica G. Turner, *Implications of Global Climate Change for Biogeographic Patterns in the Greater Yellowstone Ecosystem*, 5 CONSERVATION BIOLOGY 373, 376–77 (1991).

86 *Id.* at 382.

87 *See* Mike Kauffman, *Through the Looking Glass: The Delisting of the Yellowstone Grizzly*, 44 IDAHO L. REV. 213, 245 (2007); Craig M. Pease & David J. Mattson, *Demography of the Yellowstone Grizzly Bears*, 80 ECOLOGY 957, 969 (1999); Robbins, *supra* note 75.

pine by eliminating competitor species.[88] Nevertheless, by decreasing available habitat, increasing competition with faster-reproducing tree species, and exposing the alpine forests to mountain pine beetle infestations, climate change poses a significant risk to whitebark pine survival.[89] Because the grizzly bears of Yellowstone depend on whitebark pine seeds as a crucial food source for winter survival, the risks of climate change to the forests threaten the continued recovery and conservation of the grizzly population.[90]

III. GRIZZLY BEAR RECOVERY, THE FINAL CONSERVATION STRATEGY, AND DELISTING

In 1975, the FWS listed grizzly bears in the lower forty-eight states as a threatened[91] species under the ESA.[92] The determination to apply ESA protections[93] to the bears came after decades of scientific studies concluded that only a fraction of the grizzly population existed in the United States outside of Alaska, and only about two hundred grizzlies remained in the

88 *See* Kendall & Keane, *supra* note 71, at 236. The potential effects on whitebark pine seed production are also not completely understood. *Id.*

89 *See* Logan et al., *supra* note 83, at 896; Romme & Turner, *supra* note 85, at 376.

90 *See* Pease & Mattson, *supra* note 87, at 969 ("The threats posed by diminishing whitebark pine and increasing numbers of people are inconsistent with an optimistic long-term prognosis for the Yellowstone grizzly bear population.").

91 Under the ESA, a species is threatened if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Endangered Species Act of 1973, 16 U.S.C. § 1532(20) (2006); *see* RICHARD LITTELL, ENDANGERED AND OTHER PROTECTED SPECIES: FEDERAL LAW AND REGULATION 4 (1992).

92 In 1973, Congress enacted the ESA as a mechanism for "drawing the line on extinction" and bringing threatened and endangered species to population levels where they would no longer need legal protections. DANIEL J. ROHLF, THE ENDANGERED SPECIES ACT: A GUIDE TO ITS PROTECTIONS AND IMPLEMENTATION 19–28 (1989). Prior to listing any species, the FWS must consider five factors: "(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of regulatory mechanisms; or (E) other natural or manmade factors affecting the continued existence" of the species. 16 U.S.C. § 1533(a)(1)(A)–(E) (2006). A species may be listed if one or more factors threaten the species' chances for survival. *See* Elizabeth A. Shulte, *From Downlisting to Delisting: Anticipating Legal Actions If Gray Wolves Are Delisted From the Endangered Species Act*, 24 J. LAND RESOURCES & ENVTL. L. 537, 542–43 (2004). In the 1975 listing decision for grizzly bears, the FWS noted that range and land use practices in the West, human depredation, the inadequacy of existing regulatory mechanisms, and the genetic isolation of the species threatened the continued survival of grizzly bears in the lower 48 states. 40 Fed. Reg. 31,734 (July 28, 1975) (codified at 50 C.F.R. § 17.11).

93 The ESA provides listed species with procedural and substantive legal protections. Section 7 imposes a duty on federal agencies to avoid taking actions that jeopardize, or adversely modify critical habitat of listed species. 16 U.S.C. § 1536(a)(2) (2006); *see* Oliver A. Houck, *The Endangered Species Act and Its Implementation By the U.S. Departments of Interior and Commerce*, 64 U. COLO. L. REV. 277, 316 (1993). Section 9 makes it unlawful to "take"—meaning "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect"—any threatened or endangered species. 16 U.S.C. §§ 1532(19), 1538(a)(1) (2006); Federico Cheever & Michael Balster, *The Take Prohibition in Section 9 of the Endangered Species Act: Contradictions, Ugly Ducklings, and Conservation of Species*, 34 ENVTL. L. 363, 365 (2004).

Greater Yellowstone Ecosystem.[94] Since 1975, grizzly populations have responded to federal efforts to protect the species and preserve grizzly habitat.[95] The population of Yellowstone grizzlies grew at rates between 4.2% and 7.6% per year from 1983 to 2002.[96] In 2007, the FWS removed the Yellowstone grizzly population from the list of threatened species, despite the grizzlies' ecological dependence on whitebark pine.[97]

A. The Grizzly Bear Recovery Plan

After listing a species as threatened, the FWS must develop a recovery plan ensuring that the species is protected from jeopardy and habitat loss, and that it benefits from federal efforts to improve the species' population numbers.[98] The ESA requires the FWS to use recovery plans to identify conservation goals and implement steps necessary to bring the species to full recovery—the point "at which listing is no longer appropriate."[99] Recovery plans must contain "site specific management actions"[100] and "objective, measurable criteria"[101] that will indicate when the species may be considered fully recovered.[102]

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94 After 1969, the NPS closed garbage dumps in Yellowstone National Park and began the policy of removing "problem" bears from tourist areas in the park. Part of the impetus for listing grizzlies under the ESA resulted from population declines in Yellowstone grizzlies after the closure of the dumps, which had provided grizzlies with an easy and reliable food source. *See* SCHULLERY, *supra* note 49, at 128–29, 149. In 1975, only 130 to 312 grizzly bears survived in the Yellowstone ecosystem as a distinct population, completely isolated from other grizzlies in the northern Rockies of Montana, Idaho, and Washington. *See* News Release, U.S. Fish & Wildlife Serv., Successful Recovery Efforts Bring Yellowstone Grizzly Bears Off the Endangered List (Mar. 22, 2007), http://www.fws.gov/news/NewsReleases/showNews.cfm?newsId=7A76B25D-CF90-9315-EB129326FCDD4ADC (last visited July 15, 2012); *see* Servheen & Shoemaker, *supra* note 25, at 25.

95 *See* Puckett, *supra* note 23.

96 Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,871 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17).

97 *Id.* at 14,866.

98 *See* Daniel J. Rohlf, *Section 4 of the Endangered Species Act: Top Ten Issues for the* Next *Thirty Years*, 34 ENVTL. L. 483, 497 (2004) (stating that "lawmakers in 1978 directed FWS . . . to 'develop and implement' recovery plans for listed species that could benefit from such plans").

99 50 C.F.R. § 402.02 (2009). Congress amended the ESA in 1978 to require recovery plans. Rohlf, *supra* note 98, at 497. Prior to 1978, the FWS had implemented a practice of working for species recovery through the use of "recovery teams," consisting of FWS scientists along with other federal, state, and local experts. *See id.* The 1978 amendment essentially mandated the continuation and expansion of this practice. *See id.*

100 Endangered Species Act of 1973, 16 U.S.C. § 1533(f)(1)(B)(i) (2006).

101 *Id.* § 1533(f)(1)(B)(ii) (2006).

102 Although the development of recovery plans involves a process similar to administrative rulemaking, recovery plans do not bind the agency and courts have not forced agencies to follow the substantive recommendations contained in recovery plans. *See* Nat'l Audubon Soc'y v. Hester, 801 F.2d 405, 407–08 (D.C. Cir. 1986) (explaining that agencies are free to change their policies so long as they adequately explain and support their decisions); Nat'l Wildlife Fed'n v. Nat'l Park Serv., 669 F. Supp. 384, 388 (D. Wyo. 1987) ("The Secretary is required to initiate a recovery plan 'unless he finds that such a plan will not promote the conservation of the

In the decision to list grizzly bears in the conterminous states as a threatened species under the ESA, the FWS identified two primary challenges for grizzly bear conservation.[103] First, human-caused grizzly bear deaths needed to be reduced in order to keep the population at sustainable levels.[104] Second, the remaining areas of grizzly bear habitat needed to be conserved for grizzlies and their primary food sources.[105] In order to address these two challenges, the FWS formed the Interagency Grizzly Bear Study Team, a committee of scientists from federal and state wildlife agencies in charge of collecting, managing, and distributing studies of grizzly bears.[106] Based on the scientific recommendations of the interagency study team, the FWS developed the Grizzly Bear Recovery Plan (GBRP), a comprehensive plan for federal and state agencies to conserve grizzlies by reducing human-caused mortality and protecting habitat.[107]

The GBRP identified five known populations of grizzlies in the lower forty-eight states,[108] including the Yellowstone ecosystem grizzlies.[109] For each grizzly population, the GBRP delineated recovery zones,[110] consisting of the "occupied habitat" of the grizzly population as of 1982.[111] The FWS further subdivided the recovery zones into bear management units (BMUs), which provided a smaller, more manageable area for bear habitat and population monitoring.[112] Within each recovery zone, the GBRP proposed recovery objectives, recovery criteria, and specific actions necessary to promote the recovery of the population.[113] The GBRP included a process to delist each of the five grizzly populations once each recovery zone population reached the goals set by the GBRP.[114] After a recovery zone

species.'"); Rohlf, *supra* note 98, at 499 (discussing the slow pace of implementation and modest impacts of most recovery plans).

103 40 Fed. Reg. 31,734 (July 28, 1975) (codified at 50 C.F.R. § 17.11); *see* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 10.

104 *See* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 10.

105 *Id.*

106 *See* SCHULLERY, *supra* note 49, at 142.

107 *See* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7.

108 In addition to the Greater Yellowstone Ecosystem, populations of grizzly bears existed in the Northern Continental Divide Ecosystem of north-central Montana, the Cabinet/Yaak Ecosystem of western Montana and northern Idaho, the Northern Cascades of northern Washington, and the Selkirk Ecosystem of northern Idaho and northeastern Washington. *Id.* at 10–12. The Selway-Bitterroot Ecosystem of southwestern Montana and eastern Idaho was also identified as a recovery area because of its potential to support a significant population of grizzlies. *Id.*; *see* Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,869 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17).

109 GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 11.

110 Recovery zones were defined as an area "large enough and of sufficient quality to support a recovered grizzly bear population." *Id.* at 17.

111 *Id.* at 17–18. The recovery plan was finalized in 1982 and updated in 1993 using the same recovery zones.

112 *Id.* at 17 ("Recovery zones are divided into areas designated as Bear Management Units (BMUs). The BMUs are areas that are used for habitat evaluation and population monitoring."

113 *Id.* at ii, 15–16.

114 *Id.* at 16.

population reached the population demographic parameters set by the GBRP, the FWS would create a final conservation strategy and delist the recovery zone population.[115]

The Yellowstone Recovery Zone consisted of an area over 9,500 square miles within the Greater Yellowstone Ecosystem.[116] The core of the recovery zone encompassed Yellowstone and Grand Teton National Parks, with over 99% of the land area managed by the federal government.[117] In 1993, the FWS noted that a minimum of 236 individual grizzlies inhabited the Yellowstone Recovery Zone.[118] The GBRP defined the recovery objective for the Yellowstone grizzlies as establishing a population that could sustain the existing level of human-caused mortality and that was well distributed throughout the ecosystem.[119]

In order to determine when the population achieved the recovery objective, the GBRP established three recovery criteria for the Yellowstone grizzlies.[120] A recovered population would consist of a minimum of: 1) a population of at least fifteen females with cubs over a running six-year average, including the recovery zone and within a ten mile area surrounding the recovery zone; 2) sixteen of eighteen bear management units occupied with females with cubs over a running six-year sum, and no two adjacent bear management units unoccupied with grizzlies; and 3) annual mortality limits of 9% of the total female grizzly bear population, 15% of males, and 9% of dependent cubs[121]—each limit not to be exceeded in any three consecutive years.[122] If grizzly bears in the Yellowstone Recovery Zone met the demographic goals and the mortality limits, the FWS would consider the population recovered and delist the bears from the ESA.[123]

After settling a lawsuit challenging the adequacy of the GBRP,[124] the FWS supplemented the recovery plan by including habitat-based recovery

115 *Id.*

116 *Id.* at 11.

117 *Id.* About 1% of the land area in the Yellowstone Recovery Zone was state-managed or private property. *See id.*

118 *Id.*

119 *Id.* at 41.

120 *Id.* at 44.

121 The FWS defines dependent bears as bears less than two years old. *See* FINAL CONSERVATION STRATEGY, *supra* note 26, at 7.

122 This is the updated standard adopted in 2007 as part of the FINAL CONSERVATION STRATEGY. The original recovery criteria established in 1982 limited known human-caused mortality to less than four percent of the population estimate, with no more than thirty percent of the mortality consisting of females. Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,872 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17). The standard was updated as new science on grizzly bear mortality became available. See GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 41, for the original recovery criteria.

123 *See* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at ii, 16.

124 *See* Fund for Animals v. Babbitt, 967 F. Supp. 6 (D.D.C. 1997) (establishing a court-approved settlement in which the FWS would adopt habitat-based criteria supplementing the GBRP for the Yellowstone grizzlies).

criteria for Yellowstone grizzlies.[125] The habitat-based criteria required federal agencies to comply with objective and measurable management policies for grizzly habitat within the Yellowstone Recovery Zone.[126] First, the habitat criteria required land management agencies to maintain the percent of grizzly bear habitat within each bear management unit at or above levels that existed in 1998.[127] Permanent changes to habitat conditions required the acting agency to provide replacement habitat and conduct an analysis of the cumulative effects of the change.[128] The criteria allowed temporary changes in only one bear management unit at a time, and only if the effects to grizzly habitat were minimal.[129] Second, the criteria required land management agencies within the recovery zone to maintain developed sites, including roads, campsites, and buildings at or below 1998 use levels.[130] Third, the criteria prohibited new commercial livestock activities or increases in the number of grazing animals within the recovery zone.[131] The habitat-based criteria added a number of parameters for monitoring, including grizzly bear food availability,[132] habitat effectiveness,[133] grizzly bear mortality causes and locations, and private lands development.[134]

In addition to population and habitat-based criteria, the GBRP stressed the implementation of grizzly bear management guidelines on *all* federally managed lands within the Greater Yellowstone Ecosystem.[135] The Bureau of and Management (BLM) collaborated with NPS and the USFS to adopt the Interagency Grizzly Bear Guidelines as part of their land and resource management plans for the national forests, parks, and BLM lands within the ecosystem.[136] The guidelines provided management scenarios for grizzly bears according to the type of grizzly habitat offered by the particular land area.[137] Thus, federal lands within the Greater Yellowstone Ecosystem that

125 U.S. FISH & WILDLIFE SERV., GRIZZLY BEAR RECOVERY PLAN, SUPPLEMENT: HABITAT-BASED RECOVERY CRITERIA FOR THE YELLOWSTONE ECOSYSTEM 2 (2007) [hereinafter GBRP SUPPLEMENT].

126 *See id.*

127 *See id.* at 5. The FWS decided to use 1998 as a baseline year for grizzly bear habitat because the grizzly bear population was considered to be improving in 1998. Grizzly bears had a 4% to 7% percent per year growth rate, and habitat conditions were considered favorable to be a baseline year for maintaining or improving grizzly habitat. *Id.* at 2. The FWS selected 1998 as a baseline because "it was known that these habitat values had adequately supported an increasing Yellowstone grizzly bear population throughout the 1990s." Proposed Rule Removing Yellowstone Grizzly from Endangered Species Listing, 70 Fed. Reg. 69854, 69,858 (Nov. 17, 2005) (to be codified at 50 C.F.R. pt. 17).

128 *See* GBRP SUPPLEMENT, *supra* note 125.

129 The total acreage of temporary changes must be less than 1% of the total area of the largest BMU, and a change may only be considered temporary if it is completely removed and the habitat restored within one year. *Id.* at 2–3.

130 *Id.* at 5.

131 *Id.* at 6.

132 *Id.*

133 *Id.* at 7.

134 *Id.* at 8. *See* Proposed Rule Removing Yellowstone Grizzly from Endangered Species Listing, 70 Fed. Reg. at 69,858.

135 *See* GRIZZLY BEAR RECOVERY PLAN, *supra* note 7, at 138–142.

136 *Id.* at 139.

137 *Id.* at 51.

offered the most suitable grizzly bear habitat would receive management that most favored the needs of the grizzlies.[138]

B. Final Conservation Strategy

In 2007, the FWS completed a final conservation strategy to replace the GBRP and remain in effect after removal of ESA-protections from the grizzly population.[139] The FWS developed the conservation strategy in collaboration with other federal and state agencies in order "to describe and summarize the coordinated efforts to manage the grizzly bear population," and to ensure the continued conservation of Yellowstone grizzlies.[140] The strategy re-designated the 9,500-acre Yellowstone recovery area as the primary recovery area (PCA), which the FWS described as "the minimum seasonal habitat components needed to support the recovered grizzly bear population."[141] The conservation strategy included two main mechanisms for protecting a recovered Yellowstone grizzly population after delisting: population requirements and habitat standards.[142]

First, the conservation strategy established population requirements for Yellowstone grizzlies based on the original recovery criteria contained in the GBRP.[143] The requirements included 1) a total population of more than five hundred grizzlies; 2) sixteen of eighteen bear management units within the PCA occupied by females with cubs during a six-year period, and no more than two adjacent bear management units unoccupied during the same six-year period; and 3) annual mortality limits of nine percent of females, fifteen percent of males, and nine percent of dependent cubs—each limit not to be exceed in any three consecutive years.[144] The population requirements included the total population of Yellowstone grizzlies anywhere in the ecosystem, and the mortality limits adopted by the conservation strategy applied to the entire Yellowstone ecosystem.[145] As long as the Yellowstone grizzlies met these requirements, the FWS would continue to consider the population recovered.[146]

Second, the conservation strategy adopted the same habitat-based criteria contained in the GBRP.[147] The strategy aimed to preserve existing grizzly habitat within the PCA and allow grizzlies to expand their range within the entire PCA.[148] Under the conservation strategy, however, the

138 *Id.* at 139.

139 *See* FINAL CONSERVATION STRATEGY, *supra* note 26, at 5.

140 The conservation strategy represented a complete and integrated document of all the legal protections of grizzly bears on federal and state lands within the Yellowstone ecosystem. *Id.*

141 *See id.* at 16.

142 *See id.* at 6–8.

143 *See id.* at 6–7, 26.

144 *See id.* at 26–27.

145 *See id.* at 25.

146 *See id.* at 25–26.

147 *See id.* at 38.

148 *See id.*

habitat standards applied only within the PCA; grizzly bear habitat outside the PCA would not receive the same levels of protection.[149] Land management agencies within the Greater Yellowstone Ecosystem outside of the PCA would no longer need to comply with the habitat standards, and federal agencies would not need to follow the Interagency Grizzly Bear Guidelines for national forests, national parks, or BLM lands.[150]

As part of the conservation strategy, the FWS and multiple federal and state agencies signed a memorandum of understanding (MOU) in which the agencies agreed to implement the population requirements, habitat standards, and other protocols[151] recommended by the strategy.[152] The MOU emphasized that implementation of the conservation strategy was a cooperative effort, and not intended to replace statutory or other legal responsibilities.[153] The conservation strategy became effective in March 2007, when the FWS published the final rule delisting the Yellowstone grizzly population.[154]

C. Delisting Grizzlies

Twenty-five years after the federal government listed Yellowstone grizzlies as threatened, the status of the species improved significantly.[155] The grizzlies' range expanded by 48%, and the population increased from about 200 individuals to over 500 between 1983 and 2001.[156] In light of the clear successes of the ESA's protections and the implementation of the GBRP,[157] the FWS determined that the Yellowstone grizzlies had met the recovery criteria and were a fully recovered population.[158] In 2007, the FWS promulgated a final rule designating the Yellowstone population as a distinct population segment, and removing the Yellowstone population from the threatened species list.[159]

149 *See id.* at 38–39.

150 *See id.* at 14.

151 In addition to population requirements and habitat standards, the conservation strategy implemented monitoring procedures and human/bear conflict protocols. *See id.* at 46, 57–60.

152 *See id.* at 12–13.

153 *See id.*

154 Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015, 1022–23 (9th Cir. 2011).

155 *Id.* at 1020–23.

156 Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,869, 14,935 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17).

157 *Id.* at 14,866.

158 *Id.* at 14,871–73.

159 *Id.* at 14,866.

IV. THE *SERVHEEN* DECISIONS

In November 2007, the Greater Yellowstone Coalition filed a lawsuit challenging the FWS's final rule that delisted Yellowstone grizzlies.[160] The coalition claimed that the FWS failed to satisfy the ESA's delisting procedures, particularly the requirement that the FWS ensure sufficient protections existed to prevent the species from reverting to threatened status once federal protections were removed.[161] Under section 4 of the ESA, the FWS must use the best available science to analyze five factors affecting the species: "(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence."[162] A species may not be delisted if one or more factors currently threaten the species.[163] The coalition averred that the FWS's delisting decision failed to articulate rational reasons for why factors D and E would not threaten the Yellowstone population.[164]

A. District Court Decision

The district court granted summary judgment to the coalition,[165] determining that the FWS did not adequately explain why factor E—in this case, potential declines in whitebark pine—would not pose threats to Yellowstone grizzlies.[166] The FWS's rule delisting Yellowstone grizzlies concluded that the "opportunistic omnivores"[167] would find replacement food sources elsewhere in the ecosystem in the event of whitebark pine losses.[168] The FWS's rule also noted that high alpine areas in the eastern portion of the PCA, where whitebark pine was expected to persist, provided sufficient whitebark pine crops to compensate for declines in the rest of the

160 Complaint at 1, Greater Yellowstone Coal. v. Servheen, 672 F. Supp. 2d 1105 (D. Mont. 2009) (No. 9:07-CV-00134-DVM), 2007 WL 4910038, ¶ 1. The lawsuit named defendant Dr. Christopher Servheen in his official capacity as the FWS Grizzly Bear Recovery Coordinator. *Id.* ¶ 6.

161 Greater Yellowstone Coal. v. Servheen, 672 F. Supp. 2d 1105, 1113–14 (D. Mont. 2009).

162 Endangered Species Act of 1973, 16 U.S.C. § 1533(a)(1)(A)–(E) (2006); *see also* 50 C.F.R. § 424.111(c) (2009) (setting forth factors for listing, delisting, or reclassifying a species).

163 16 U.S.C. § 1533(g)(1) (2006); *see* Holly Doremus & Joel E. Pagel, *Why Listing May Be Forever: Perspectives on Delisting Under the U.S. Endangered Species Act*, 15 CONSERVATION BIOLOGY 1258, 1262 (2001).

164 *Servheen*, 672 F. Supp. 2d at 1118.

165 *Id.* at 1126.

166 *Id.* at 1119–20.

167 72 Fed. Reg. 14,866, 14,930 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17); *see also Servheen,* 672 F. Supp. 2d at 1119.

168 72 Fed. Reg. at 14,929 (noting that grizzlies are "used to feeding on alternative foods during the regularly occurring years when whitebark cone production is minimal"); *see also Servheen,* 672 F. Supp. 2d at 1119–20.

ecosystem.[169] In arguments before the court, the FWS attempted to justify the conclusion by citing the population growth in Yellowstone grizzlies, which occurred during years of whitebark pine decline and over the long term when whitebark pine production varied.[170]

The district court rejected FWS's arguments as irrational and unsupported by other scientific studies cited in the delisting rule.[171] According to the court, the FWS ignored scientific evidence that whitebark pine losses lead to grizzlies searching for replacement food sources in human-occupied areas, substantially increasing the risk of grizzly mortality.[172] Although grizzlies adapt to changing food conditions in the ecosystem, a loss of whitebark pine increases mortality.[173] Moreover, the delisting rule offered no scientific evidence that whitebark pine reserves in the eastern portion of the ecosystem could compensate for an overall decline in the food source.[174] On the contrary, the scientific record demonstrated that the effects of whitebark pine losses on grizzles were "uncertain,"[175] and thus could jeopardize grizzly survival.[176] Therefore, the court concluded that the FWS failed to offer evidence or a reasoned explanation for why whitebark pine declines would not affect Yellowstone grizzlies.[177]

The district court also ruled that the existing regulatory mechanisms protecting Yellowstone grizzlies were inadequate to maintain a recovered population.[178] The FWS had argued that the conservation strategy provided a "regulatory framework" with population requirements and habitat standards designed to ensure that the population remained at recovered status.[179] The FWS also pointed to USFS forest plans, NPS regulations, and state management regulations to demonstrate adequate existing regulatory mechanisms.[180]

The court rejected the FWS's determination that the non-binding, unenforceable conservation strategy could be considered a regulatory

169 72 Fed. Reg. at 14,929 (identifying the North Absaroka, Teton, and Washakie Wilderness Areas as places that would "provide a large reserve that will be minimally impacted" by mountain pine beetles even if whitebark pine in the western portion of the PCA decline catastrophically); *see also Servheen*, 672 F. Supp. 2d at 1119.

170 *See Servheen*, 672 F. Supp. 2d at 1120.

171 *Id.* at 1119–20.

172 *Id.* (stating that "much of the cited science directly contradicts the Service's conclusions").

173 *Id.*

174 *Id.* at 1119 ("[T]he Final Rule cites no science to indicate that remaining whitebark pines in a portion of the [distinct population segment] boundaries will compensate for other declines.")

175 72 Fed. Reg. 14,866, 14,929 (Mar. 29, 2007) (to be codified at 50 C.F.R. part 17); *see also Servheen*, 672 F. Supp. 2d at 1120.

176 *Servheen*, 672 F. Supp. 2d at 1126.

177 *Id.*

178 *Id.* at 1118.

179 72 Fed. Reg. at 14,922.

180 *See id.* at 14,922–34.

mechanism.[181] The terms of the conservation strategy provided no mechanisms for enforcing the population requirements, habitat standards, or monitoring protocols.[182] Similarly, the USFS forest plans and NPS regulations provided mere "guidelines" for conserving grizzly populations and habitat.[183] Because the forest plans and NPS regulations established no enforceable standards, the FWS could not rely on those management plans as adequate regulatory mechanisms to protect grizzlies.[184] Finally, the state management regulations and conservation laws provided unenforceable "guidelines" for mortality limits and habitat.[185] Therefore, the state grizzly protections, like the federal forest plans and NPS regulations, could not be considered adequate regulatory mechanisms.[186] Consequently, the district court granted the coalition's request to vacate and remand the final rule delisting Yellowstone grizzlies.[187]

B. Ninth Circuit Decision

The FWS appealed the district court's decision to vacate the rule delisting Yellowstone grizzlies.[188] On the first issue, the Ninth Circuit agreed with the district court that the FWS failed to provide a rational explanation for why the potential decline in whitebark pine would not threaten grizzlies.[189] In addition to the reasons given by the district court, the Ninth Circuit reasoned that the FWS could not rely on whitebark pine reserves in the eastern portion of the PCA to sustain Yellowstone grizzlies.[190] The delisting rule had defined the PCA as the minimal habitat necessary to maintain a recovered population;[191] therefore, the FWS could not claim that grizzlies would remain recovered even if their available food habitat were reduced.[192] The court also noted that the FWS could not rely on evidence of other populations of grizzlies, such as the Northern Continental Divide Ecosystem grizzlies, which continued to thrive, despite a drastic reduction in

181 *Servheen*, 672 F. Supp. 2d at 1115–16.

182 *Id.*

183 *Id.* at 1117–18.

184 *Id.* at 1117.

185 *Id.* at 1117–18.

186 *Id.* at 1118.

187 *Id.* at 1126–27.

188 Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015, 1023 (9th Cir. 2011).

189 *Id.* at 1020. The panel of the Ninth Circuit decided the case 2 to 1, with Judges Richard C. Tallman and Susan P. Graber in the majority. Judge Sidney R. Thomas dissented in part, arguing that the district court correctly concluded that the FWS provided an insufficient analysis of the adequate existing regulatory mechanisms. *Id.* at 1032–33 (Thomas, J., dissenting in part and concurring in part).

190 *Id.* at 1026–28.

191 FINAL CONSERVATION STRATEGY, *supra* note 26, at 16 (stating that the PCA contained "the minimum seasonal habitat components needed to support the recovered grizzly bear population").

192 *Servheen*, 665 F.3d at 1028 ("Having determined what is 'necessary,' the Service cannot reasonably rely on something less to be enough.")

available whitebark pine.[193] This argument proved unpersuasive to the court because the FWS had described the Yellowstone grizzlies as distinct from other grizzly populations due to the Yellowstone grizzlies' unique dependence on whitebark pine.[194] Therefore, the Ninth Circuit affirmed the district court's judgment in favor of the coalition and vacated the rule delisting the grizzlies.[195]

On the second issue, the Ninth Circuit reversed the district court's decision that the FWS delisting rule did not adequately analyze existing regulatory mechanisms for the conservation of grizzlies.[196] The court declined to address whether the conservation strategy by itself could be considered a regulatory mechanism,[197] but determined that the national forest plans and NPS regulations were adequate regulatory mechanisms to protect the species.[198] According to the court, all six national forests within the Greater Yellowstone Ecosystem[199] adopted forest plan amendments that incorporated the habitat standards described in the conservation strategy.[200] By requiring compliance with the habitat-based criteria on a forest-wide scale, the USFS's forest plans ensured that grizzly habitat would be protected in all national forests, both inside and outside of the PCA.[201] Moreover, the court noted that the USFS agreed to place Yellowstone grizzlies on the U.S. Department of Agriculture (USDA) list of sensitive wildlife species.[202] Designation as a sensitive species required the USFS to conduct biological evaluations prior to any project that could result in losses to the species.[203] Further, within the Yellowstone area, the USFS considered grizzlies to be a "species of concern," which required forest plans to include "additional provision[s] to accommodate" grizzlies and "provide adequate ecological conditions (i.e. habitats) to continue to provide for the needs of a recovered population."[204] The court concluded that the USFS forest plans

193 *Id.* at 1027.

194 Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,878 (Mar. 29, 2007) (to be codified at 50 C.F.R. part 17) (designating Yellowstone grizzlies as a distinct population segment and discussing their use of whitebark pine).

195 *Servheen*, 665 F.3d at 1032.

196 *Id.*

197 *Id.* at 1030–31 ("[W]e need not decide whether the Strategy itself, as a whole, constitutes a 'regulatory mechanism.'").

198 *Id.* at 1031.

199 The six forests are the Beaverhead, Bridger-Teton, Custer, Gallatin, Shoshone, and Targhee. *See* 72 Fed. Reg. at 14,923.

200 *Servheen*, 665 F.3d at 1031.

201 *Id.*

202 *See generally* U.S. DEP'T OF AGRIC., FOREST SERVICE MANUAL § 2676 (2009), *available at* http://www.fs.fed.us/im/directives/fsm/2600/2672.24b-2676.17c.doc (describing the USDA's management policies for grizzly bears and providing direction to agency employees on planning and resource management).

203 *Id.* § 2672.4–42 (setting out the objectives, standards, and procedures for biological evaluations).

204 72 Fed. Reg. at 14,923.

and treatment of grizzlies constituted adequate regulatory mechanisms for Yellowstone grizzly conservation.[205]

The NPS regulations adopted by Yellowstone and Grand Teton National Parks and the John D. Rockefeller Memorial Parkway provided additional evidence for the court to determine that adequate regulatory mechanisms existed to conserve the grizzly population.[206] The FWS delisting decision noted that the NPS incorporated the habitat-based criteria, population monitoring protocols, and nuisance bear standards of the conservation strategy into the superintendent's compendium—a legally enforceable set of regulations—for each NPS unit.[207] The land areas managed by the NPS within the ecosystem constituted a significant amount of grizzly habitat;[208] therefore, the FWS justifiably determined that the NPS regulations contributed to adequate regulatory mechanisms.[209] For both the USFS forest plans and the NPS regulations, the court noted that the agencies were legally bound to follow their own regulations, thus the forest plans and NPS regulations were legally enforceable.[210]

Therefore, the Ninth Circuit determined that adequate regulatory mechanisms were in place to protect the Yellowstone grizzlies after delisting.[211] The court was satisfied with the enforceability of the USFS forest plans and NPS regulations—both of which implemented the goals of the conservation strategy, which was a plan developed to manage a recovered population of Yellowstone grizzlies.[212] Yet, the Ninth Circuit ultimately upheld the district court's decision vacating the delisting determination because of the FWS's failure to explain why the potential loss of whitebark pine would not affect the species.[213]

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205 *Servheen*, 665 F.3d at 1031–32.

206 *See id.* at 1031 (discussing the incorporation of population standards into the Park Superintendents' Compendia for Grand Teton and Yellowstone National Parks); 72 Fed. Reg. at 14,875 (listing the Parkway as part of the Yellowstone Recovery Zone).

207 72 Fed. Reg. at 14,924; *see* John Cathcart-Rake, *The Friends of Yosemite Valley Saga: The Challenge of Addressing the Merced River's User Capacities*, 39 ENVTL. L. 833, 854 (2009) (Noting that the superintendent's compendium is "essentially a park-specific supplement to the Code of Federal Regulations" for each national park unit); *see also Servheen*, 665 F.3d at 1031 (stating that incorporation of standards into compendia gives those standards "federal regulatory force").

208 *See Servheen*, 665 F.3d at 1031. Together, the USFS and NPS managed 90% of the PCA land area. *Id.*

209 *Id.* at 1032.

210 *Id.* (citing Nat'l Ass'n of Home Builders v. Norton, 340 F.3d 835, 852 (9th Cir. 2003)). Although federal agencies are required to follow their own rules, there is no mechanism under the Administrative Procedure Act for citizen suits to force agencies to comply with those rules. *See infra* Part V.B.

211 *Servheen,* 665 F.3d at 1032.

212 *Id.*

213 *Id.* at 1030, 1032.

V. ASSESSING THE NINTH CIRCUIT'S ADEQUATE REGULATORY MECHANISMS ANALYSIS

The Ninth Circuit's analysis of Factor D, adequate existing regulatory mechanisms, was flawed in three respects. First, the court intentionally passed on an opportunity to interpret the minimum requirements of Factor D, and to clarify that non-binding agreements like the conservation strategy should not be included in future adequate regulatory mechanism analyses. Second, the court erred by concluding that the provisions regarding grizzlies in national forest plans and NPS regulations were legally enforceable. After *Norton v. Southern Utah Wilderness Alliance* (*SUWA*),[214] the monitoring goals and habitat guidelines contained in forest plans and superintendents' compendia of regulations are not enforceable;[215] therefore, the court should not have considered the forest plans and NPS regulations for the Yellowstone region as regulatory mechanisms to protect grizzlies. Third, the court's discussion of Factor D implicitly contradicted the ESA's policy of ensuring that species receive a minimum level of legally enforceable protections. Future delisting decisions under Factor D should focus on existing and enforceable state laws and regulations, ensuring that the states provide sufficient protections to prevent delisted species from reverting to threatened status.

A. Confusing the Meaning of "Existing Regulatory Mechanisms"

The Ninth Circuit began its analysis of the Greater Yellowstone Coalition's claims under Factor D by declining to address whether the conservation strategy itself could be considered an adequate regulatory mechanism.[216] "[W]e need not decide whether the Strategy itself, as a whole, constitutes a 'regulatory mechanism.'"[217] The court acknowledged that district courts in the Ninth Circuit have addressed the statutory language of Factor D,[218] but then proceeded to analyze the adequacy of the components of the conservation strategy without discussing the meaning of "existing regulatory mechanisms."[219] *Servheen*'s failure to specifically hold that "existing regulatory mechanisms" excluded non-binding conservation agreements could lead to confusion in the lower courts.

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214 542 U.S. 55 (2004).

215 U.S. FOREST SERV., FOREST PLAN AMENDMENT FOR GRIZZLY BEAR HABITAT CONSERVATION FOR THE GREATER YELLOWSTONE AREA NATIONAL FORESTS, RECORD OF DECISION (2006) [hereinafter FOREST PLAN AMENDMENT]; NAT'L PARK SERV., YELLOWSTONE NATIONAL PARK, SUPERINTENDENT'S COMPENDIUM (2010); *see* Michael C. Blumm & Sherry L. Bosse, Norton v. SUWA *and the Unraveling of Federal Public Land Planning*, 18 DUKE ENVTL. L. & POL'Y F. 105, 123 (2007).

216 *Servheen*, 665 F.3d at 1030–31.

217 *Id.*

218 *Id.* at 1030 (citing Or. Natural Res. Council v. Daley (*ONRC*), 6 F. Supp. 2d 1139, 1153–56 (D. Or. 1998)).

219 *Servheen*, 665 F.3d at 1030–31 (citing Tucson Herpetological Soc'y v. Salazar, 566 F.3d 870, 880 (9th Cir. 2009)) (noting that courts may proceed to address an agency's delisting decision after setting aside the portions of the decision that are erroneous).

This potential for confusion derives from the ESA's requirements for listing and delisting species. Section 4(a) enumerates five factors that federal agencies must consider, including Factor D, the adequacy of "existing regulatory mechanisms."[220] Federal agencies must list a species as threatened or endangered if any one factor threatens the existence of the species.[221] Conversely, the FWS may only delist a species if none of the five factors threaten the species.[222] In addition to the five factors, ESA section 4(b) requires federal agencies to take into account "efforts, if any, being made by any State . . .to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices."[223] The question the district courts have attempted to address is whether section 4(b) modifies Factor D to encompass conservation efforts that are not purely regulatory, or adds a sixth factor for consideration in listing and delisting decisions.[224]

In *Oregon Natural Resources Council v. Daley* (*ONRC*), the federal District Court of Oregon considered the National Marine Fisheries Service's (NMFS) decision not to list a coastal population of coho salmon under the ESA.[225] NMFS argued that a voluntary conservation agreement with the state of Oregon contributed to the agency's decision that sufficient protections for the species existed.[226] NMFS claimed that section 4(b) should be considered in the Factor D analysis, allowing NMFS to include conservation efforts of the states even though the conservation agreement was set to be implemented in the future and was not currently enforceable.[227] The district court concluded that the meaning of ESA section 4(a) (Factor D "existing regulatory mechanisms") was "precise and unambiguous."[228] Any mechanisms considered by NMFS must be presently existing[229] and legally enforceable.[230] The court consequently ruled that the voluntary conservation agreement should be "given no weight in the listing decision" because it relied on future actions and unenforceable provisions.[231]

220 Endangered Species Act of 1973, 16 U.S.C. § 1533(a)(1)(A)–(E) (2006).

221 50 C.F.R. § 424.11(c) (2011); *see* Kevin Cassidy, *Endangered Species' Slippery Slope Back to the States: Existing Regulatory Mechanisms and Ongoing Conservation Efforts Under the Endangered Species Act*, 32 ENVTL. L. 175, 188, 199–201 (2002).

222 *See* Philip Kline, *Grizzly Bear Blues: A Case Study of the Endangered Species Act's Delisting Process and Recovery Plan Requirements*, 31 ENVTL. L. 371, 383 (2001). After delisting, the ESA requires a five-year monitoring period to ensure that there is no decline in the species' status. 16 U.S.C. § 1533(g)(1) (2006); *see* Doremus & Pagel, *supra* note 163, at 1263.

223 16 U.S.C. § 1533(b)(1)(A) (2006).

224 *ONRC*, 6 F. Supp. 2d 1139, 1153 (D. Or. 1998).

225 *Id.* at 1142.

226 *Id.* at 1153.

227 *Id.*

228 *Id.* ("The statutory reference to 'existing regulatory mechanisms' in § 1533(a)(1)(D) is precise and unambiguous and, if standing alone, would preclude consideration of any future or voluntary conservation efforts, which, by definition, are not 'existing' or 'regulatory.'").

229 Fed'n of Fly Fishers v. Daley, 131 F. Supp. 2d 1158, 1166 (D. Or. 2000).

230 *ONRC*, 6 F. Supp. 2d at 1155.

231 *Id.* NMFS "may not rely on plans for future actions to reduce threats and protect a species as a basis for deciding that listing is not currently warranted. The NMFS may only consider

The federal Southern District of California reached the opposite result with respect to non-binding, voluntary conservation agreements in *Defenders of Wildlife v. Babbitt*.[232] In that case, the FWS justified its decision not to list the flat-tailed horned lizard as threatened in part based on a conservation agreement to protect the lizard's habitat on federal lands.[233] The court reasoned that the ESA "specifically requires FWS to consider *conservation efforts* taken by a state to protect species."[234] The court concluded that the conservation agreement was in effect; hence, it was not a proposal for future action, and the FWS properly considered the agreement in its decision not to list the species.[235]

The district courts of both Oregon and Montana rejected the Southern District of California's reasoning from *Defenders of Wildlife*, and instead followed *ONRC*.[236] In *Federation of Fly Fishers v. Daley*, the District Court of Oregon concluded that a conservation agreement to protect steelhead consisted of plans or proposals for future action and could not be considered an "existing regulatory mechanism."[237] Similarly, in *Servheen*, Judge Molloy refused to allow the FWS to include the Yellowstone grizzly conservation strategy in the analysis of existing regulatory mechanisms because the strategy contained only unenforceable provisions and proposals for future actions.[238]

The Ninth Circuit missed an opportunity to clarify this case law in the lower courts and interpret "existing regulatory mechanisms" to mean current, enforceable regulations. The District Court of Montana correctly concluded that the conservation strategy was not a binding agreement[239] on the parties because each signatory agency could withdraw from the conservation strategy without penalty.[240] Moreover, the strategy was not legally enforceable because agencies were not bound to follow the terms of the strategy.[241] Therefore, the conservation strategy should not have been

conservation efforts that are currently operational, not those promised to be implemented in the future." *Id.* at 1154.

232 No. 97-CV-2330 TW (LSP), 1999 WL 33537981 (S.D. Cal. June 14, 1999)(rev'd 258 F.3d 1138 (9th Cir. 2001).

233 *Id.* at ¶ 2.

234 *Id.* at ¶ 7 (emphasis added).

235 *Id.*

236 *See* Greater Yellowstone Coal. v. Servheen, 672 F. Supp. 2d 1105, 1114 (D. Mont. 2009); Fed'n of Fly Fishers v. Daley, 131 F. Supp. 2d 1158, 1166 (D. Or. 2000).

237 *Fed'n of Fly Fishers*, 131 F. Supp. 2d at 1166.

238 *Servheen*, 672 F. Supp. 2d at 1116. The Ninth Circuit stated that it "is reasonable to conceive of 'adequate' regulatory mechanisms as offering a recovered species something less than the stalwart protections of the ESA, but considerably more than no special protection at all." Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015, 1032 (9th Cir. 2011).

239 *Servheen*, 672 F. Supp. 2d at 1116 ("Because the Service admits that the Conservation Strategy is unenforceable, the Strategy was not properly considered in the Service's evaluation of existing regulatory mechanisms.").

240 *Id.*; *see* FINAL CONSERVATION STRATEGY, *supra* note 26, at 12.

241 *Servheen*, 672 F. Supp. 2d at 1116 ("The Conservation Strategy states that the various agencies are 'committed to' the Conservation Strategy. . . .However, the comments and responses in the Final Rule reveal that the Service cannot compel any of the agencies to live up to their commitments.").

considered a "regulatory mechanism."[242] By reversing the district court's decision, the Ninth Circuit left room for federal agencies to continue considering non-binding, voluntary conservation agreements in their analysis of ESA Factor D for species listing and delisting.

B. Misunderstanding the Enforceability of Forest Plans and NPS Regulations

The Ninth Circuit's analysis of existing regulatory mechanisms also erred by assuming that provisions addressing grizzly populations and habitat in the national forest plans and the NPS superintendents' compendia of regulations were legally enforceable.[243] In *Servheen*, the court cited *National Ass'n of Homebuilders*[244] for the proposition that federal agencies must follow their own rules.[245] Although this proposition reflects the law of the Ninth Circuit,[246] citizens or conservation groups have no cause of action to force the agencies to protect grizzlies, or even force the agencies to follow their own planning documents.[247] Since the forest plans and NPS regulations are not enforceable against the USFS or NPS, the court should not have considered their statements about grizzlies to be regulatory mechanisms.

In *Norton v. Southern Utah Wilderness Alliance*, the Supreme Court closed the door on citizen suits attempting to force federal agencies to follow established management plans.[248] Land use plans, such as forest plans, created under the National Forest Management Act (NFMA)[249] do not prescribe agency actions, but instead constitute mere goals or management directions that the agency may change in the future.[250] According to the Supreme Court, lawsuits against federal agencies for failing to follow management plan provisions require the plaintiff to identify discrete and specific actions that the agency must take.[251]

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242 *See ONRC*, 6 F. Supp. 2d 1139, 1155 (D. Or. 1998) (concluding that voluntary or future conservation efforts were not regulatory and could not be considered in the adequate regulatory mechanism analysis).

243 *See Servheen*, 665 F.3d at 1031 ("[T]he Forest and Park Services are legally bound to uphold key Strategy standards within the PCA").

244 340 F.3d 835 (9th Cir. 2003).

245 *Servheen*, 665 F.3d at 1031; *Nat'l Ass'n of Home Builders*, 340 F.3d at 852.

246 *See* Greater Yellowstone Coal. v. Lewis, 628 F.3d 1143, 1149 (9th Cir. 2010) (concluding that the National Forest Management Act requires USFS decisions to be consistent with the governing forest plan).

247 *SUWA*, 542 U.S. 55, 73 (2004).

248 *Id.* at 58–61 (noting that citizens brought suit under section 706 of the Administrative Procedure Act, 5 U.S.C §§ 551–59, 701–706, 1305, 3105, 3344, 4301, 5335, 5372, 7521 (2006)); *see* Blumm & Rose, *supra* note 215,109–10.

249 National Forest Management Act of 1976, 16 U.S.C. §§ 472a, 521b, 1600, 1611–1614 (2006) (amending the Forest and Rangeland Renewable Resources Planning Act of 1974, Pub. L. No. 93–378, 88 Stat. 476 (1974)).

250 *SUWA*, 542 U.S. at 69–72.

251 *Id.*

The national forest plans and NPS regulations at issue in *Servheen* contained only broad policy and management goals, not specific directives.[252] For example, the forest plan amendments adopted by the six national forests in the Greater Yellowstone Ecosystem contained management goals, standards, guidelines, and monitoring provisions for grizzly bears, but included no specific actions that the USFS should take to protect the species.[253] Similarly, the NPS regulations, which referenced the conservation strategy's grizzly management goals, failed to list specific actions that the NPS would take to conserve the species.[254] Therefore, under *SUWA*, the grizzly provisions in both management documents are unenforceable.

That the grizzly provisions contained in the national forest plans are not enforceable should not have come as a surprise to the District Court of Montana or the Ninth Circuit. In 2008, Judge Molloy ruled that the Interagency Grizzly Bear Guidelines, which were incorporated into the Flathead National Forest Plan, were unenforceable in a citizen suit by a conservation organization.[255] In *Swan View Coalition v. Barbouletos*, Judge Molloy, citing *SUWA*, concluded that the Flathead forest plan required no specific actions of the USFS.[256] The forest plan provisions at issue in *Servheen* were similar to those ruled unenforceable in *Swan View Coalition*.[257] Therefore, the Ninth Circuit should have affirmed Judge Molloy's conclusion that because the USFS provisions and NPS regulations addressing grizzly populations and habitat protection were unenforceable, they were not adequate regulatory mechanisms under the ESA.

C. Failing to Emphasize the ESA's Goal of Ensuring Legal Protection

By erroneously deciding that adequate regulatory mechanisms existed to protect Yellowstone grizzlies, the Ninth Circuit ignored the ESA's longstanding policy of providing legal assurances that species will not be threatened with extinction.[258] Through a "policy of institutionalized caution," the ESA requires agencies to preserve endangered species and to ensure the improvement of listed populations.[259] Contrary to this policy, the Ninth Circuit failed to analyze whether any legally enforceable mechanisms limited mortality of Yellowstone grizzlies, leaving the species' fate in the hands of a

252 *See* FOREST PLAN AMENDMENT, *supra* note 215, at 1–2, 4; U.S. NAT'L PARK SERV., *supra* note 215, at 13.

253 *See* FOREST PLAN AMENDMENT, *supra* note 215, at 4–7.

254 *See* YELLOWSTONE NATIONAL PARK SUPERINTENDANT'S COMPENDIUM, *supra* note 215, at 13.

255 Swan View Coal. v. Barbouletos, No. CV 06-73-M-DWM, 2008 WL 5682094 (D. Mont. June 13, 2008) *aff'd*, 348 Fed.App. 295 (9th Cir. (2009).

256 *Id.* at ¶ 24.

257 *See id.* at ¶ 2–3; FOREST PLAN AMENDMENT, *supra* note 215, at 4–7.

258 *Servheen*, 665 F.3d 1015, 1030–32 (9th Cir. 2011).

259 Ariz. Cattle Growers' Ass'n v. Salazar, 606 F.3d 1160, 1167 (9th Cir. 2010), *cert. denied*, U.S., 131 S.Ct. 1471 (2011).

voluntary, non-binding promise by the FWS and the states to maintain the population at over five hundred individuals.[260]

One of the most important ways that the courts have interpreted the policy of institutionalized caution is the requirement of legally binding protections for species.[261] Under section 7, if a federal agency plans to take action that might adversely affect a listed species, the agency must first demonstrate specific, certain-to-occur, and enforceable mitigation projects to compensate for the threats to the species.[262] In *National Wildlife Federation v. National Marine Fisheries Service*,[263] the district court rejected mitigation proposals for ESA-listed salmon and steelhead because the measures were not reasonably certain to occur.[264] The court examined whether the mitigation proposal could be enforced, the commitment of resources to the proposal, and the timeline for implementing the proposal.[265] Future goals for mitigation, including broad management plans or unspecified future actions do not satisfy the ESA's policy of ensuring the protection of listed species.[266] Section 4's requirements demonstrate that Congress intended the same policy of institutionalized caution to apply in determinations to delist a species.[267]

The delisting of Yellowstone grizzlies relied on the population remaining at the recovery goal of more than 500 grizzlies in the ecosystem.[268] Yet, the FWS could not identify any regulatory mechanisms that would ensure that the minimum population number of grizzlies would continue to

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260 *See Servheen*, 665 F.3d at 1033–35, 1036 (Thomas, J., dissenting in part and concurring in part).

261 *See, e.g.*, Tenn. Valley Auth. v. Hill, 437 U.S. 153, 174 (1978) (stating that under the ESA, "Congress intended endangered species to be afforded the highest of priorities"); Rock Creek Alliance v. U.S. Fish & Wildlife Serv., 663 F.3d 439, 443–44 (9th Cir. 2011) (approving a multifaceted mitigation plan for grizzly bears that included land acquisition for mitigation habitat as well as "management of road and trail access into bear habitat"); Selkirk Conservation Alliance v. Forsgren, 336 F.3d 944, 955–56 (9th Cir. 2003) (noting that the requirement for legally binding mitigation projects applies to all federal agencies and to conservation agreements signed by federal agencies and private parties); Sw. Ctr. for Biological Diversity v. U.S. Bureau of Reclamation, 143 F.3d 515, 524 (9th Cir. 1998) (concluding that an Army Corps of Engineers mitigation project to acquire adjacent replacement habitat ensured the survival of the endangered Southwestern Willow Flycatcher); Sierra Club v. Marsh, 816 F.2d 1376, 1386 (9th Cir. 1987) (finding Army Corps of Engineers found in violation of the ESA because it failed to acquire and preserve mitigation lands before allowing destruction or adverse modification of habitat); John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1264 (1993) (detailing the emergence of the scientific principle of "adaptive management" in the context of salmon recovery in the Columbia River Basin, and how such a principle could affect the management of other species listed under the Endangered Species Act).

262 Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 524 F.3d 917, 935–36 (9th Cir. 2007).

263 254 F. Supp. 2d 1196 (D.Or. 2003).

264 *Id.* at 1213.

265 *Id.*

266 *Id.*

267 *See* Cassidy, *supra* note 221, at 201.

268 *See* FINAL CONSERVATION STRATEGY, *supra* note 26, at 6–7.

be met.[269] If grizzly mortality increased in the future, and the population dropped to below 500, there would be no mechanism, other than re-listing to protect the population.[270] Although the Ninth Circuit recognized that re-listing a species was not sufficient protection under the ESA,[271] the court allowed the FWS to delist Yellowstone grizzlies without legal assurances that mortality would be limited and the population would not revert to threatened status.

D. Future Factor D Analyses and the Enforceability of State Laws

In future delisting decisions and judicial review of those decisions, the FWS and the courts should focus their Factor D attention on existing state laws and regulations. A state-focused analysis of adequate regulatory mechanisms fulfills the congressional intent of ensuring that states manage delisted species to avoid future threats.[272] State laws and regulations are particularly important for delisted species like grizzly bears, which the states intend to treat as game animals.[273] State hunting regulations, wildlife management capabilities, and conflict management policies represent important considerations for the protection of recently delisted species.[274] The Ninth Circuit's failure to address state management of grizzlies left the population subject to state laws and regulations that lacked mortality limits and allowed hunting of grizzlies within the primary conservation area.[275] Reviews of future delisting decisions by the courts should not only scrutinize the FWS's analysis of federal laws and regulations under Factor D, but also take into account the enforceability of state wildlife management programs and ensure that state policies actually provide existing regulatory mechanisms.

The legislative history of section 4 of the ESA demonstrates Congress's concern that states did not do enough to protect potentially listed species.[276] The original text of the ESA, as proposed in Congress, contained only four consideration factors; Factor D was added as a fifth because legislators perceived that state wildlife protections would not sufficiently protect non-listed species.[277] Congress intended federal agencies to consider whether

269 *See Servheen*, 665 F.3d 1015,1035 (9th Cir. 2011) (Thomas, J., dissenting in part and concurring in part).

270 *Id.*

271 *Id.* at 1029 ("First of all, we reject out of hand any suggestion that the future possibility of relisting a species can operate as a reasonable justification for delisting").

272 *See* Cassidy, *supra* note 221, at 201.

273 *Servheen*, 665 F.3d at 1035 (Thomas, J., dissenting in part and concurring in part).

274 *See, e.g.*, Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,926 (Mar. 29, 2007) (to be codified at 50 C.F.R. pt. 17).

275 *Servheen*, 665 F.3d at 1034–35 (Thomas, J., dissenting in part and concurring in part); *see* Answering Brief for Plaintiff-Appellee at 37–41, Greater Yellowstone Coal. v. Servheen, 665 F.3d 1015 (9th Cir. 2011), No. 09-36100, 2010 WL 5810058, at *37–39.

276 *See* Cassidy, *supra* note 221, at 196–201; H.R. REP. NO. 93–412, at 14 ("[S]tate law is not pre-empted, but is merely subject to the Federal 'floor' of regulations under the [ESA]").

277 *See* Cassidy, *supra* note 221, at 196.

state laws provided sufficient protections for species, emphasizing that the ESA established a "federal floor" to protect listed species.[278] States, therefore, must have regulatory mechanisms in place at the time of delisting capable of preventing future re-listing of the species.[279]

An emphasis on state laws and regulations in Factor D analyses is especially important because states have the primary responsibility for managing wildlife within their borders.[280] States regulate hunting of wildlife species, including the recently delisted gray wolves, which are managed as game animals in Montana and Idaho, including regulated hunts aimed at controlling the population's range.[281] Hunting of recently delisted populations has the potential to pose serious threats to the species' survival.[282] In *Defenders of Wildlife v. Hall*, the District Court of Montana analyzed whether the hunting and conservation regulations of Idaho, Montana, and Wyoming provided sufficient protections once the FWS delisted wolves in the northern Rockies.[283] The court took a hard look at Wyoming's wolf conservation measures, concluding that the state failed to assure the minimum population goals required by the FWS under the ESA.[284] Without the minimum population goals, the court noted, wolves would be hunted and subjected to "serious jeopardy."[285] Moreover, state laws governing human interactions with wildlife species affect species mortality, particularly defensive killings of animals on private property and in self-defense.[286] Consequently, state wildlife policies are the primary mechanisms for limiting mortality and ensuring the survival of recently delisted species.[287]

278 *See id.* at 196–201.

279 *See id.*

280 *See* State v. Fertterer, 841 P.2d 467, 471 (Mont. 1992) (overruled in part by State v. Gatts, 279 Mont. 42 (1996) (states serve as the trustees of wildlife, have a property interest in wild game, and have police power over wild game); Oliver A. Houck, *Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property to Protect Them Constitute "Takings"?*, 80 IOWA L. REV. 297, 311, n. 77 (1995) ("[T]he state has a special authority and obligation to ensure [wildlife's] perpetuation").

281 *See* Defenders of Wildlife v. Hall, 565 F. Supp. 2d 1160, 1165 (D. Mont. 2008); Edward A. Fitzgerald, Defenders of Wildlife v. Salazar: *Delisting the Children of the Night in the Northern Rocky Mountains*, 31 PUB. LAND & RESOURCES L. REV. 1, 10–11 (2010).

282 *Hall*, 565 F. Supp. 2d at 1175.

283 *Id.*

284 *Id.* at 1175.

285 *Id.* ("Wyoming's failure to firmly commit to managing to preserve at least 15 breeding pairs in the state, show the continued existence of the wolf in Wyoming and outside of the National Park Units is in serious jeopardy.").

286 *See* WYO. STAT. ANN. § 23–1–101(a)(xii)(A) (2006) (describing Wyoming law defining grizzlies as a trophy game animal and allowing hunting); MONT. CODE ANN. § 87–5–301 (allowing hunting of grizzlies); IDAHO CODE ANN. § 36–1107 [2002] (allowing killing of grizzlies that are harassing livestock); *see also* WYO. GAME & FISH DEP'T, WYOMING GRIZZLY BEAR MANAGEMENT PLAN (2002, as amended 2005); STATE OF IDAHO, YELLOWSTONE GRIZZLY BEAR MANAGEMENT PLAN (2002); MONT. DEP'T OF FISH, WILDLIFE, & PARKS, GRIZZLY BEAR MANAGEMENT PLAN FOR SOUTHWESTERN MONTANA (2002).

287 *See generally Hall*, 565 F. Supp. 2d at 1175 (holding that state laws are an "important aspect" of delisting species).

For Yellowstone grizzlies, the lack of legally enforceable mortality limits and the absence of insurance that the population would remain at recovered status made the state management policies of Idaho, Montana, and Wyoming patently inadequate to protect the delisted population.[288] In some instances, the grizzly management policies directly conflicted with the conservation strategy's goal of increasing grizzly range to ensure the survival of the population.[289] Wyoming's management plan allowed for hunting of grizzlies, and the state hunting regulations aimed to keep certain mountain ranges off-limits to grizzly habitat expansion.[290] Similarly, Montana and Idaho planned to manage grizzlies as game animals with hunting seasons, and specifically allowed landowners to kill grizzlies in defense of property or livestock.[291] As in *Hall*, the states provided no policies to limit mortality, and the FWS failed to explain why hunting regulations could adequately ensure the species' survival.[292]

The Ninth Circuit's majority failed to address the adequacy of state laws and regulations, focusing instead on the federal efforts of the FWS, USFS, and NPS.[293] Although federal laws are important considerations under Factor D, the FWS and courts should emphasize the primary wildlife managers—the states—in analyzing delisting decisions. Future judicial review of delisting decisions should scrutinize the determination by the FWS that adequate state laws and regulations exist to protect delisted species once the federal government removes ESA protections.

VI. CONCLUSION

The recent history of Yellowstone grizzlies contains an overwhelming theme of recovery and optimism for the future. From the brink of extinction in the early 1900s, the population of Yellowstone grizzlies grew to number over 600 in 2010, and occupy a habitat of over fourteen million acres within the Greater Yellowstone Ecosystem.[294] Biologists concluded that the Yellowstone population recovered to the point where it is no longer threatened, or in danger of becoming extinct.[295] Yellowstone grizzlies met the recovery goals set by the final conservation strategy for each year since

288 *See Servheen*, 665 F.3d 1015, 1033–36 (9th Cir. 2011) (Thomas, J., dissenting in part and concurring in part).

289 *See id.*

290 *Id.*

291 *Id.*

292 *See Hall*, 565 F. Supp. 2d at 1175; *Servheen*, 665 F.3d at 1035–36 (Thomas, J., dissenting in part and concurring in part).

293 *Servheen*, 665 F.3d at 1030–32, 1036. (Thomas, J., dissenting in part and concurring in part) Judge Thomas's dissent agreed with the district court, concluding that the FWS's analysis of state laws was insufficient because the FWS failed to explain how state laws actually limited mortality and ensured the continued recovery of grizzlies. *See id.*

294 Nat'l Park Serv., *Recovery and Conservation of Grizzly Bears in Yellowstone National Park and the Greater Yellowstone Area*, http://www.nps.gov/yell/naturescience/bearrecovery.htm (last visited July 15, 2012).

295 *See supra* note 158 and accompanying text.

2007, and the population continues to grow, with 101 new grizzly cubs observed in 2011.[296]

The protections of the ESA and the management policies implemented by federal and state agencies through the GBRP led to the successful recovery of the Yellowstone grizzly population.[297] As a threatened species, grizzlies received legal protections against human-caused mortality and habitat degradation.[298] The listing required federal and state agencies to take actions that maximized the chances for grizzly survival and allowed the population to expand into more of its historic range.[299] Coordinated efforts to protect the species also produced a wealth of scientific information that FWS used to develop the policies responsible for grizzly recovery.[300] With an ever-increasing knowledge of the ecological needs of the grizzlies, management will continue to improve, recognizing new policies to conserve the species and new threats to their survival.[301]

One of the greatest emerging threats to Yellowstone grizzly survival comes from the potential loss of whitebark pine.[302] Scientists determined that the future of whitebark pine in the Yellowstone ecosystem is "uncertain"[303]—environmental factors, including blister rust, mountain pine beetles, and climate change pose significant threats to the future production of whitebark pine cones and the continued recovery of the grizzly population that depends on the seeds for winter nutrition.[304] The Ninth Circuit correctly concluded that the FWS could not remove ESA protections from Yellowstone grizzlies without explaining the implications of a loss of whitebark pine for grizzly survival.[305]

The Ninth Circuit's decision in *Servheen* vacated the FWS's rule delisting Yellowstone grizzlies and remanded the rule to the FWS for further consideration.[306] As of this writing, Yellowstone grizzlies remain on the ESA list of threatened species and are managed by the FWS according to the GBRP and FWS regulations that governed the population since 2006.[307] Despite satisfying the recovery criteria, grizzlies will remain a threatened species until FWS promulgates a new rule that rationally explains the effects

296 *See* Nat'l Park Serv., *supra* note 294.

297 *See supra* notes 107–19 and accompanying text.

298 *See supra* notes 98–102 and accompanying text.

299 *See supra* notes 98–102, 135–38 and accompanying text.

300 *See supra* notes 106–07 and accompanying text.

301 *See generally* HALL, *supra* note 10 (describing citizens advisory groups as a new mechanism for grizzly conservation); Mattson & Reid, *supra* note 6, at 366–67 (providing a history of grizzly management based on advances in ecological knowledge of the population and habitat).

302 *See supra* notes 76–80 and accompanying text.

303 *See supra* note 175 and accompanying text.

304 Final Rule Removing Yellowstone Grizzly Bears From Federal List of Threatened and Endangered Wildlife, 72 Fed. Reg. 14,866, 14,928–30 (Mar. 29, 2007) (to be codified at 50 C.F.R. part 17).

305 *Servheen*, 665 F.3d 1015, 1030 (9th Cir. 2011).

306 *Id.* at 1032.

307 *Nat'l Park Serv.*, *supra* note 293.

of whitebark pine loss on the grizzlies.[308] Conceivably, this explanation will require new scientific studies, and considerable time to prepare.[309]

Unfortunately, when the FWS promulgates a new rule delisting Yellowstone grizzlies, the FWS will have little incentive to change the Factor D analysis of existing regulatory mechanisms. The Ninth Circuit's endorsement of the FWS's analysis focused on USFS forest plans and the NPS regulations to justify adequate existing regulatory mechanisms for the protection of grizzlies.[310] The court missed an opportunity to clarify that non-binding, voluntary conservation agreements, like the final conservation strategy for Yellowstone grizzlies, cannot satisfy section 4's requirement of existing regulatory mechanisms.[311] Moreover, the Ninth Circuit's analysis of whether the forest plans and NPS regulations contributed to enforceable regulatory mechanisms was flawed in light of the Supreme Court's decision in *SUWA*.[312] By allowing the FWS to justify delisting grizzlies without legally enforceable mortality limits, the Ninth Circuit implicitly contradicted the ESA's policy of ensuring the continued recovery of species.[313]

Finally, in any future delisting rule for Yellowstone grizzlies, the FWS should analyze and emphasize state laws and regulations for managing grizzly populations.[314] Congress adopted Factor D in order to force the FWS to consider whether states had sufficient enforceable policies to keep the delisted species from reverting to listed status.[315] The current grizzly management policies of Idaho, Montana, and Wyoming cannot be considered adequate for the continued protection of the species because the states offer no legally enforceable mortality limits, manage grizzlies as game animals for hunting, and limit the expansion of the species' range.[316] The FWS's delisting rule, and any future judicial review of the rule, should focus attention on whether the states actually provide adequate regulatory mechanisms for the continued recovery of grizzlies.

308 *Id.*

309 In April 2012, the FWS announced that Yellowstone grizzlies will remain on the threatened species list until 2014. In the interim, the FWS will gather more evidence that the population will not decline once delisted. *See* Matthew Brown, *Yellowstone Grizzly Bears Will Remain Threatened Species Through 2014*, MISSOULIAN, Apr. 20, 2012, at B1.

310 *See supra* notes 196–205 and accompanying text.

311 *See supra* notes 216–42 and accompanying text.

312 *See supra* notes 243–56 and accompanying text.

313 *See supra* notes 258–70 and accompanying text.

314 *See supra* notes 272–93 and accompanying text.

315 *See supra* notes 276–79 and accompanying text.

316 *See supra* notes 288–92 and accompanying text.