

PROTECTING PLANTS UNDER THE EXISTING ENDANGERED SPECIES ACT

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Plant species get little protection under existing environmental laws and are vastly underrepresented in the existing environmental law literature. Plants provide the foundations for virtually all ecosystems and provide humans with food, oxygen, and many medications, but plant diversity faces escalating threats from climate change and other human impacts. Protecting plants is essential to protecting life as we know it. This article makes the case for improved protection for plants and examines an approach for providing this increased protection under the existing Endangered Species Act.

The Endangered Species Act does not protect threatened and endangered plants on private land, and it provides only very limited protection for threatened and endangered plants on public land. Although Congress is unlikely to change the Act in the near term, executive agencies have the flexibility to increase plant protection through Section 7 in a legally defensible and politically acceptable way. Section 7 of the Act requires that federal agencies consult with the regulatory agencies who administer the Act to ensure that their actions will not push threatened and endangered species into extinction. This provision could provide meaningful protection for plant species, but the regulatory agencies have not yet capitalized on the plant protections available under Section 7 of the Act. This approach builds on emerging environmental law efforts to improve conservation under federal environmental laws without amending those laws. Altering administration of the Act to improve plant protection will benefit both the plants themselves and society more broadly while better accomplishing the goals of the ESA.

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INTRODUCTION

The Sierra Nevada's towering redwoods and fields of flowers stir awe and wonder. These plants inspired the founders of the Sierra Club and invigorated the nascent environmental movement in the early 20th century.¹ But despite the role of plants in early environmentalism and the long-standing public value of plant species,² they have found little protection under U.S. environmental laws. In particular, endangered and threatened plants receive less attention, less funding, and less protection than their animal counterparts.³ The best estimates suggest that roughly one-third of the 18,804 estimated native U.S. plant species face serious extinction risk,⁴ but only 11% (93 as of September 24, 2020)⁵ are protected under the Endangered Species Act ("ESA" or "Act"),⁶ a far lower

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1. See *The John Muir Exhibit*, SIERRA CLUB, <https://perma.cc/T64F-J2XL>; see also JOHN MUIR, *THE YOSEMITE* 94 (2003) ("Yosemite was all one glorious flower garden before plows and scythes and trampling, biting horses came to make its wide open spaces look like farmers' pasture fields."). Note that John Muir's writings reflect bigotry and racism; the environmental movement continues to grapple with his complicated legacy. Compare Michael Brune, *Pulling Down our Monuments*, SIERRA CLUB (July 22, 2020), <https://perma.cc/ZX8R-2FLE>, with Donald E. Worster, *John Muir Biographer: He Was No White Supremacist*, CAL. SUN (July 30, 2020), <https://perma.cc/FNF8-8D5J>.
 2. See Truman P. Young, *Restoration Ecology and Conservation Biology*, 92 *BIOLOGICAL CONSERVATION* 73, 76 (2000) (noting a "bias in funding by conservation organizations, but not in the public opinion of species values, which is more evenly distributed among taxa, including plants").
 3. See generally Faith Campbell, *Legal Protection of Plants in the United States*, 6 *PACE ENV'T L. REV.* 1 (1988); see also George Cameron Coggins, *The Greening of American Law?: The Recent Evolution of Federal Law for Preserving Floral Diversity*, 27 *NAT. RES. J.* 247, 248 n.3 (1987) (discussing the lack of public recognition of threats to plant species).
 4. Vivian Negrón-Ortiz, *Pattern of Expenditures for Plant Conservation Under the Endangered Species Act*, 171 *BIOLOGICAL CONSERVATION* 36, 37 (2014).
 5. *Id.*; *ECOS: Environmental Conservation Online System, Listed Species Summary*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/V6X8-9BT5>.
 6. 16 U.S.C. § 1538(a)(1)–(2).

percentage than for animal species.⁷ Plants face longer delays than other species before being listed as threatened or endangered under the Act, suggesting agencies assign them lower priority when listing.⁸ Although plant species make up 56% of species listed under the Act,⁹ they receive minimal funding: plants received less than 4% of funding for species recovery and 2% of overall life science research funding in 2011.¹⁰ Plants are much cheaper to protect than animal species,¹¹ but this does not fully explain the funding discrepancy. Once listed, plants are less likely to receive resources, less likely to be protected under the Act, and less likely to recover than species of other taxonomic groups. Federal agencies have comparatively very few botany specialists among their scientific staff.¹² Plants make up less than 16% of species that have recovered and been delisted under the ESA,¹³ and at any time, listed “[f]ish, birds, and mammals [are] less likely to be declining than . . . plants.”¹⁴ Among species listed under the Act, plants are slightly less likely to have habitat designated for protection than other taxa,¹⁵ and listed plants’ populations are more poorly monitored than other species.¹⁶ Even the environmental law literature largely overlooks plant

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7. See Mark W. Schwartz, *The Performance of the Endangered Species Act*, 39 ANN. REV. ECOLOGY, EVOLUTION, & SEMANTICS 279, 282 (2008) (noting that “[l]isting action of plants and invertebrates is considerably less thorough [than for vertebrates]”).
 8. See Emily E. Puckett, Dylan C. Kesler & D. Noah Greenwald, *Taxa, Petitioning Agency, and Lawsuits Affect Time Spent Awaiting Listing Under the U.S. Endangered Species Act*, 201 BIOLOGICAL CONSERVATION 220, 227 (2016).
 9. See ECOS, *Listed Species Summary*, *supra* note 5.
 10. See Kayri Havens, Andrea T. Kramer & Edward O. Guerrant Jr., *Getting Plant Conservation Right (or Not): The Case of the United States*, 175 INT’L J. PLANT SCI. 3, 8 (2013); see also Negrón-Ortiz, *supra* note 4, at 41.
 11. Negrón-Ortiz, *supra* note 4, at 36 (noting that “the cost estimated to recover a plant species average much less than a vertebrate species”); see also Elizabeth Robson Gordon et al., *Relative Costs of Conserving Threatened Species Across Taxonomic Groups*, 34 CONSERVATION BIOLOGY 276, 276 (2020) (finding that “mammals cost 8-26 times more on average to conserve than plants. . . . On average, bird species cost 5-30 times more to conserve than plants”).
 12. Campbell, *supra* note 3, at 16.
 13. ECOS, *Delisted Species*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/9Y6E-JQGL> (reporting 11 plant species as being delisted for reasons of recovery out of a total of 70 species).
 14. Schwartz, *supra* note 7, at 291.
 15. ECOS, *USFWS Threatened & Endangered Species Active Critical Habitat Report*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/PM7F-VYXJ> (reporting critical habitat has been listed for 471 of the 934 listed plant species (50.4%) and for 389 of the 703 listed animal species (55.3%)); see also ECOS, *FWS-Listed U.S. Species by Taxonomic Group*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/9A37-B3CT> (reporting total number of species listings by taxonomic grouping).
 16. Katherine E. Gibbs & David J. Currie, *Protecting Endangered Species: Do the Main Legislative Tools Work?* 7 PLOS ONE e53730, May 2012, at 4.

protection, with very few articles focusing on plant protection since the passage of the ESA. Science provides no justification for lesser protection for plants.¹⁷

While this state of affairs results in part from less attention paid to plants by the listing agencies, a more fundamental problem is that the Act itself offers less protection to plants. For example, the Act's powerful "take" prohibitions prevent actions that "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect"¹⁸ fish and wildlife. This is the heart of the Act's restrictions on private actions affecting protected species. There is no similar prohibition on actions that take protected plant species. Likewise, under their current interpretations of the Act's mandates, federal agencies do not complete Incidental Take Statements ("ITSs") for plants.¹⁹ Failing to require ITSs for federal actions that impact plants eliminates both monitoring and procedural safeguards and seriously undermines the structure of the Act's primary protection for plants.²⁰ This problem has gone unexamined in the environmental law literature.

In light of current suboptimal levels of plant protection, this article reexamines the text and purpose of the Act and finds that, under the Act as written, federal agencies should complete ITSs for plants. Such a change would provide more comprehensive protection for plants, better fit the text and purpose of the Act, and largely avoid private property arguments against broader Act enforcement.²¹ This approach builds on the emerging approach within the environmental law community of finding opportunities to improve conservation under federal environmental laws without amending those laws, in light of Congress's reticence to change both foundational environmental legal structures generally and the ESA in particular.²² As one commenter argues, "[w]hile expansive legal reform is unlikely to occur soon, there is untapped potential in existing laws to address environmental change, both by leveraging adaptive and transformative capacities within the law itself to enhance social-ecological resilience and by

17. NAT'L RSCH. COUNCIL, SCIENCE AND THE ENDANGERED SPECIES ACT 9 (1995) ("The biological differences between animals and plants . . . offer no scientific reason for lesser protection of plants.").

18. See 16 U.S.C. §§ 1532(19), 1538(a)(1)–(2).

19. See *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1143 (9th Cir. 2016).

20. See *id.*

21. See *infra* Part III.

22. See, e.g., Melinda H. Benson, *Intelligent Tinkering: The Endangered Species Act and Resilience*, 17 *ECOLOGY & SOC'Y* 28, 28 (2012); Melinda H. Benson & Ahjond S. Garmestani, *Embracing Panarchy, Building Resilience and Integrating Adaptive Management Through a Rebirth of the National Environmental Policy Act*, 92.5 *J. ENV'T MGMT.* 1420, 1426 (2011); Hannah Gosnell et al., *Finding Flexibility in Section 7 of the Endangered Species Act Through Adaptive Governance*, in *PRACTICAL PANARCHY FOR ADAPTIVE WATER GOVERNANCE* 183, 194 (Barbara Cosens & Lance Gunderson eds., 2018); Karrigan Bork, *An Evolutionary Theory of Administrative Law*, 72 *SMU L. REV.* 81, 85–86 (2019).

using those laws to allow social-ecological systems to adapt and transform.”²³ Finding flexibility in the existing ESA offers an opportunity to improve conservation soon and in a realistic way.

This need to improve plant conservation is particularly urgent given the emerging realities of climate change. The vast majority of ecological processes have already been altered by climate change²⁴ through impacts on precipitation, temperature, seasonal patterns, humidity, soil moisture, and streamflows.²⁵ Temperature changes alone are expected to drive ecosystems away from the equator at the rate of nearly one-quarter mile per year, every year—but plants do not migrate.²⁶ Consequently, climate change is likely to result in the local extinction and replacement of many plant species. Detailed analysis of protected areas in Mexico, the United States, and Canada suggests that most protected areas will see vegetation composition changes of 25–62% in the next sixty-five years.²⁷

Many plant and animal species will require constant management to survive. This is already true of threatened and endangered plants: 85% of plant species listed as threatened or endangered under the ESA qualify as conservation-reliant,²⁸ meaning they cannot survive absent ongoing intervention.²⁹ Worldwide, within three decades, two-thirds of species will be chased out of their existing habitat; they must migrate or be moved to survive.³⁰ In light of these looming challenges, improving plant protection is a pressing problem. Better protecting plant species now will improve plant population levels and increase the odds that society will be able to save threatened and endangered plants over the next 100 years.

This article makes the case for increased plant protection under Section 7 of the ESA, proceeding in three Parts. Part I reviews the primary arguments for plant protection, gives an overview of existing ESA protections for plants, and concludes that increased protection is necessary. Part II takes a deeper dive into

23. Ahjond Garmestani et al., *Untapped Capacity for Resilience in Environmental Law*, 116 PROC. NAT'L ACAD. SCI. 19899, 19899 (2019).

24. See Brett R. Scheffers et al., *The Broad Footprint of Climate Change from Genes to Biomes to People*, 354 SCIENCE 719, 719 (2016).

25. See Donald A. Falk et al., *Scaling Ecological Resilience*, 7 FRONTIERS ECOLOGY & EVOLUTION 275, 275 (2019).

26. See Scott R. Loarie et al., *The Velocity of Climate Change*, 462 NATURE 1052, 1053 (2009).

27. See Lisa Holsinger et al., *Climate Change Likely to Reshape Vegetation in North America's Largest Protected Areas*, CONSERVATION SCI. & PRAC., 2019, at 9.

28. See J. Michael Scott et al., *Conservation-Reliant Species and the Future of Conservation*, 3 CONSERVATION LETTERS 91, 94 (2010).

29. See D.J. Rohlf et al., *Conservation-Reliant Species: Toward a Biology-Based Definition*, 64 BIOSCIENCE 601, 601 (2014). See generally Sean M. Kammer, *No-Analogue Future: Challenges for the Laws of Nature in a World Without Precedent*, 42 VT. L. REV. 227 (2017).

30. See Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. ON REG. 171, 181 (2010).

the Act's purpose, text, and structure to show the many roles that ITs play and explains how current interpretations of the Act undermine the protection Congress intended to give plants when writing the Act. Part III addresses challenges to this approach from existing United States Fish and Wildlife Service ("FWS") and Ninth Circuit interpretations of the Act, and then examines the text and purposes of the Act and finds that the Act could be read to support plant ITs. The article concludes that agencies should improve the protection of plants under the Act by changing their regulations to require plant ITs.

I. PROTECTING PLANTS: RATIONALE AND CURRENT APPROACH

A. *Why Protect Plants?*

Economic, ecological, and ethical considerations support plant protection.³¹ Society traditionally protects resources that are useful for human purposes.³² This anthropocentric perspective calls for protection of plants, because plants provide significant benefits to society.³³ One of these benefits is the preservation of genetic diversity for the development of pharmaceuticals, chemicals, food, and other industries.³⁴ While the exact numbers are difficult to determine, an estimated 50,000 species of plants are used in medicine.³⁵ For example, of all anti-tumor and anti-infection drugs currently on the market or in clinical trials, 60% come from natural origins,³⁶ including plants, as exemplified by the contribution of yew trees (*Taxus spp.*) to the suite of anti-cancer and chemotherapy drugs.³⁷ After research revealed that some plant compounds offered anti-cancer effects, the U.S. National Cancer Institute ("NCI") began a wide-ranging program in 1960 to find plants that would aid in the fight against cancer.³⁸ U.S. Department of Agriculture employees, working on behalf of the NCI, collected the bark of the pacific yew, and researchers discovered that the leaves and bark of the plant contained a new drug, Taxol, with anti-cancer effects.³⁹ Taxol is currently used in the treatment of breast cancer, ovarian cancer, and non-small

31. See Coggins, *supra* note 3, at 253–57.

32. See *id.*

33. See *id.*

34. See *id.*

35. See FOOD & AGRIC. ORG. INTER-DEPARTMENTAL WORKING GRP. ON BIOLOGICAL DIVERSITY FOR FOOD & AGRIC., IMPACT OF CULTIVATION AND GATHERING OF MEDICINAL PLANTS ON BIODIVERSITY: GLOBAL TRENDS AND ISSUES 2 (2002), <https://perma.cc/5UYP-FQMJ>.

36. Stela Maris Kuze Rates, *Plants as Source of Drugs*, 39 TOXICON 603, 603 (2001).

37. See *id.* at 606.

38. Gordon M. Cragg & David J. Newman, *Plants as a Source of Anti-Cancer Agents*, 100 J. ETHNOPHARMACOLOGY 72, 72 (2005).

39. See *id.* at 74.

cell lung cancer.⁴⁰ As of 2005, another twenty-three drugs in the same family were in preclinical development as cancer drugs, and Taxol was receiving attention for treatment of multiple sclerosis, psoriasis and rheumatoid arthritis.⁴¹

Rare plants also provide the possibility of strengthening human food supplies in this era of climate change. Consider the Nevada orcytes, *Oryctes nevadensis*, a rare California plant that numbers less than 1,000 individuals at last count.⁴² This nondescript herb, less than eight inches in height and sporting dull purple flowers, is a distant cousin of “potato, pepper, tomato, eggplant, tobacco, and Petunia plants,” and so may be able to provide genes to those species that could improve their drought resistance or other desirable properties.⁴³ Its ability to tolerate dry conditions and poorer soils could extend the productivity of species already under widespread cultivation.⁴⁴ Similarly, while domesticated wheat and other grain crops suffer from eyespot, a fungal disease that can reduce yields by 40%,⁴⁵ some wild grass species have genes that confer resistance to the fungus.⁴⁶ Crossbreeding allows scientists to transfer the genes from the wild grasses to wheat, producing the major commercial strain of eyespot resistant wheat.⁴⁷ Without the wild grass genes, plant breeders would be hard-pressed to provide effective protection against eyespot. Societal investment in rare plant protection pays off in innovations that benefit human society.

From an ecological perspective, plants require protection because of the role they play in complicated ecosystems, their photosynthetic properties, their production of oxygen, and their contribution to biodiversity.⁴⁸ Many of these roles benefit humans as well—like nearly all non-plants, humans need the energy plants secure from the sun. Humans also require the oxygen, which plants create. Many different kinds of plants produce these ecosystem services, but biodiversity is necessary to allow our planet to adapt to changing circumstances, including those driven by climate change.⁴⁹ As ecologists have emphasized,

40. *Id.*

41. *Id.*

42. Kent E. Holsinger & L.D. Gottlieb, *Conservation of Rare and Endangered Plants: Principles and Prospects*, in GENETICS AND CONSERVATION OF RARE PLANTS 195, 197 (Donald A. Falk & Kent E. Holsinger eds., 1991).

43. *Id.* at 198.

44. *Id.*

45. Nina Meyer et al., *Diagnostic Value of Molecular Markers Linked to the Eyespot Resistance Gene Pch1 in Wheat*, 177 EUPHYTICA 267, 267 (2011).

46. G. Doussinault et al., *Transfer of a Dominant Gene for Resistance to Eyespot Disease from a Wild Grass to Hexaploid Wheat*, 303 NATURE 698, 698 (1983).

47. Veronika Dumasová et al., *Eyespot Resistance Gene Pch1 and Methods of Study of Its Effectiveness in Wheat Cultivars*, 51 CZECH J. GENETICS & PLANT BREEDING 166, 166–67 (2015).

48. Coggins, *supra* note 3, at 252–53.

49. *See id.*

“[p]lants are not optional; they are essential to life and central to the future of human well-being.”⁵⁰

Considering the ecological perspective more broadly, plants play a central role in the structure and function of ecosystems, which support charismatic organisms that enjoy broader legislative and public support.⁵¹ Wildlife require the food, cover, nesting areas, and other resources plants provide.⁵² Plants make up the vast majority of the living biomass and thus anchor the food web.⁵³ When restoration ecologists try to resurrect troubled ecosystems, they begin by reestablishing key plant life within these ecosystems: “Most restoration projects concentrate on establishing a basic suite of plant species, and often . . . let the animals and ‘minor’ plant species fend for themselves.”⁵⁴ This approach of focusing on plant species makes sense, as “a single plant may support as many as fifteen to twenty different species, including bacteria, fungi, insects, and other plants and animals.”⁵⁵ This all means that plant extinctions have an outsized effect on ecosystems, resulting in a cascade of insect, bird, and other animal extinctions.⁵⁶ Successful conservation of all species starts with successful conservation of plants.

Finally, many commenters argue that there is a moral obligation to protect species because of their inherent right to exist, without regard for plants’ utility for humans.⁵⁷ Motivation for this position may be based on the inherent value

50. Havens, *supra* note 10, at 10.

51. For example, marbled murrelet, a charismatic seabird, requires nesting habitat in old growth forests near areas with high marine primary productivity, as measured by summer chlorophyll levels. Carolyn B. Meyer, Sherri L. Miller & C. John Ralph, *Multi-Scale Landscape and Seascape Patterns Associated with Marbled Murrelet Nesting Areas on the U.S. West Coast*, 17 *LANDSCAPE ECOLOGY* 95, 96 (2002). Thus, marbled murrelets require a particular form of terrestrial ecosystem, dominated by mature trees, and a particular type of marine ecosystem, with high numbers of plants or other photosynthetic organisms. *Id.*

52. *Id.*

53. Young, *supra* note 2, at 76.

54. Young, *supra* note 2, at 76; see also Lauchlan H. Fraser et al., *A Call for Applying Trophic Structure in Ecological Restoration*, 23 *RESTORATION ECOLOGY* 503, 503 (2015) (“Ecological restoration projects have traditionally focused on vegetation as both a means (seeding, planting, and substrate amendments) and ends (success based upon primary productivity and vegetation diversity).”).

55. George C. Coggins & Anne F. Harris, *The Greening of American Law?: The Recent Evolution of Federal Law for Preserving Floral Diversity*, 27 *NAT. RES. J.* 247, 252 (1987).

56. See SARA F. OLDFIELD ET AL., *SEEDS OF RESTORATION SUCCESS* 41 (2019) (“The loss of individual [plant] species may potentially trigger broader ecological collapse.”).

57. Kevin E. Regan, *The Need for a Comprehensive Approach to Protecting Rare Plants: Florida as a Case Study*, 44 *NAT. RES. J.* 125, 126 (2004).

of plant species,⁵⁸ or on religious beliefs about social obligations to protect nature, among other bases.⁵⁹

Plants thus may be valued for their usefulness to humans, their indispensable place in ecosystem function, or for their own sake. The Endangered Species Act itself appears to value plants for the first two reasons: the Act recognizes that “plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.”⁶⁰ Despite these good reasons for plant conservation, plants have been treated as a second-class category of species. They are often overlooked in environmental protection conversations,⁶¹ and many protections they receive are undermined by the existing structure of the legal systems governing them.⁶² To combat these challenges, we must first ask: how did the American legal system come to systematically under-protect plant species?

B. Historical Influences on ESA Plant Protections

Some of the bias against plant conservation stems from their traditional treatment under the common law. Property law has long distinguished between plants and other wildlife. A wild animal located on private property generally does not fall under the property holder’s ownership merely because of its physical location.⁶³ Historically, gaining a possessory interest in a wild animal required it to be “captured” and controlled,⁶⁴ as articulated in the classic case *Pierson v. Post*.⁶⁵ Wildlife in its wild state belongs, at least in the ownership sense of access, to the sovereigns, both state and federal.⁶⁶ Sovereign ownership of wildlife flows from Roman legal doctrine through English common law to early American law,⁶⁷ perhaps best encapsulated in the famous case *Geer v. State*

58. Holmes Rolston III, *In Situ and Ex Situ Conservation: Philosophical and Ethical Concerns, in EX SITU PLANT CONSERVATION: SUPPORTING SPECIES SURVIVAL IN THE WILD* 21, 24 (Edward O. Guerrant Jr., Kathy Havens & Mike Maunder eds., 2004) (“The plant . . . is valuable itself. . . . That is, such life is intrinsically valuable.”).

59. Mitch Hescoc, *EEN Supports the Reforestation Act of 2019*, EVANGELICAL ENV’T NETWORK (Dec. 19, 2019), <https://perma.cc/6VE2-6N5F> (“Our National Forest System is a beautiful gift from God.”).

60. 16 U.S.C. § 1531(a)(3).

61. See William Allen, *Plant Blindness*, 53 BIOSCIENCE 926, 926 (2003); James H. Wandersee & Elisabeth E. Schussler, *Preventing Plant Blindness*, 61 AM. BIOLOGY TEACHER 82, 82 (1999).

62. See Regan, *supra* note 57, at 126.

63. See *Pierson v. Post*, 3 Cai. R. 175 (N.Y. Sup. Ct. 1805).

64. *Id.* at 177.

65. See *id.* at 177–79.

66. Michael C. Blumm & Aurora Paulsen, *The Public Trust in Wildlife*, 2013 UTAH L. REV. 1437, 1439–40 (2013).

67. *Id.*

of Connecticut,⁶⁸ which affirmed the doctrine in the United States. “[S]tate ownership of wildlife in a sovereign capacity is overwhelmingly the majority view.”⁶⁹ This provides both ample legal support for, and a long tradition of, state protection of wildlife through legislation, from hunting and fishing restrictions to the ESA itself.⁷⁰

Plants have never fallen under the sovereign ownership doctrine. In contrast, plants were considered attached to (and therefore part of) the property rights that run with the land,⁷¹ just as timber, minerals, and crops belong to the landowner.⁷² This seems to stem from the rooted nature of plants; immobile animals like oysters and mussels face similar treatment.⁷³ Regardless, this approach gives private property owners an interest in plants not generally found with wildlife, which makes protecting plants a much more fraught exercise. Plant protection on private land may interfere with private property rights and raise constitutional concerns.⁷⁴ These concerns were front and center in the legislative development of the ESA.

President Nixon signed the Endangered Species Act of 1973 in the midst of growing social awareness that human activities were having disastrous impacts on the environment.⁷⁵ In the 1960s and 70s, the public and the government were rapidly realizing that Earth is not a planet of infinite resources and that the states did not have adequate motivation to protect the natural resources within their borders.⁷⁶ The legislature passed the ESA with bipartisan support, as Congress recognized that “various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation.”⁷⁷ The legislative findings and declarations reflect this cultural and ecological setting.⁷⁸ In *Tennessee Valley Authority v. Hill*,⁷⁹ the Supreme Court recognized the legislature’s dedication to species protection, finding that “[t]he plain intent of Congress in enacting this statute was to halt and reverse the trend towards species extinction, whatever the cost.”⁸⁰

68. See 161 U.S. 519, 534–35 (1896).

69. Blumm & Paulsen, *supra* note 66, at 1451.

70. See Robert L. Fischman et al., *State Imperiled Species Legislation*, 48 ENV'T L. 81, 81 (2018).

71. *Id.* at 95.

72. *Id.*

73. Linda McMahan, *Legal Protection for Rare Plants*, 29 AM. U.L. REV. 515, 526 n.54 (1980).

74. See Fischman et al., *supra* note 70, at 93; see also AM. BAR ASS'N, PRINCIPLES OF CONSTITUTIONAL ENVIRONMENTAL LAW 259 (James R. May ed., 2011).

75. See Shannon Petersen, *Congress and Charismatic Megafauna: A Legislative History of the Endangered Species Act*, 29 ENV'T L. 463, 472–74 (1999).

76. See *id.* at 470.

77. 16 U.S.C. § 1531(a).

78. See *id.*

79. 437 U.S. 153 (1978).

80. *Id.* at 184.

Congress included plants in the ESA's protections beginning in 1973. Congress implemented the ESA, in part, to comply with the United States' treaty obligation under the Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES"), the preeminent multilateral treaty on species protection.⁸¹ CITES itself covered plants, and for the ESA to adequately implement CITES, it needed some protection for plant species.⁸² While "early versions of the ESA included plants in the general takings prohibition,"⁸³ this changed amid the political wranglings of the ESA's passage. As Dr. Faith Campbell makes clear in her definitive history of the ESA's plant protection provisions,⁸⁴ Congress gave the goal of appropriate plant protection a great deal of consideration. The Report from the House Committee on Merchant Marine and Fisheries noted that synthetic birth control drugs were first discovered in plants, before being synthesized,⁸⁵ and asked,

Who knows, or can say, what potential cures for cancer or other scourges, present or future, may lie locked up in the structures of plants which may yet be undiscovered, much less analyzed? More to the point, who is prepared to risk those potential cures by eliminating those plants for all time? Sheer self-interest impels us to be cautious.⁸⁶

The Committee noted that "[t]he principal areas of discussion during the hearings and in markup of the legislation centered on the proper role of the state and federal governments with regard to endangered species programs, and the protection of plants."⁸⁷ Continuing this conflict, Rep. Sullivan argued before the full House that plant protection was an area "to which too little attention has been devoted in the past,"⁸⁸ but explained that the Committee "had great trouble in attempting to spell out the implications of national control over these species of plants."⁸⁹ In contrast, the "Senators . . . referred almost exclusively to

81. See 16 U.S.C. § 1531(a)(4); see also *id.* § 1537(a).

82. Campbell, *supra* note 3, at 5 ("CITES stimulated a thorough revision of American endangered species legislation, including extension of its broadened protections to the plant kingdom. It is probable that the Endangered Species Act of 1973 (ESA) would not have included plants at all if not for CITES.").

83. Holly Wheeler, *Plants, in* ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES 246, 256 (Donald C. Baur & William Robert Irvin eds., 2d ed. 2010).

84. See Campbell, *supra* note 3, at 5–8.

85. CONG. RSCH. SERV., CIS 82 2322–4, A LEGISLATIVE HISTORY OF THE ENDANGERED SPECIES ACT OF 1973, at 144 (1982) (quoting from a report from the House Committee on Merchant Marine and Fisheries, which was to accompany H.R. 37).

86. *Id.*

87. *Id.* at 145.

88. *Id.* at 195 (An excerpt from the Congressional Record of Sept. 18, 1973 when the House of Representatives considered the passage of H.R. 37, with amendments.)

89. *Id.*

the need to protect charismatic wildlife,⁹⁰ giving virtually no attention to the issue of plant protection. The Nixon Administration similarly focused on animal species—President Nixon’s proposed “bills explicitly did not extend protection to threatened or endangered plants.”⁹¹

In short, legislators expressed serious concerns that barring all killing or harming of plants under the federal ESA would amount to (or at least be perceived as) federal land-use control, given the traditional treatment of plants as part of a landowner’s real estate.⁹² As a compromise, Congress tasked the Smithsonian with preparing a list of “(1) species of plants which are now or may become endangered, or threatened and (2) methods of adequately conserving such species” for eventual consideration by Congress.⁹³ In the interim, the House-Senate conference committee added language to the final bill allowing the listing of species or subspecies of plants and prohibiting interstate and international commerce of endangered plants.⁹⁴ As detailed below, this approach afforded plants most of the ESA’s protections, excluding them only from the prohibition on killing and harming listed species. After the subsequent publication of the Smithsonian report,⁹⁵ Congress declined to amend the plant protections, leaving plants with roughly the level of protection they enjoy today.⁹⁶

C. Existing ESA Plant Protections

The FWS and the National Marine Fisheries Service (“NMFS,” together “the Services”) implement the ESA.⁹⁷ The FWS oversees terrestrial and freshwater species, including all but one plant species protected under the Act,⁹⁸

90. Petersen, *supra* note 75, at 479.

91. *Id.* at 480.

92. See Campbell, *supra* note 3, at 6 (“It was feared that a blunt prohibition of ‘taking’ would stir opposition if it were seen as a form of federal land-use control, especially since landowners are considered to own plants.”).

93. 16 U.S.C. § 1541.

94. Campbell, *supra* note 3, at 7.

95. See SMITHSONIAN INST., REPORT ON ENDANGERED AND THREATENED PLANT SPECIES OF THE UNITED STATES (1975).

96. See Petersen, *supra* note 75, at 480.

97. *Overview*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/3LDD-LWJ7>. NOAA fisheries was previously called the National Marine Fisheries Service (NMFS) and many articles and cases refer to NMFS as the other regulatory body for the ESA. For simplicity’s sake, and because most plants are land based, this article will refer to the Fish and Wildlife Service. *About Us*, NOAA FISHERIES, <https://perma.cc/D9NC-U98U>.

98. See ECOS, *FWS-Listed U.S. Species by Taxonomic Group*, *supra* note 15; *Endangered and Threatened Species Under NMFS’ Jurisdiction*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/M4KA-2MGF>. The FWS sometimes declines to designate critical habitat for listed plants when designating the habitat might put the plants at additional risk. See *Endangered and Threatened Wildlife and Plants; Determination that Designation of Critical Habitat Is Not Prudent for the Rock Gnome Lichen*, 66 Fed. Reg. 18,062 (Oct. 9, 2001)

while NMFS oversees marine and anadromous species. “Listing” a species as endangered⁹⁹ or threatened¹⁰⁰ under Section 4 of the Act triggers the Act’s protections. The ESA does not distinguish between plants and wildlife in the listing process or standards. It allows, for example, emergency listings or listings based on similarity of appearance between protected and unprotected species for both plants and wildlife.¹⁰¹

After listing, the Services generally designate an area of critical habitat for the species, which includes the geographic areas “essential for the conservation of the species.”¹⁰² The Services have designated critical habitat for 484 of the 943 listed U.S. plant species, mostly on federal lands.¹⁰³ Listing also triggers additional protections and, generally, a nonbinding recovery plan spelling out actions necessary for the species to be delisted.¹⁰⁴ The protections are codified in Section 7 and Section 9 of the Act.¹⁰⁵

Section 9(a)(1) states that “with respect to any endangered species of fish or wildlife . . . it is unlawful for any person to . . . *take* any such species within the United States . . .”¹⁰⁶ Take is defined in Section 3(19) of the Act to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”¹⁰⁷ Section 9(a)(1) applies only to fish and wildlife, not plants.¹⁰⁸ The prohibitions protecting plants, in Section 9(a)(2), do not mention take,¹⁰⁹ instead providing that:

[I]t is unlawful for any person . . . to remove and reduce to possession any [endangered plants] from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or re-

(codified at 50 C.F.R. pt. 17) (proposing to find that “designation of critical habitat is not prudent for the rock gnome lichen, because it would likely increase the threat from collection, vandalism, or habitat degradation and destruction, both direct and inadvertent”); see also Katrina Outland, *Trapped in the Goddess’s Mousetrap: Equitable Solutions for Poverty Poaching of Venus Flytraps*, 8 WASH. J. ENV’T L. & POL’Y 362, 368–69 (2018).

99. 16 U.S.C. § 1532(6) (defining endangered species as “any species which is in danger of extinction throughout all or a significant portion of its range”).

100. *Id.* § 1532(20) (defining threatened species as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range”).

101. See Wheeler, *supra* note 83, at 248.

102. 16 U.S.C. § 1532(5).

103. See ECOS, *USFWS Threatened & Endangered Species Active Critical Habitat Report*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/PM7F-VYXJ>; ECOS, *Listed Species Summary (Boxscore)*, U.S. FISH & WILDLIFE SERVICE, <https://perma.cc/P545-MYF4>.

104. 16 U.S.C. § 1533.

105. *Id.* §§ 1536, 1538.

106. *Id.* § 1538(a)(1) (emphasis added).

107. *Id.* § 1532(19).

108. *Id.* § 1538(a)(1).

109. *Id.* § 1538(a)(2).

move, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.¹¹⁰

Under recent regulatory revisions, threatened plants do not automatically get this level of protection, and threatened plants listed after September 26, 2019, will get no protection unless the Services deliberately give them special protection by promulgating specific regulations.¹¹¹ This section might initially appear to give plants, at least endangered plants, some protection, but the Act's limitation to "areas under Federal jurisdiction" in this section ensures that endangered plants on private land receive virtually no protection under federal law.¹¹² This is the most significant difference in the protection of plants and the protection of wildlife under the Act. Draining a California vernal pool would be a violation of the Act if it harmed (or resulted in "take," in the parlance of the Act) fairy shrimp that used the pool as habitat. Even accidentally hitting a listed species of wildlife with a car would be a technical violation of the Act. In contrast, a private landowner could cut down listed plant species on their own land for any reason, or even for no reason at all. Even on federal land, destruction of plants is only barred if the destruction is "malicious," a term not defined in the Act or the implementing regulations, but which is unlikely to include incidental destruction while engaged in other activities. Thus, for example, off-road vehicle use that destroys listed plants on federal land is not barred by Section 9. Finally, the "FWS has interpreted the phrase 'remove and reduce to possession' to proscribe the removal of an endangered plant only when combined with [continuing] possession of the plant,"¹¹³ so removing a protected plant from the ground and leaving it on the federal land would not violate this prohibition. Thus, under Section 9, threatened and endangered plants on private lands get no protection, and those on federal land fare only marginally better.

Section 9 provides listed plants with fairly robust protections from trade. Absent a permit, it is generally illegal to import listed plant species into or export listed species from the United States.¹¹⁴ Listed plants generally cannot be

110. *Id.*

111. Under the prior approach, all threatened species received the same protection as endangered species, absent promulgation of special regulations giving them a lower level of protection. 50 C.F.R. §§ 17.61, 17.71(a) (1998). Under the new approach, protection for newly listed threatened species depends on the regulations promulgated to give them protections at the time of their listing. They no longer default to the same protections as endangered species. See Endangered and Threatened Wildlife and Plants; Regulations for Prohibitions to Threatened Wildlife and Plants, 84 Fed. Reg. 44,753 (Aug. 27, 2019) (codified at 50 C.F.R. pt. 17).

112. 16 U.S.C. § 1538(a)(2); Regan, *supra* note 57, at 141.

113. Regan, *supra* note 57, at 141.

114. 16 U.S.C. § 1538(a)(2)(A).

sold in interstate or foreign commerce,¹¹⁵ and cannot be delivered, received, carried, transported, or shipped in interstate or foreign commerce.¹¹⁶

Section 7 provides some of the most significant protections to listed species from federal actions under the ESA, and the scope of this provision makes it an important tool for increased protection.¹¹⁷ The provisions of Section 7 apply only to federal agency actions,¹¹⁸ but private projects that require approval or permits from federal agencies fall under this section, broadening the scope of the Section 7 protections.¹¹⁹ Examples include activities in wetlands, which generally require a permit under Clean Water Act Section 404 from the U.S. Army Corps of Engineers;¹²⁰ Environmental Protection Agency (“EPA”) registration of privately produced pesticides for use in the United States;¹²¹ Federal Energy Regulatory Commission (“FERC”) hydropower licensing decisions for state- or privately-owned dams;¹²² private activities permitted on federal land like logging or development;¹²³ and federally funded projects in which the federal government retains a measure of control.¹²⁴ Broad federal involvement via these mechanisms gives Section 7 significant clout in protecting listed species.

Substantively, Section 7 creates two primary requirements. First, the Act directs federal agencies to promote the purpose of the Act, including an affirmative requirement to “carr[y] out programs for the conservation of endangered species and threatened species.”¹²⁵ Because the Act’s definition of species includes plants, this mandate includes the conservation of endangered and

115. *Id.* § 1538(a)(2)(D).

116. *Id.* § 1538(a)(2)(C).

117. See Oliver A. Houck, *Reflections on the Endangered Species Act*, 25 ENV’T L. 689, 692 (1995).

118. See 16 U.S.C. § 1536(a).

119. For example, a project that requires federal approval to impact a wetland would be required to comply with Section 7. U.S. FISH AND WILDLIFE SERV. & NAT’L MARINE FISHERIES SERV., CONSULTATION HANDBOOK: PROCEDURES FOR CONDUCTING CONSULTATION AND CONFERENCE ACTIVITIES UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT 4–18 (1998) [hereinafter CONSULTATION HANDBOOK]; see also Jeffrey J. Rachlinski, *Protecting Endangered Species Without Regulating Private Landowners: The Case of Endangered Plants*, 8 CORNELL J.L. & PUB. POL’Y 2 (1998)

120. See 33 U.S.C. § 1344(e)(2).

121. See 7 U.S.C. § 136a(a).

122. See 16 U.S.C. §§ 791–835.

123. See *id.* at § 1536(a) (discussing application to federal permittees and licensees); see, e.g., Lane Cnty. Audubon Soc’y v. Jamison, 958 F.2d 290, 294 (9th Cir. 1992) (requiring Section 7 consultation before the Bureau of Land Management (“BLM”) could approve a plan allowing private companies to harvest timber from BLM lands).

124. See Katharine Rosenberry, *The Effect of the Endangered Species Act on Housing Construction*, 33 HASTINGS L.J. 551, 565 (1982) (discussing federal effects on housing construction projects).

125. See 16 U.S.C. § 1536(a)(1)–(2).

threatened plant species.¹²⁶ Courts generally have read this requirement as giving federal agencies the power to carry out such programs,¹²⁷ but courts do not read the language to place affirmative responsibilities on agencies beyond those spelled out elsewhere in the Act.¹²⁸ More substantively, Section 7(a)(2) requires agencies to “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species.”¹²⁹ This creates an affirmative responsibility that has produced both a robust administrative procedure and significant litigation.

Before a federal agency undertakes an action with the potential to impact a listed species of plant or animal (including the permitting and funding actions discussed above), that agency, termed the “action agency,” must go through a process known as Section 7 consultation.¹³⁰ The ESA sets out the broad parameters of the consultation process, including standards and deadlines, but regulations promulgated by the Services control the bulk of the consultation process.¹³¹ Generally, the action agency prepares a biological assessment to “evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat and determine whether any such species or habitat are likely to be adversely affected by the action.”¹³² The action agency submits the biological assessment to the relevant “expert agency,” either the FWS or NMFS, which then decides whether to concur in the assessment. By regulation, “[i]f the biological assessment indicates that there are no listed species or critical habitat present that are likely to be adversely affected by the action and the Director concurs . . . then formal consultation is not required.”¹³³ But if the Director “identifies any action of that agency that may affect listed species or critical habitat and for which there has been no consultation,”¹³⁴ which he or she may do by declining to concur in the assessment, the statute

126. *Id.* § 1532(16) (“The term ‘species’ includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.”).

127. *Carson-Truckee Water Conservancy Dist. v. Clark*, 741 F.2d 257, 261 (9th Cir. 1984).

128. *See, e.g., City of Santa Clarita v. U.S. Dep’t of the Interior*, No. CV02-00697, 2006 WL 4743970, at *11 (C.D. Cal. Jan. 30, 2006). *But see generally* J. B. Ruhl, *Section 7(a)(1) of the “New” Endangered Species Act: Rediscovering and Redefining the Untapped Power of Federal Agencies’ Duty to Conserve Species*, 25 ENV’T L. 1107 (1995).

129. 16 U.S.C. § 1536(a)(2).

130. *Id.* § 1536.

131. *Id.*

132. 50 C.F.R. § 402.12(a) (2019). If the action agency believes there will be no effect on listed species from the proposed action, it need not undertake any consultation at all. *See Consultations Frequently Asked Questions*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/AQ9Y-7WQD>.

133. 50 C.F.R. § 402.12(k).

134. *Id.* § 402.14(a).

requires formal consultation.¹³⁵ An action agency may also determine on its own that its actions affect listed species or critical habitat and request formal consultation.¹³⁶ The formal consultation process is codified in Section 7(a)(2), which requires the completion of a Biological Opinion (“BiOp”) and an ITS.¹³⁷

The BiOp contains a “description of the proposed action, status of the species/critical habitat, the environmental baseline, effects of the action, cumulative effects. . .and reasonable and prudent alternatives, as appropriate.”¹³⁸ The BiOp also includes the expert agency’s opinion on the likelihood that the agency action will “jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat.”¹³⁹

If the expert agency determines that the project will not result in any take of listed species, the project can proceed. For projects that may take a listed species, the protected plant and animal species differ under the current interpretation of the ESA. If the expert agency decides that the action may result in take of listed *animal* species, that the take is “incidental to” the purpose of the project, and that the project nevertheless will not jeopardize the continued existence of listed animals and will not result in the destruction or adverse modification of designated critical habitat (i.e., makes a “no jeopardy” finding), then the agency prepares an ITS.¹⁴⁰ Among other things, the ITS serves as a permit that excuses any take associated with the action subjected to the consultation from the Act’s Section 9 take prohibitions and a limitation on take associated with the project.¹⁴¹ In contrast, because Section 9 does not bar take of plants under current interpretations, if the expert agency decides the action may result in take of listed *plant* species, but that the project nevertheless will not jeopardize the continued existence of listed species and will not result in the destruction or adverse modification of designated critical habitat (i.e., makes a “no jeopardy” finding), the project can proceed without the ITS. Thus plants garner some protection from Section 7 consultations but are not afforded the significant protections associated with an ITS.¹⁴²

135. See 16 U.S.C. § 1536(a)(2).

136. 50 C.F.R. § 402.14(a).

137. 16 U.S.C. § 1536.

138. CONSULTATION HANDBOOK, *supra* note 119, at 4-15.

139. *Id.* at 2-6.

140. 16 U.S.C. § 1536(b)(4); see CONSULTATION HANDBOOK, *supra* note 119, at 4-47-4-48.

141. See CONSULTATION HANDBOOK, *supra* note 119, at 4-47. Note that the consultation and ITS process is for projects with a federal component or requiring a federal permit. See *id.* at 2-6. Wholly private actions that might incidentally take a listed species require an incidental take permit (“ITP”), issued in conjunction with a habitat conservation plan, under ESA Section 10(a)(1)(B). See *id.* at 2-4.

142. See *id.* at 4-46 (“As a matter of policy, the Services require that an incidental take statement be included in all formal consultations, except those only involving plants.”). See discussion *infra* Part II.A (outlining ITS provisions in the ESA in more depth).

These existing protections—narrow prohibitions on trade and actions affecting plants, coupled with some limits on the impacts of federal actions affecting plants—have been insufficient to protect plants.¹⁴³ Estimates suggest 154 species of plants are extinct in the wild,¹⁴⁴ and “approximately one-third of [U.S.] native flora [are] threatened with extinction.”¹⁴⁵ In Hawaii alone, 200 plant species have less than fifty individual specimens remaining in the wild.¹⁴⁶ Listed plant species are not recovering at the same rate as animal species,¹⁴⁷ and yet federal agencies give plants less attention than other taxa.¹⁴⁸ Nonfederal entities are unlikely to make up the difference. Quantitative analysis in a 1998 paper suggests that relying on the good acts of private landowners will result in “a continuous stream of extinctions.”¹⁴⁹ Further, relying on states to protect plants is unlikely to succeed. In practice, plant protection on state lands varies widely, and only thirty-two states have enacted any type of legal protection for plants.¹⁵⁰ Additional comprehensive protection, therefore, will have to come from the federal level.¹⁵¹

143. See Campbell, *supra* note 3, at 9, 11 (“Legal protection for plants remains inadequate” and “[e]nforcement of existing laws falls short of accomplishing the laws’ stated objectives with respect to plants.”). Little recent scholarship has addressed the plight of plants under the ESA, perhaps recognizing the difficulty in amending the Act.

144. See *OLDFIELD ET AL.*, *supra* note 56, at 42.

145. *Id.* at 41.

146. *Id.* at 42.

147. See Timothy D. Male & Michael J. Bean, *Measuring Progress in U.S. Endangered Species Conservation*, 8 *ECOLOGY LETTERS* 986, 989 (2005) (demonstrating that populations of listed plant species are more likely to be declining than populations of listed birds, mammals, or fish); Gibbs & Currie, *supra* note 16, at 4 (“[B]irds, mammals and fish have recovered better, on average, than plants, amphibians and invertebrates.”).

148. See Campbell, *supra* note 3, at 1; Havens, *supra* note 10, at 3 (“[P]lant conservation is woefully underresourced in comparison with animal conservation efforts.”); see also Negrón-Ortiz, *supra* note 4, at 41 (“[P]lants are the most listed taxon and receive a very small fraction of the total expenditures.”); Schwartz, *supra* note 7, at 286 (discussing differences in recovery expenditures).

149. Rachlinski, *supra* note 119, at 36.

150. See BRUCE A. STEIN & KELLY GRAVUER, *HIDDEN IN PLAIN SIGHT: THE ROLE OF PLANTS IN STATE WILDLIFE ACTION PLANS* 20 (2008).

151. While such changes might be unlikely in the Trump administration, this article may lay a foundation for future efforts to improve plant protection.

II. IMPROVING FEDERAL PLANT PROTECTIONS THROUGH INCIDENTAL TAKE STATEMENTS

A. Incidental Take Statements

Section 7(b)(4) requires the Services to prepare an ITS when they make a “no jeopardy” finding.¹⁵² Per the language of the Act:

(b)(3)(A) Promptly after conclusion of consultation . . . the Secretary shall provide to the Federal agency and the applicant, if any, a written statement setting forth the Secretary’s opinion, and a summary of the information on which the opinion is based, detailing how the agency action affects the species or its critical habitat. If jeopardy or adverse modification is found, the Secretary shall suggest those reasonable and prudent alternatives which he believes would not violate subsection (a)(2) [the no jeopardy and critical habitat requirements] and can be taken by the Federal agency or applicant in implementing the agency action [This written statement is the BiOp] . . .

(b)(4) If after consultation . . . the Secretary concludes that—

- (A) the agency action will not violate such subsection, or offers reasonable and prudent alternatives which the Secretary believes would not violate such subsection;
- (B) the taking of an endangered species or a threatened species incidental to the agency action will not violate such subsection; and
- (C) if an endangered species or threatened species of a marine mammal is involved, the taking is authorized pursuant to section [101(a)(5) of the Marine Mammal Protection Act of 1972];

the Secretary shall provide the Federal agency and the applicant concerned, if any, with a written statement [i.e., the ITS] that—

- (i) specifies the impact of such incidental taking on the species,
- (ii) specifies those reasonable and prudent measures that the Secretary considers necessary or appropriate to minimize such impact,
- (iii) in the case of marine mammals, specifies those measures that are necessary to comply with section [101(a)(5) of the Marine Mammal Protection Act of 1972] with regard to such taking, and
- (iv) sets forth the terms and conditions (including, but not limited to, reporting requirements) that must be complied with by

152. 16 U.S.C. § 1536(b)(4).

the Federal agency or applicant (if any), or both, to implement the measures specified under clauses (ii) and (iii).¹⁵³

The actual relief from Section 9 liability given pursuant to the ITS comes in Section 7(o):

Notwithstanding sections 4(d) and 9(a)(1)(B) and (C) of this Act . . . (2) any taking that is in compliance with the terms and conditions specified in a written statement provided under subsection (b)(4)(iv) of this section [i.e., the ITS] shall not be considered to be a prohibited taking of the species concerned.¹⁵⁴

Thus, if operation of a federal water project will kill some listed salmon, for example, but is not likely to make that salmon population go extinct (i.e., not likely to jeopardize its continued existence), NMFS would prepare a “no jeopardy” BiOp under Section 7(a)(2),¹⁵⁵ and then prepare an incidental take statement under Section 7(b)(4),¹⁵⁶ which would, under Section 7(o)(2), relieve the project operators from Section 9 liability for take.¹⁵⁷ Under the statute, the ITS analyzes the impact of the incidental take on the species, specifies the reasonable and prudent measures required to reduce those impacts to a “no jeopardy” level, and then provides the terms and conditions required to comply with those measures.¹⁵⁸ The Services provide a detailed description of the process in the Section 7 handbook.¹⁵⁹ The FWS has a policy of requiring an ITS in all formal consultations, except those involving plants.¹⁶⁰

B. Purpose of the ITS Provision

The ITS described in Section 7(b)(4) has dual purposes.¹⁶¹ One of these purposes is to protect federal action agencies and their permittees from liability for the take prohibitions in Section 9,¹⁶² which gets the lion’s share of the attention in the 1982 amendments that created the ITS provision. The conference committee noted that there were situations in which an agency action would result in a “no jeopardy” finding under Section 7(a)(2) but would still be technically liable for harm to the species under the take provisions in Section 9. The

153. *Id.* § 1536(b)(3)–(4).

154. *Id.* § 1536(o).

155. *Id.* § 1536(a)(2).

156. *Id.* § 1536(b)(4).

157. *Id.* § 1536(o)(2).

158. *Id.* § 1536(b)(4)(i)–(iv).

159. CONSULTATION HANDBOOK, *supra* note 119, at 4–45.

160. *Id.* at 4–45.

161. See S. Comm. on Env’t & Pub. Works, Endangered Species Act Amendments of 1982, S. Rep. No. 97-418, at 20–22 (1982) [hereinafter Senate Committee Report].

162. See *id.* at 5.

committee sought to remedy this problem with Sections 7(b)(4) and 7(o).¹⁶³ In other words, the ITS gives the party taking action a “safety net” for impacts to threatened and endangered species that may occur incidentally during the project,¹⁶⁴ conferred by Section 7(o).¹⁶⁵

The other, less recognized purpose for the ITS is to prevent incidental take from exceeding the amount contemplated in the Services’ “no jeopardy” opinion.¹⁶⁶ By amending the Act to include ITS in 1982, the legislature was both clarifying liability for take under Section 7 and strengthening the consultation process.¹⁶⁷ The “dual purpose” interpretation of the Section 7 ITS finds support in the House and Senate committee reports on the 1982 amendments to the Act.¹⁶⁸ Although the purpose of protecting action agencies and permittees from liability is explicit in the text of the House and Senate reports and is well recognized by the courts,¹⁶⁹ the legislative purpose of protecting species from jeopardy merits more consideration.

There is strong support in the legislative history of the 1982 amendments to suggest that the species-protection purpose was a key part of the legislation. The Senate committee report clearly indicates the purpose of protecting action agencies from Section 9 liability,¹⁷⁰ but then highlights the role of the ITS in “preserv[ing] the integrity of the current [S]ection 7 consultation process as well as the integrity of the Secretary’s biological opinions.”¹⁷¹ The report de-

163. See H.R. REP. NO. 97-835, at 27 (1982) (Conf. Rep.).

164. CONSULTATION HANDBOOK, *supra* note 119, at 4-47.

165. 16 U.S.C. § 1536(o) (“Notwithstanding sections 4(d) and 9(a)(1)(B) . . . any taking that is in compliance with the terms and conditions specified in a written statement provided under subsection (b)(4)(iv) shall not be considered to be a *prohibited taking* of the species concerned.” (emphasis added)).

166. See Senate Committee Report, *supra* note 161, at 21 (“Under the proposed amendment, the Secretary is required to specify the extent of incidental take that would not violate the Section 7(a)(2) standard. . . . If the specified extent of the take is exceeded, the Federal agency or permit or license applicant, if any, must immediately reinitiate consultation.”).

167. See *id.* at 5, 21–22.

168. See *id.* at 21; H. COMM. ON MERCH. MARINE & FISHERIES, ENDANGERED SPECIES ACT AMENDMENTS OF 1982, H.R. REP. NO. 97-567, at 26–27 (1982) [hereinafter House Committee Report] (explaining that Section 7 reporting requirements allow the secretary to “monitor the impact of the [approved] taking on a species” and noting that “[i]f the specified impact on the species is exceeded, the committee expects that the federal agency or permittee or licensee will immediately reinitiate consultation since the level of taking exceeds the impact specified in the initial [S]ection 7(b)(4) statement”). The conference report, however, only addresses the first purpose. See H.R. REP. NO. 97-835 (1982) (Conf. Rep.).

169. See *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1144 (9th Cir. 2016).

170. See Senate Committee Report, *supra* note 161, at 21 (“If a Federal or private action that is in compliance with the measures specified to minimize takings results in the taking of specimens of a species that was the subject of the [BiOp], such action will not be considered a ‘taking’ for the purposes of section 9. . . .”).

171. *Id.*

scribes the ITS as “a written statement specifying (1) the extent of take incidental to the agency action that would not violate [S]ection 7(a)(2); and (2) those reasonable and prudent measures that must be followed to minimize such takings.”¹⁷² The ITS marks the limit of the impact allowed before the take would result in jeopardy to the species. The report goes on to state: “The amendment would not lessen in any way an agency’s obligation under [S]ection 7(a)(2) to insure that its action is not likely to jeopardize the continued existence of a listed species or to result in the destruction or adverse modification of critical habitat.”¹⁷³ This point is emphasized further in the next statement:

The amendment would, however, authorize the Secretary to issue, in addition to issuing a [BiOp], a written statement that places mandatory and enforceable controls on the means and level of incidental takings that may be allowed with respect to the agency action. In no instance, however, may the Secretary authorize takings which would result in violation of Section 7(a)(2).¹⁷⁴

This language stresses the point that the ITS protects the integrity of the no jeopardy decision under 7(a)(2).¹⁷⁵

Similarly, the House committee report notes the need to harmonize Section 7 with Section 9 but then notes an even more significant role for the ITS: to trigger reinitiation of the consultation process. The House report notes “if the specified impact on the species is exceeded, the Committee expects that the federal agency or permittee or licensee will immediately reinitiate consultation since the level of taking exceeds the impact specified in the initial [S]ection 7(b)(4) statement.”¹⁷⁶ The House committee also suggested that the agency or permittee would stop work immediately if “the impact of the additional taking would cause an irreversible and adverse impact on the species.”¹⁷⁷ This is borne out by the guidance in the Consultation Handbook.¹⁷⁸

Although the text of the Act does not mention reinitiation, a recent review of the practice found it had strong legislative support and constituted an integral part of the workings of the Act.¹⁷⁹ Under the Services’ regulations, reinitiation of formal consultation is triggered when one or more of the following conditions are met:

172. *Id.* at 20–21.

173. *Id.*

174. *Id.*

175. *See id.*

176. House Committee Report, *supra* note 168, at 27.

177. *Id.*

178. CONSULTATION HANDBOOK, *supra* note 119, at 4–54.

179. Catherine E. Kanatas & Maxwell C. Smith, *Reexamining What We Stand to Lose: A Look at Reinitiated Consultation Under the Endangered Species Act*, 32 PACE ENV’T L. REV. 225, 251–58 (2015).

(1) [T]he amount or extent of incidental take [permitted by the ITS] is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the action is modified in a manner causing effects to listed species or critical habitat not previously considered; (4) a new species is listed or critical habitat designated that may be affected by the action.¹⁸⁰

The purpose of reinitiation is to ensure that the incidental take allowed in the ITS does not exceed the amount that was contemplated in the no jeopardy BiOp and thus invalidate that opinion.¹⁸¹ This process allows federal agencies to re-evaluate the potential effects on endangered and threatened species in the event that the original opinion is no longer valid.¹⁸² In short, “reinitiated consultation is the glue that holds the ESA’s protective scheme together.”¹⁸³

The case law on ITS-triggered reinitiated consultation is light, with only four circuits addressing the issue.¹⁸⁴ All four circuits recognize the importance of take limits in ITSs, emphasizing the need for numerical take limits when possible, and proxy take limits when a numerical limit is not feasible, in order to protect the purpose of the consultation process.¹⁸⁵ In *Oregon Natural Resources Council v. Allen*,¹⁸⁶ the Ninth Circuit reiterated the dual purpose of the ITS. It concluded that the ITS has two roles: first to authorize take that is otherwise illegal, and second, to limit that take to ensure the purposes of the Act are fulfilled.¹⁸⁷ Authorizing take without limiting that take “is inadequate because it prevents the action agencies from fulfilling the monitoring function the ESA and its implementing regulations clearly contemplate.”¹⁸⁸ The Ninth Circuit held that an ITS must provide a trigger for reinitiation that will result in further consultation if the “actual number of takings of [the listed species] that occurred during the project was considerably higher than anticipated.”¹⁸⁹ The Ninth Circuit has also held that any circumstances requiring reinitiated

180. *Id.* at 240.

181. See Jason Totoiu, *Quantifying, Monitoring, and Tracking “Take” Under the Endangered Species Act: The Promise of a More Informed Approach to Consultation*, 41 ENV’T L. 165, 170 (2011).

182. See CONSULTATION HANDBOOK, *supra* note 119, at 4-63 (outlining the conditions for reinitiation).

183. Kanatas & Smith, *supra* note 179, at 228.

184. *Id.* at 258 & nn.175-77.

185. *Id.* at 229 (“[C]ourts have taken a much stricter approach when considering the triggers for reinitiated consultation and have frequently insisted that those triggers be as meaningful and as exact as possible.”).

186. 476 F.3d 1031 (9th Cir. 2007).

187. *Id.* at 1032-33.

188. *Id.* at 1041.

189. *Id.* at 1039.

consultation invalidates the existing ITS and exposes parties relying on the ITS to liability under the Act.¹⁹⁰

While the Ninth Circuit considered actual numerical takes as a key point of inquiry for reinitiation, the Fourth Circuit explicitly relied on numeric limits as the ITS trigger. In *Sierra Club v. United States Department of the Interior*,¹⁹¹ the court held that the Services must use numeric limits as the ITS trigger unless such limits are not practical; in doing so, it vacated an ITS containing vague and unenforceable take limits.¹⁹²

Similarly, the Eleventh Circuit held that “[a]n incidental take statement may lawfully authorize harm to an endangered species as long as the statement sets a ‘trigger’ for further consultation at the point where the allowed incidental take is exceeded, a point at which there is a risk of jeopardizing the species,”¹⁹³ tying the trigger to the purpose of consultation.¹⁹⁴ The court “require[d] that the incidental take statement contain an adequate trigger for re-consultation and that the trigger be expressed in population terms unless it is impractical to do so,” in which case the court requires an adequate proxy.¹⁹⁵

The D.C. Circuit followed suit in a 2018 opinion, holding that “[t]he requirement to include a trigger for reinitiation of consultation necessitates more than lip service. The lack of a clear trigger point to reinitiate consultation renders the Opinion unlawful.”¹⁹⁶

The Tenth Circuit has not yet addressed ITS requirements in detail, although the U.S. District Court for the District of Colorado opined: “[t]he purpose of an ITS is two-fold: shielding the action agency from liability for unintentionally taking protected species and providing a trigger for reinitiating consultation” under the ESA.¹⁹⁷

Thus, the legislative history and the case law both clearly indicate that an ITS permits take otherwise prohibited by Section 9 and functions as a safety net for species. The legislation, the history, and the case law show that the

190. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1108 (9th Cir. 2012).

191. 899 F.3d 260 (4th Cir. 2018).

192. *Id.* at 281.

193. *Miccosukee Tribe of Indians v. United States*, 566 F.3d 1257, 1271–72, 1275 (11th Cir. 2009).

194. *See* 16 U.S.C. § 1536(a)(2) (requiring each federal agency, in consultation with the expert agency, to “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species”).

195. *Miccosukee Tribe of Indians*, 566 F.3d at 1275.

196. *Am. Rivers v. FERC*, 895 F.3d 32, 48–49 (D.C. Cir. 2018).

197. *Town of Superior v. U.S. Fish & Wildlife Serv.*, 913 F. Supp. 2d 1087, 1143 (D. Colo. 2012), *aff’d sub nom. WildEarth Guardians v. U.S. Fish & Wildlife Serv.*, 784 F.3d 677 (10th Cir. 2015) (quotation marks and alterations omitted).

safety net functions in four critical ways.¹⁹⁸ First, it puts a hard limit on the number of individuals of a species that may be taken before the take may cross the jeopardy threshold.¹⁹⁹ This provides a backstop on agency estimates of species impacts from the project by requiring reinitiation of a new approach if the project exceeds acceptable levels of take.²⁰⁰ The limitations in the BiOp mean little without monitoring to ensure that they are not exceeded.²⁰¹

Second, an ITS requires agencies to report on incidental take of the species and ensure that the previous no jeopardy assessment remains valid.²⁰² These requirements are essential to species recovery because they force the parties to track whether the population is responding to the action as they initially anticipated. Scientific monitoring can be costly and time consuming, and many project proponents attempt to avoid monitoring requirements.²⁰³ However, well-conducted scientific monitoring is essential to ongoing agency decision-making.²⁰⁴ Initial mistakes in project assessment need not lead to a species extinction if monitoring detects the errors. If the population is responding more negatively than anticipated, the FWS or NMFS may reinitiate consultation because “new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.”²⁰⁵

Third, the ITS outlines reasonable and prudent alternatives (“RPAs”) designed to minimize the expected take from the proposed federal action.²⁰⁶

198. See 16 U.S.C. § 1536(b)(4)(C)(i)–(iv) (detailing the requirements for when an ITS is issued).

199. See, e.g., *Sierra Club v. U.S. Dep’t of the Interior*, 899 F.3d 260, 281 (4th Cir. 2018) (holding that Services must use numeric limits as the ITS trigger unless not practical).

200. See *Totoiu*, *supra* note 181, at 170; see also *Oceana, Inc. v. Ross*, 321 F. Supp. 3d 128, 133–34 (D.D.C. 2018) (“[I]ncidental take monitoring is a key component of any ITS—without the ability to monitor incidental takes, these regulatory requirements become meaningless.”); *Ctr. for Biological Diversity v. Nat’l Marine Fisheries Serv.*, 191 F. Supp. 3d 157, 162 (D.P.R. 2016) (“The agency must also monitor the incidental take to ensure that the trigger has not been met.”).

201. Monitoring is sometimes part of the proposed project, not the ITS, as seen in the case study. See *infra* notes 235–240 and accompanying text.

202. 16 U.S.C. § 1536(b)(4)(C)(iv) (requiring that the ITS “set[] forth the terms and conditions (including, but not limited to, reporting requirements”).

203. Daniel Evans et al., *Species Recovery in the United States: Increasing the Effectiveness of the Endangered Species Act*, 20 ISSUES ECOLOGY, Winter 2016, at 19 (“The biggest obstacles to monitoring are the need for long-term commitments, relatively heavy staff involvement, and equipment that can be costly. Given the choice, most managers will opt to commit their limited staff and resources to additional recovery actions rather than monitoring.”).

204. See CONSULTATION HANDBOOK, *supra* note 119, at 9-1 (“Project monitoring, carried out by the Federal agency or applicant, provides the Services with information essential to assessing the effects of various actions on listed species and designated critical habitat. Monitoring allows the Services to track incidental take levels and to refine biological opinions, reasonable and prudent alternatives, reasonable and prudent measures, and terms and conditions.”).

205. See *id.* at 4-63.

206. See, e.g., *Wheeler*, *supra* note 83, at 250.

These RPAs decrease the impact of the action on the listed species and are required as part of the opinion. The RPAs are implemented through terms and conditions that reduce the overall impact of the project on the listed species and its habitat. The action agency's liability shield depends on following these terms and conditions,²⁰⁷ so they ultimately form the binding and enforceable protection for the listed species within the ITS framework. Without the ITS, a no-jeopardy BiOp does not offer listed species real protection.

Fourth and finally, the ITS provides a procedure for agencies to reinstate consultation when an action agency breaches those terms and conditions or when external circumstances make it clear that the species is in greater danger of jeopardy than the FWS or NMFS originally contemplated.²⁰⁸ The ITS is a critical part of the Section 7 no-jeopardy apparatus, and without an ITS, Section 7 BiOps lack accountability and do not serve one of the purposes Congress intended: the prevention of species extinction due to federal action.

C. Practical Implications – A Case Study

While plants are clearly meant to be protected under the Section 7(a)(2) jeopardy standard,²⁰⁹ these protections lack staying power when the Services fail to issue an ITS for incidental take of plants. Federal agencies essentially cannot proceed with a project without completing the consultation process, but when they complete that process without the limitations imposed by an ITS, they face no monitoring requirements and no trigger for reinitiating consultation should the acceptable level of incidental take be exceeded.²¹⁰

What are the practical implications of this interpretation? Does it really matter if agencies are required to provide ITSs for plants? Ideally, one would point to cases where species numbers decline drastically after a no-jeopardy opinion, but because the Services do not prepare ITSs for plants, monitoring is not required and data on this issue are simply unavailable. No lawsuits have yet resulted in an order to reinstate consultation for a plant species, in marked contrast to environmental groups' success forcing reinitiation opinions addressing animal species. In lieu of this kind of data, a case study illustrates the ramifications of this interpretation. Consider the different treatment of Peirson's milk-vetch and the desert tortoise in a BiOp²¹¹ challenged in a recent Ninth Circuit case.²¹²

207. See CONSULTATION HANDBOOK, *supra* note 119, at 4-54.

208. See 16 U.S.C. § 1536(b)(4)(C)(i)-(iv).

209. See *supra* notes 125-142 and accompanying text.

210. 16 U.S.C. § 1536(b)(4).

211. See Memorandum from the Field Supervisor at the Carlsbad Fish and Wildlife Office (Aug. 20, 2012) (on file with author) [hereinafter BiOp].

212. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1140-41 (9th Cir. 2016).

In the southeast corner of California, in the Imperial Sand Dunes (“ISD”) Recreation Area, a long narrow strip of sand dunes stretches towards the border with Mexico.²¹³ The shifting sand is home to the federally threatened Peirson’s milk-vetch, a small flowering plant that grows in hollows on the dunes.²¹⁴ The milk-vetch is a short-lived perennial, eight to twenty-seven inches in height, that survives on sand dunes by sinking a tap root deep into the dunes to find moisture and a secure anchor.²¹⁵ The leaves and stem are covered with fine white hairs, and the plant’s blooms offer up purple petals accented with white highlights.²¹⁶ In the United States, the milk-vetch occurs only in the narrow band running forty miles along the ISD Recreation Area, in “the western portion of the Algodones Dunes of eastern Imperial County, California, which is the largest sand dune field in North America.”²¹⁷

On weekends during the cooler months, this desert scene transforms. Off-roading enthusiasts from Los Angeles, Riverside, San Diego, Phoenix, and surrounding areas descend on the area en masse, in numbers well north of 100,000 on major holiday weekends.²¹⁸ Rows of vendor stalls line the off-highway vehicle (“OHV”) paths. As the challenged BiOp notes, “[t]he OHV enthusiasts who visit on holiday weekends experience large crowds, noise, and intensive, 24-hour OHV activity.”²¹⁹ For the 2004 to 2009 period, annual visitation hit 1.4 million.²²⁰ Across the United States, OHV “usage increased by 42% between 1999 and 2004 . . . while the amount of public land available for OHV recreation has decreased. [In California,] OHV registration numbers have increased by 108% between 1985 and 2002 while the amount of desert available to OHV recreationists has diminished by 48%.”²²¹ Conflict between this heavy use and the imperiled species in the desert habitat is inevitable.

Milk-vetch habitat and OHV recreation are not compatible land uses. The BiOp notes that “OHV use could result in direct death or injury of Peirson’s milk-vetch due to crushing, uprooting, or burial of plants and seeds, and by reducing reproductive output of those that survive.”²²² Small milk-vetch plants struck one to three times by OHVs, for instance, show reductions in survival of

213. The scientific name for Peirson’s milk-vetch is *Astragalus magdalenae* var. *peirsonii*. *Peirson’s Milkvetch*, CAL. DEPT FISH & WILDLIFE, <https://perma.cc/Z2FD-FFD5>.

214. BiOp, *supra* note 211, at 26, 39–40.

215. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for *Astragalus magdalenae* var. *peirsonii* (Peirson’s Milk-Vetch), 73 Fed. Reg. 8,748, 8,748 (proposed Feb. 14, 2008) (codified at 50 C.F.R. pt. 17).

216. *Peirson’s Milkvetch*, *supra* note 213.

217. Endangered and Threatened Wildlife and Plants, 73 Fed. Reg. at 8,748.

218. BiOp, *supra* note 211, at 24–25.

219. *Id.* at 25.

220. *See id.*

221. Jeremiah D. Groom et al., *Quantifying Off-Highway Vehicle Impacts on Density and Survival of a Threatened Dune-Endemic Plant*, 135 BIOLOGICAL CONSERVATION 119, 119 (2007).

222. BiOp, *supra* note 211, at 39.

roughly 33%.²²³ As a result, the Bureau of Land Management (“BLM”) notes that the milk-vetch “was federally listed as threatened primarily due to threats posed by OHV activity.”²²⁴ It follows, then, that “[l]ong-term survival of Peirson’s milk[-]vetch is dependent upon ensuring that future management actions minimize further impacts to its habitat and individual plants from OHV activities.”²²⁵

This conflict sparked more than a decade of litigation between the Center for Biological Diversity (“CBD” or “the Center”) and the BLM, focused on a series of BiOps analyzing the BLM’s efforts to manage the Imperial Sand Dunes.²²⁶ The Center believed that the BLM was mismanaging the dunes by re-opening portions of them to OHVs. The FWS’s 2012 BiOp acknowledged that OHV use could damage the flowers but concluded that there was no jeopardy to the species.²²⁷ FWS concluded that, while individual flowers could be killed due to off-road vehicle use, the proposed off-road vehicle plan would have limited negative effects on the species: a no jeopardy finding.²²⁸ The BiOp did not include an ITS for milk-vetch.

The BiOp and the underlying BLM plan provided some limited protection for plants. The plan closed 25.6% of the area to OHVs, and the closed area included the milk-vetch critical habitat.²²⁹ However, the protected area stayed open to non-OHV uses, including camping in designated areas, hiking, and wildlife viewing,²³⁰ and 15% of the milk-vetch occurred outside the closed areas, where the species received limited to no protection.²³¹ In addition, a significant number of OHV riders illegally enter closed areas; the BiOp noted illegal riders being cited in closed areas but did not provide overall data on the frequency of

223. Groom, *supra* note 221, at 119.

224. EL CENTRO FIELD OFFICE, U.S. DEP’T INTERIOR BUREAU LAND MGMT., BLM/CA/ES-2013/013+1793, IMPERIAL SAND DUNES: RECORD OF DECISION AND RECREATION AREA MANAGEMENT PLAN D-6 (2013), <https://perma.cc/S3MD-XGZH>.

225. *Peirson’s Milkvetch*, *supra* note 213.

226. *See* Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt., 833 F.3d 1136, 1140–41 (9th Cir. 2016).

227. *See id.* at 1142.

228. BiOp, *supra* note 211, at 39.

229. *Id.* at 12, 13, 18.

230. *Id.* at 40 (“[W]ildlife viewing, hiking, photography, and non-motorized camping would continue to be allowed in critical habitat.”).

231. *Id.* at 41 (“While closure of critical habitat would avoid OHV-related impacts to the majority of the Peirson’s milk-vetch distributed throughout the ISD, plants outside of critical habitat, approximately 15 percent of the known population, would continue to be impacted by OHV use and other recreational activities.”); *see also id.* at 13, 27, 40, 47 (explaining that the area closed to OHV use consists of the milk-vetch critical habitat and the entire North Algodones Dunes Wilderness Management Area, which together cover 85% of the milk-vetch population).

such incursions.²³² Enforcement is extremely difficult, as suggested by the title of a New York Times article on the Imperial Sand Dunes area: *A Holiday of Mayhem in “the Most Illegal Place in the World.”*²³³ The number of issued citations appear to underrepresent the total amount of illegal riding.²³⁴

The BiOp also discussed monitoring for the milk-vetch, although the opinion itself did not require monitoring. Instead, the monitoring was a conservation measure laid out in the action plan itself, which set forth a potential monitoring plan, caveated with a note that “[t]he type of monitoring implemented each year would be based on precipitation levels, funding availability, and staffing availability.”²³⁵ Generally, actions set forth in the action plan are binding, and the FWS may rely on such actions when making a jeopardy determination.²³⁶ Failure to complete such actions equates to a change in the project itself and requires reinitiation.²³⁷ These binding conservation plans, however, mean little when they depend on “funding availability, and staffing availability.”²³⁸

Although, in keeping with Ninth Circuit precedent, the FWS noted in the opinion that “[a]ny subsequent changes in the conservation measures proposed by BLM or in the conditions under which these activities currently occur may constitute a modification of the proposed action and may warrant reinitiation of formal consultation,” this language does not actually require any monitoring, given its dependency on available funding and staffing.²³⁹ The FWS’s opinion

232. See *id.* at 41 (reporting 57 citations in closed areas in 2007, 35 in 2008, and 20 in 2009); see generally RUSSELL LONG ET AL., BLUEWATER NETWORK, OFF-THE-TRACK: AMERICA’S NATIONAL PARKS UNDER SIEGE 6–9 (1999), <https://perma.cc/4ZZ6-3QC9> (noting illegal OHV use at 37% of reporting National Park System units).

233. Nick Madigan, *A Holiday of Mayhem in ‘the Most Illegal Place in the World,’* N.Y. TIMES (Jan. 2, 2002), <https://perma.cc/5H64-2GWQ>.

234. See *id.*

235. EL CENTRO FIELD OFFICE, U.S. DEP’T INTERIOR BUREAU LAND MGMT., *supra* note 224, at D-6–D-7.

236. See *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1113 (9th Cir. 2012) (“Conservation measures minimize or compensate for a project’s adverse effects to the species under review and are an integral part of the proposed action.” (internal citations and quotation marks omitted)).

237. See *Sierra Club v. Marsh*, 816 F.2d 1376, 1387–88 (9th Cir. 1987) (enjoining further actions on a project and requiring reinitiation under the ESA where a county failed to acquire mitigation lands as laid out in the underlying plan); *Ctr. for Biological Diversity*, 698 F.3d at 1115 (“[W]here mitigation measures are not carried out, any risk to listed species thereby created ‘must be borne by the project, not by the endangered species.’” (quoting *Marsh*, 816 F.2d at 1386)).

238. See EL CENTRO FIELD OFFICE, U.S. DEP’T INTERIOR BUREAU LAND MGMT., *supra* note 224, at D-6.

239. BiOp, *supra* note 211, at 52.

recognized that the BLM plan did not commit to monitoring sufficient to detect changes in milk-vetch populations over time.²⁴⁰

Nevertheless, the FWS relied on the monitoring to find that the plan did not put the milk-vetch in jeopardy. In its BiOp, the FWS emphasized: “[O]ur analysis of effects on Peirson’s milk-vetch and its critical habitat . . . is based on our assumption that BLM would continue to monitor Peirson’s milk-vetch populations . . . in a manner sufficient to detect changes in the overall population . . . to protect the majority of the Peirson’s milk-vetch population over time.”²⁴¹ This assumption is not binding, and, in this same BiOp, the FWS previously acknowledged that the BLM had not consistently monitored the populations of milk-vetch due to lack of funding and personnel.²⁴² The FWS nevertheless concluded that the monitoring would serve to protect the milk-vetch from jeopardy.

Following the no jeopardy determination in the opinion, the FWS laid out the ITS.²⁴³ In the ITS, the FWS noted “Section 9 of the Act does not address the incidental take of listed plant species. Because the Act does not address the take of listed plant species, this BiOp does not contain an incidental take statement, reasonable and prudent measures, or terms and conditions for the Peirson’s milk-vetch.”²⁴⁴ The FWS briefly described the ESA Section 9 plant protections discussed above²⁴⁵ and then shifted to a discussion of the desert tortoise.²⁴⁶

The ISD area is also potential habitat for the threatened desert tortoise,²⁴⁷ and the protections for the tortoise in the BiOp are much more robust, even

240. *Id.*

241. *Id.* at 42.

242. *See id.*

243. *See id.* at 51. Further, “[i]f monitoring indicates a noticeable decline in the [species abundance, BLM has the management authority to temporarily suspend specific uses in areas showing species decline.” *Id.* at 49.

244. *Id.* at 50.

245. *Id.* Section 9 of the Act does not address the incidental take of listed plant species. Because the Act does not address the take of listed plant species, this BiOp does not contain an incidental take statement, reasonable and prudent measures, or terms and conditions for the Peirson’s milk-vetch. The BLM should be aware that the Act prohibits the removal of endangered plants from Federal lands and their reduction to possession, the malicious damaging, or destruction on such lands; by regulation, the FWS extended this prohibition to threatened species. Section 9(a)(2)(B) prohibits any person from removing, cutting, digging up, or damaging or destroying individuals of an endangered listed plant species in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law. *Id.*

246. *See id.*

247. The desert tortoise is a large herbivorous turtle, with a shell eight to fifteen inches in length and four to six inches in height. Endangered and Threatened Wildlife and Plants; Notice of Availability of a Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*), 76 Fed. Reg. 53,482, 53,483 (proposed Aug. 26, 2011). The turtle is

though the tortoise is generally not found in the ISD area.²⁴⁸ First, in order to protect the desert tortoise from jeopardy and to provide a “trigger for reinitiation of consultation” under Section 7 in case of greater-than-anticipated impacts, the ITS required that the BLM monitor the level of incidental take of tortoises and report any take to FWS.²⁴⁹ Second, the ITS limited allowed take of the tortoise to one adult or juvenile tortoise per year.²⁵⁰ Third, the ITS stated that take of more than one tortoise would violate both Section 9’s take prohibition and require immediate reinitiation of consultation under Section 7.²⁵¹ The incidental take conditions associated with the desert tortoise are explicitly non-discretionary.²⁵² Violating the terms of the ITS would result in legal liability under the Act.²⁵³

The contrast is apparent, but to be explicit: first, monitoring and reporting is required under the ITS for tortoises, and a failure by the BLM to monitor the tortoises is itself an ESA violation. Monitoring and reporting are not required for the milk-vetch.²⁵⁴ Monitoring is important because the BiOp is a prediction of anticipated impacts on listed species. If the FWS is wrong about the impacts to tortoises, monitoring will detect the error and the FWS will reinitiate consultation. If the FWS is wrong about the impacts to milk-vetch, milk-vetch faces the risk of extinction, and the FWS and the BLM may not be aware of the mistake. Second, the ITS has a hard limit for when take begins to jeopardize the tortoise, when the BLM would be required to stop and reinitiate consultation. There is no limit for the number of milk-vetch that may be killed.²⁵⁵ In short, the failure to require an ITS for the milk-vetch renders the BiOp largely ineffectual in protecting the plant. Without these requirements and without the potential for reinitiation under Section 7, there is no protection from unanticipated impacts and no consequences for actions that may eventually lead to extinction for the plants.

listed as threatened under the ESA, in part due to threats from OHV use. *Id.* OHV use hurts desert tortoise populations through both direct mortality (tortoises crushed by OHVs and killed or injured) and through habitat damage. WILLIAM I. BOARMAN & WILLIAM B. KRISTAN, U.S. GEOLOGICAL SURVEY, SIR 2006–5143, EVALUATION OF EVIDENCE SUPPORTING THE EFFECTIVENESS OF DESERT TORTOISE RECOVERY ACTIONS 14–15 (2006), <https://perma.cc/5QEY-JRB3>.

248. BiOp, *supra* note 211, at 50–53. Contrast this with the milk-vetch, whose entire critical habitat area is within the ISD area. *Id.* at 3 (Peirson milk-vetch critical habitat covers a total of 12,105 acres), 27 (the ISD contains 12,105 acres of Peirson milk-vetch critical habitat).

249. *See id.* at 51.

250. *Id.*

251. *Id.*

252. *Id.* at 50.

253. *See id.*

254. *See id.* at 42.

255. *Id.* at 50–53.

D. *Benefits of the ITS for Plants Approach*

Requiring an ITS for plants would address the concerns outlined above, better protect plants, and better accomplish the Act's goals. Such an approach provides additional benefits for plant protection based on the characteristics of protected plants, the location of much of their habitat on federal lands, and an ability to avoid many of the political concerns surrounding species protection on private lands.

In many ways, protecting listed plant species is easier than protecting listed animal species. Individual plants are generally fixed in one location, and, for listed species, these individuals tend to be found together in very limited areas.²⁵⁶ By protecting this area, the entire species is protected. Increasing protection of habitat through the Section 7 consultation process will afford these small-but-vital areas better protection and decrease the chances that they will be destroyed.

Protecting plants through an ITS statement is even more effective because so many protected plant species occur, at least in part, on federal lands. Although Section 7 addresses only federal actions, "the long-term survival of endangered and threatened plant species are particularly dependent on the management of federal lands."²⁵⁷ These lands form important habitat for many plant species. For example, 118 species of proposed or listed plants occur on national forests or national grasslands,²⁵⁸ and sixty-eight species of listed plants occur on BLM lands in California alone.²⁵⁹ Moreover, many of the worst threats these particular listed species face fall under the control of federal agencies. In the continental United States, outdoor recreation appears to pose the greatest threat to listed plants, threatening 35% of rare plant species.²⁶⁰ Of that 35%, over half faced threats from OHVs, and almost one-third faced threats from hiking, bicycling, trail riding, skiing, and recreational climbing combined.²⁶¹ Grazing and trampling by livestock were the second most common threats to listed plants, threatening 33% of listed species.²⁶² On federal lands, these activities fall entirely within the control of federal agencies. Thus, ade-

256. Holsinger & Gottlieb, *supra* note 42, at 206 ("Rare and endangered plants are generally more restricted in distribution than are rare and endangered animals" and "rare and endangered plants usually occur in very few populations.").

257. Bruce A. Stein et al., *Federal Lands and Endangered Species: The Role of Military and Other Federal Lands in Sustaining Biodiversity*, 58 *BIOSCIENCE* 339, 345 (2008).

258. See *Rare Plant Profiles*, U.S. FOREST SERV., <https://perma.cc/VW9G-HEL9>.

259. *California Threatened & Endangered Species*, BUREAU LAND MGMT., <https://perma.cc/Q3L5-USV9>.

260. Haydée Hernández-Yáñez et al., *A Systematic Assessment of Threats Affecting the Rare Plants of the United States*, 203 *BIOLOGICAL CONSERVATION* 260, 262 (2016). Note that this study included rare plants, as defined by NatureServe. *Id.* at 261.

261. *Id.* at 262.

262. See *id.* at 263.

quate protection of listed plants on federal lands alone could eliminate the two most significant threats to listed plants in the continental United States.

Finally, protecting plants by requiring an ITS statement has the advantage of avoiding some of the most contentious ESA issues. As noted above, protecting plants on private land risks comparisons to federal regulation of private land use, a hot-button issue.²⁶³ The ESA's goals often pit private property advocates against conservationists and, "if there is one issue more than any other that has troubled private landowners across the U[nited] S[tates], it is restrictions on the use of their property resulting from conservation measures undertaken within the framework of the federal Endangered Species Act."²⁶⁴

By contrast, focusing on Section 7 consultation avoids many of the private-property conflicts. Certainly, some Section 7 consultations address private actions that require government permits or funding, but by nature, Section 7 consultations focus on agency rather than private action. Of the private actions that are implicated by requiring a plant ITS, the plant ITS would only enhance the consultation process in these cases, not add a new process, and so would be unlikely to incentivize many additional private efforts to eliminate listed species on private lands. Moreover, many consultations deal only with federal lands. Federal actions to protect the plants on federal lands is entirely consonant with traditional legal principles around plant protection,²⁶⁵ and the federal government undoubtedly has constitutional power to protect federal lands and their wild inhabitants.²⁶⁶ In conclusion, including plants within the ITS framework has the potential to dramatically increase plant protection at small political cost.

III. CAN IT BE DONE? OVERCOMING BARRIERS TO PLANT ITS

Recognizing plant ITSs as a standard part of BiOps would increase protections for plants in a way that is politically feasible, theoretically defensible, and appears to meet the Congressional intent behind Section 7. Nevertheless, the Services interpret the language of the Act to preclude issuance of an ITS for plant species.²⁶⁷ The only court to consider the issue, the Ninth Circuit, agreed

263. Fischman et al., *supra* note 70, at 92.

264. Thomas D. Feldman & Andrew E.G. Jonas, *Sage Scrub Revolution? Property Rights, Political Fragmentation, and Conservation Planning in Southern California Under the Federal Endangered Species Act*, 90 ANNALS ASS'N AM. GEOGRAPHERS 256, 256–57 (2000); *see also* Gardner M. Brown Jr. & Jason F. Shogren, *Economics of the Endangered Species Act*, 12 J. ECON. PERSP. 3, 3 (1998) ("The combination of broad benefits and concentrated costs can fan political firestorms, and many landowners complain that the costs of complying with the Act are too high.").

265. *See* Wheeler, *supra* note 83, at 256.

266. *See* Kleppe v. New Mexico, 426 U.S. 529, 540–41 (1976) (holding that the federal government has complete power to regulate and protect wildlife on federal lands).

267. CONSULTATION HANDBOOK, *supra* note 119, at 4-46, 4-49 ("When the consultation involves listed plants, the agency is advised that the Act does not prohibit incidental take of

with the Services in *Center for Biological Diversity v. Bureau of Land Management* (“*CBD v. BLM*”),²⁶⁸ discussed below.²⁶⁹ However, close analysis of the current language of the Act and prior Ninth Circuit decisions show that developing ITS for listed plants not only is permissible, but may in fact be required.

A. Overcoming the Services’ Longstanding Interpretation of Section 7

The Services could adopt a new interpretation of the ITS requirements to include plants of their own accord, or they could be required to do so by a court decision. Change in the first way is certainly the easiest. The Services have frequently changed how they implement the Act, and sometimes the meaning of the Act itself, by changing their interpretations of its requirements in response to changing science, changing politics, and changing social needs.²⁷⁰ Although an “[u]nexplained inconsistency’ in agency policy . . . is a reason for holding an interpretation to be an arbitrary and capricious change from agency practice,”²⁷¹ an agency need only “display awareness that it *is* changing position”²⁷² and “show that there are good reasons for the new policy.”²⁷³ In cases where past interpretations create reliance within a regulated community²⁷⁴ or where new decisions “rest[] upon factual findings that contradict those which underlay [the agency’s] prior policy,”²⁷⁵ agencies face heightened review. Absent these markers, however, agencies are generally able to revise their past interpretations with minimal hurdles. The Services could change their current interpretation of the Act without significant concerns about a court barring the new interpretation, as discussed more fully below.

Convincing a court that the Services are wrong in their current interpretation would be substantially more difficult. According to the definitive quantitative study of judicial review of agency decisions, “long-standing agency interpretations prevailed [in] . . . 82.3%” of cases.²⁷⁶ Moreover, in the Ninth Circuit, panels are bound by past panel decisions, absent reconsideration by the

these species,” and “Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species.”).

268. 833 F.3d 1136, 1150 (9th Cir. 2016).

269. *See infra* Section III.B.

270. *See Bork, supra* note 22, at 101–04.

271. *Encino Motorcars, L.L.C. v. Navarro*, 136 S. Ct. 2117, 2120 (2016) (citing *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005)).

272. *FCC v. Fox TV Stations, Inc.*, 556 U.S. 502, 515 (2009).

273. *Id.*

274. *Encino Motorcars*, 136 S. Ct. at 2126.

275. *See Fox TV Stations*, 556 U.S. at 515; *see also* Gillian E. Metzger & Kevin M. Stack, *Internal Administrative Law*, 115 MICH. L. REV. 1249, 1300 n.347 (2017).

276. Kent Barnett & Christopher J. Walker, *Chevron in the Circuit Courts*, 116 MICH. L. REV. 1, 8 (2017).

Ninth Circuit en banc.²⁷⁷ One prior decision by the Ninth Circuit in particular seems to foreclose this approach, absent the en banc reconsideration.

B. Precedent

Of the appellate courts, only the Ninth Circuit has directly considered whether the ESA requires an ITS for plants,²⁷⁸ and no district courts outside of the Ninth Circuit appear to have addressed it. This is not surprising; as noted, the vast majority of listed plants occur in California (179 plant species) and Hawaii (424 plant species, roughly 45% of listed plant species),²⁷⁹ both Ninth Circuit jurisdictions. Federal lands are also concentrated in the Western United States, so BiOps for plants are more likely to be required in the Ninth Circuit (or, to a lesser extent, the Tenth) than in other circuits.

The Ninth Circuit addressed this issue in the 2016 case *CBD v. BLM*, a chapter in an ongoing series of challenges the CBD brought against the BLM over OHV use in the ISD area, as described in the case study above.²⁸⁰ In *CBD v. BLM*, the CBD argued that the BLM and the FWS issued an inadequate BiOp by failing to include an ITS for the threatened milk-vetch.²⁸¹ The Ninth Circuit rejected this argument under Step One of a *Chevron* analysis,²⁸² holding that “[r]ead in context, the text of the statute is clear: the Endangered Species

277. *B.K. v. Snyder*, 922 F.3d 957, 969 (9th Cir. 2019) (“[C]ircuit precedent may be overturned only en banc.” (en banc) (citing *Miller v. Gammie*, 335 F.3d 889, 899–900 (9th Cir. 2003))).

278. The Eleventh Circuit has held that no ITS is required if a federal action will not result in take. *Def. Wildlife v. U.S. Dep’t Navy*, 733 F.3d 1106, 1112–13 (11th Cir. 2013) (“If the NMFS or the FWS decides that no take is likely from the implementation of a proposed federal action, no incidental take statement is required in the BiOp.”). The Tenth Circuit stated that “[t]he plain terms of the statute and regulations suggest that, at least where there is no evidence that a take may occur, the Service need not issue an incidental take statement,” but ultimately decided not to “definitively opine on this interpretive point.” *WildEarth Guardians v. U.S. Fish & Wildlife Serv.*, 784 F.3d 677, 700–01 (10th Cir. 2015). Neither Circuit has had cause to address the question of whether take under Section 7 is limited to the narrower definition of Section 9 or the broader definition in Section 3(19), as used elsewhere in the Act, leaving open the possibility that a plant ITS would be upheld in both circuits.

279. See *ECOS, Listed Species Believed to or Known to Occur in California*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/X9CG-HMLP>; *ECOS, Listed Species Believed to or Known to Occur in Hawaii*, U.S. FISH & WILDLIFE SERV., <https://perma.cc/X435-UXVP>.

280. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1143 (9th Cir. 2016).

281. *Id.*

282. Under the two-step *Chevron* analysis, a court must first determine whether “Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress. . . . [I]f the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency’s answer is based on a permissible construction of the statute.” *Chevron, U.S.A., Inc. v. Nat’l Res. Def. Council, Inc.*, 467

Act does not require BiOps to contain [ITS] for threatened plants.”²⁸³ Two key aspects of the Ninth Circuit’s reasoning, reviewed below, bear on the question of whether the Services could change their mind and implement a new ITS approach.

First, the CBD noted that Section 7 of the ESA requires consultation between the FWS or NMFS and the action agency (in this case the BLM) for “any endangered species or threatened species.”²⁸⁴ Because an ITS is required whenever the FWS or NMFS concludes that taking an endangered or threatened species is incidental to the agency action and will not jeopardize the continued existence of the species but will still have negative impacts on the species,²⁸⁵ and because species as defined in the Act includes plants, they argued the court should require the FWS to prepare an ITS for listed plants.²⁸⁶ The court acknowledged that this was a logical interpretation when reading Section 7 in isolation, but held that this section must be read in the context of the entire statutory scheme.²⁸⁷

The court looked to the language of the ITS provision in Section 7:

Under the statute, when the Fish and Wildlife Service concludes in its BiOp that “the *taking* of an endangered species or a threatened species incidental to the agency action will not” jeopardize the continued existence of a species, but will nevertheless adversely impact a species, it must issue a statement that “specifies the impact of such *incidental taking* on the species.”²⁸⁸

The court reasoned that an ITS need only be required for a species that can be incidentally taken. The court noted that “[S]ection 9 prohibits the taking of ‘fish or wildlife’ only,” and reasoned that because Section 9 used the term take only with respect to fish and wildlife, not with respect to plants, that plants could not, in fact, be taken at all within the meaning of the Act.²⁸⁹ Because they could not be taken, or, at a minimum could not be *incidentally* taken, the Ser-

U.S. 837, 842–43 (1984). This has ramifications for the Services’ future ability to reinterpret the statute.

283. *Ctr. for Biological Diversity*, 833 F.3d at 1145. The court also opined that the BLM interpretation not requiring an ITS would be “reasonable” under a step two analysis. *Id.*

284. 16 U.S.C. § 1536(a)(2).

285. *Id.* § 1536(b)(4).

286. *Id.* § 1532(16); *Ctr. for Biological Diversity*, 833 F.3d at 1143 (“The Center contends that the use of the term ‘species,’ rather than a different term that might restrict the provision to fish or wildlife, signifies that an Incidental Take Statement is required for *all* species, including plants.”).

287. *Ctr. for Biological Diversity*, 833 F.3d at 1143 (citing *Food & Drug Admin. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000)).

288. *Id.* at 1143 (emphasis added) (citing 16 U.S.C. § 1536(b)(4)).

289. *Id.*

vices were not required to issue a statement specifying the impact of this impossible taking.²⁹⁰ In short, the Ninth Circuit held:

To understand what it means to incidentally take a species, one must understand what it means to take a species; to understand what it means to take, one necessarily looks to Section 9. Because Section 9 applies to animals only, it follows that one can neither “take” nor “incidentally take” a plant.²⁹¹

Second, the court looked to two conflicting Ninth Circuit cases for precedent. First, in the 2001 decision *Arizona Cattle Growers’ Ass’n v. U.S. Fish and Wildlife Service*,²⁹² the Ninth Circuit confronted the question of whether the FWS could prepare an ITS when they determined that the species in question was not present in the action area and was unlikely to be taken.²⁹³ En route to determining that the FWS could not prepare an ITS under those circumstances, the court noted there is one standard for ‘taking’ within both Section 7(b)(4) and Section 9, stating, “[a]bsent an actual or prospective taking under Section 9, there is no ‘situation’ that requires a Section 7 safe harbor provision.”²⁹⁴ This would have controlled the outcome in *CBD v. BLM*, but a 2012 opinion conflicts directly with *Arizona Cattle Growers’* take interpretation and significantly narrows *Arizona Cattle Growers’*.²⁹⁵ In that case, *Center for Biological Diversity v. Salazar*,²⁹⁶ the Ninth Circuit again confronted the question of whether an ITS was required where no Section 9 take could occur. The court determined:

[E]xemption from Section 9 take liability is not the sole purpose of the ITS. If the amount or extent of taking specified in the ITS is exceeded, reinitiation of formal consultation is required. . . . ‘Thus, the ITS serves as a check on the agency’s original decision that the incidental take of listed species resulting from the proposed action will not [jeopardize the continued existence of the species].’²⁹⁷

Based on this reading of the purpose of the ITS, the purpose of the statute, and the plain meaning of the broader text, the *Salazar* court concluded “exemption from Section 9 take prohibitions does not negate the separate requirement that

290. *Id.*

291. *Id.* at 1145.

292. 273 F.3d 1229 (9th Cir. 2001).

293. *Id.* at 1240.

294. *Id.*

295. *Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 910 (9th Cir. 2012).

296. *Id.*

297. *Id.* at 911 (quoting *Nat. Res. Def. Council, Inc. v. Evans*, 279 F. Supp. 2d 1129, 1182 (N.D. Cal. 2003)).

the [FWS] ‘will provide’ an ITS along with its [BiOp].”²⁹⁸ The *Salazar* court characterized *Arizona Cattle Growers’* as “inapposite,” focusing on the fact that “no listed species were present in the area,” which meant that “the agency ‘ha[d] no rational basis to conclude that a take [would] occur incident to the otherwise lawful activity,’”²⁹⁹ obviating the need for an ITS. This narrows *Arizona Cattle Growers’* virtually to the facts of that case.

The Ninth Circuit in *CBD v. BLM* recognized the tension between the cases, but determined that “fully reconciling the two cases, fortunately, is not necessary to resolve the issue at hand.”³⁰⁰ Because *Salazar* dealt with the take of fish, not plants, the court fell back on its reasoning that an ITS could not logically be required for plants and rejected the *Salazar* approach.³⁰¹

CBD v. BLM created a particular hurdle for an FWS reinterpretation of the ITS requirement, because the court interpreted the plain text of the statute in a *Chevron* Step One analysis. The difference between deciding a case at Step One, instead of Step Two, has lasting implications for the agency’s ability to revise its interpretation.³⁰² By deciding a case at Step One, the court is saying that the legislature wrote the statute with a clear meaning intended for the term in question.³⁰³ Contrast this with deciding the case at Step Two, in which the court finds the interpretation from the agency reasonable and defers to the agency’s expertise, but which leaves open other avenues of “reasonable” or “permissible” interpretation.³⁰⁴

If the Services were to reconsider their interpretation of Section 7 and require an ITS for plants, the Ninth Circuit could have an opportunity to reconsider the holding of *CBD v. BLM*, although the court need not overturn that decision to allow the Services to require an ITS. When the Ninth Circuit considers a new agency interpretation of a statute the Ninth Circuit has previously considered, it engages in something more nuanced than normal *Chevron* analysis: “A court’s prior judicial construction of a statute trumps an agency construction otherwise entitled to *Chevron* deference only if the prior court decision holds that its construction follows from the unambiguous terms of the

298. *Id.* (quoting 50 C.F.R. § 402.14(i)(1) (2011)).

299. *Id.* at 910 (quoting *Arizona Cattle Growers’*, 273 F.3d at 1242–44).

300. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1145 (9th Cir. 2016).

301. *Id.*

302. See Richard Murphy, § 8434 *Chevron* Step One, in 33 FEDERAL PRACTICE & PROCEDURE (Charles Alan Wright & Arthur R. Miller eds., 2d ed.); see generally *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 986 (2005).

303. Murphy, *supra* note 302.

304. *Id.*

statute and thus leaves no room for agency discretion.”³⁰⁵ The question then becomes what, exactly, the Ninth Circuit held in *CBD v. BLM*.

The *CBD* decision was narrow—the Ninth Circuit resolved one issue in a Chevron Step One analysis, holding that “read in context, the text of the statute is clear: the Endangered Species Act does not *require* BiOps to contain Incidental Take Statements for threatened plants.”³⁰⁶ This does not mean that the Services could not *elect* to prepare an ITS for plants; the court did not consider that issue. If the Services changed their policy, they should face judicial review with a clean slate and would likely prevail in the subsequent *Chevron* analysis. The ESA gives the Services broad authority to protect listed species. In particular, Section 7(a)(1) of the Act gives agencies significant power to conserve listed species. The Ninth Circuit in particular has held the Section “specifically directs that the Secretary ‘shall’ use programs administered by him to further the conservation purposes of the ESA.”³⁰⁷ Leaving aside Section 7(a)(2), this provision in Section 7(a)(1) of the Act gives the Services the flexibility they need to require ITS for plants,³⁰⁸ even if current Ninth Circuit precedent bars *requiring* the services to do so.

305. Garfias-Rodriguez v. Holder, 702 F.3d 504, 512 (9th Cir. 2012) (citing *Brand X Internet Servs.*, 545 U.S. at 982).

306. *Ctr. for Biological Diversity*, 833 F.3d at 1145 (emphasis added).

307. *Carson-Truckee Water Conservancy Dist. v. Clark*, 741 F.2d 257, 261 (9th Cir. 1984).

308. To assure themselves of the most deferential reading of such a policy by the judiciary, the Services should promulgate a regulation through notice and comment rulemaking requiring the ITS for plants approach. The Services lay out much of the current policy for consultations in their *Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act*, but courts have not consistently afforded the consultation handbook *Chevron* deference. The Eleventh Circuit granted the handbook deference in *Miccousukee Tribe of Indians v. United States*, 566 F.3d 1257, 1273 (11th Cir. 2009). A California district court granted the handbook lesser *Skidmore* deference. See *Pacific Coast Fed’n of Fishermen’s Ass’ns v. Gutierrez*, 606 F. Supp. 2d 1195, 1209 (E.D. Cal. 2008) (citing *Skidmore v. Swift & Co.*, 323 U.S. 134, 139–40 (1944)). The Ninth Circuit has not squarely addressed the issue but held that the *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, a very similar guidance manual for incidental take permits under Section 10, does not merit *Chevron* deference. *N. Cal. River Watch v. Wilcox*, 633 F.3d 766, 779 (9th Cir. 2010) (collecting citations from other circuits and holding that, “[a]lthough issued after public notice and comment, the [HCP/ITP] Handbook is not deserving of *Chevron* deference” (internal citations omitted)); see *Christensen v. Harris Cnty.*, 529 U.S. 576, 587 (2000) (“Interpretations such as those in opinion letters—like interpretations contained in policy statements, agency manuals, and enforcement guidelines, all of which lack the force of law—do not warrant *Chevron*-style deference.”); see generally U.S. FISH & WILDLIFE SERV., HABITAT CONSERVATION PLANNING AND INCIDENTAL TAKE PERMIT PROCESSING HANDBOOK (Dec. 21, 2016), <https://perma.cc/PNQ7-FKDH>.

C. *A Textual Interpretation of the ITS Requirements*

The Ninth Circuit precedent on this issue might be worth revisiting, and other circuits should not blindly follow *CBD v. BLM*. Careful analysis of the statute reveals that the Act distinguishes between different types of take—general take and at least two subtypes, incidental take and prohibited take—all of which are treated slightly differently in different sections of the Act.³⁰⁹

The Act talks about take in three ways: (1) the primary statutory definition of the unmodified term standing alone (“take”),³¹⁰ which refers to the actions that “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect”³¹¹ any species, including plants;³¹² (2) the term take as modified by the prohibition against take of fish and wildlife (“prohibited take”);³¹³ and (3) the term take modified by the qualifier that the take is incidental to and not the purpose of an action (“incidental take”).³¹⁴ The language of the Act carefully distinguishes

309. *See, e.g.*, 16 U.S.C. § 1533 (a)(3)(B)(iii) (explicitly mentioning Section 9 taking); *id.* § 1537 (b)(3) (encouraging “foreign persons who directly or indirectly take fish or wildlife or plants . . . to develop and carry out . . . conservation practices designed to enhance such fish or wildlife or plants and their habitat”).

310. *Id.* § 1532(19).

311. *Id.* §§ 1532(19), 1538(a)(1)–(2).

312. *Id.* § 1532(16) (defining species to include plants). This definition gives rise to another argument for including plants in an ITS. “If [a] word or phrase is defined in the statute (federal statutes frequently collect definitions in a “definitions” section), or elsewhere in the United States Code, then that definition governs if applicable in the context used.” CONG. RSCH. SERV., 97-589, STATUTORY INTERPRETATION: GENERAL PRINCIPLES AND RECENT TRENDS 7 (1982) (citing *Colautti v. Franklin*, 439 U.S. 379, 392 (1979) and *Lawson v. Suwannee Fruit & S.S. Co.*, 336 U.S. 198, 201 (1949), among other sources). Moreover, “[a] term appearing in several places in a statutory text is generally read the same way each time it appears.” *Ratzlaf v. United States*, 510 U.S. 135, 143 (1994). The CBD correctly pointed out that the text of Section 7(b)(4) refers specifically to “species,” and that term includes fish and wildlife and plants throughout the statute. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1143 (9th Cir. 2016); *see* 16 U.S.C. § 1532(16). Because species is defined in Section 4 as including “any subspecies of fish or wildlife or plants,” *id.*, and Section 7(b)(4) requires the agency to ensure “the taking of an endangered species or a threatened species incidental to the agency action will not violate [Section 7(a)(2)],” *id.* § 1536(b)(4), under a plain text reading, plants would clearly be included in the phrase “the taking of an endangered species or a threatened species,” *id.* The court in *Center for Biological Diversity* considered and rejected this argument, and thus the article does not dwell on it. *See Ctr. for Biological Diversity*, 833 F.3d at 1143 (citing *Gustafson v. Alloyd Co.*, 513 U.S. 561, 569 (1995)). Another court might find it more persuasive.

313. *See* 16 U.S.C. § 1538(a)(1) (prohibiting taking “with respect to any endangered species of fish or wildlife” by “any person”).

314. *See id.* § 1536(b)(4) (discussing incidental take in the context of agency consultation); *id.* § 1539(a)(1) (discussing incidental take permits for private actors); *see also* 50 C.F.R. § 402.02 (2019) (defining “incidental take” as “takings that result from, but are not the purpose of, carrying out an otherwise lawful activity”).

among the different kinds of take throughout.³¹⁵ The following sections will outline the distinguishing features of “prohibited take” and “take” more generally, and then explain that “incidental take” is just a form of the more general take, not prohibited take, supporting an overall reading of the Act to provide stronger protections to plants.

1. “Prohibited Take”

Section 9(a)(1)(B) of Act states “with respect to any endangered species of fish or wildlife listed pursuant to Section 4 of this Act it is unlawful for any person to . . . take any such species.”³¹⁶ This is prohibited take. When the Act refers to this kind of prohibited take, the Act makes the reference clear by calling it prohibited take, by mentioning “fish or wildlife,” or by referencing Section 9(a)(1)(B), which is titled “prohibited acts.”³¹⁷

For example, in Section 9 itself, the language that restricts the take prohibition ties the term take back to the phrase “fish or wildlife.”³¹⁸ It states, take any “*such species*” in every subsection of Section 9(a)(1); *such species* clearly indicates that the “take” discussed is restricted to fish and wildlife.³¹⁹ Section 9 never uses the term take alone, with nothing more, to refer to the take of fish and wildlife. Nothing in Section 9 suggests take does not inherently include take of plants.

Myriad other examples follow a similar pattern of distinguishing prohibited take. In Section 4(d), the Act discusses prohibited takings, referring to them as “the taking of resident species of fish or wildlife.”³²⁰ In Section 6, discussing cooperative agreements with states, the Act again qualifies the term “taking” when discussing prohibited take, describing prohibited actions as described in “[Section 9(a)(1)] with respect to the taking of any resident endangered or threatened species.”³²¹ Section 10 states that “the Secretary may permit . . . any taking otherwise prohibited by [S]ection 9(a)(1)(B) if such taking is incidental to . . . an otherwise lawful activity.”³²² Here, the language specifically

315. *See infra* Part III.C.2.

316. *See* 16 U.S.C. § 1538(a)(1)(b).

317. *See id.* § 1538.

318. *See id.* § 1538(a)(1).

319. *See id.*

320. *Id.* § 1533(d).

321. *Id.* § 1535(c)(1)(E)(ii). Section 6 is the only portion of the Act that arguably uses the term “species” in a way that does not include plants, when it allows approval of a state program to conserve listed species to focus on listed species of fish and wildlife. *Compare id.* § 1535(c)(1), *with id.* § 1535(c)(2). This goes against the Act’s explicit definition of species, which includes plants. *Id.* § 1532(16) (“The term ‘species’ includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.”).

322. *Id.* § 1539(a)(1)(B).

mentions Section 9 prohibited take of fish and wildlife by including “[S]ection 9(a)(1)(B)” in the text.³²³ This goes on throughout the Act—the legislature consistently limited take to fish and wildlife when it wanted the term limited in that way. This directly undercuts the holding in *CBD v. BLM*.

Perhaps most importantly, however, this same distinction shows up in the consultation language in Section 7. When the legislature intended to exempt the take allowed under an ITS, through the language in Section 7(o), it states “[n]otwithstanding sections 4(d) and 9(a)(1)(B) . . . any taking that is in compliance with the terms and conditions specified in a written statement provided under subsection (b)(4)(iv) shall not be considered to be a *prohibited taking* of the species concerned.”³²⁴ This is the actual shield from liability.³²⁵ Section 7(o) specifically refers to 9(a)(1)(B), showing that the take contemplated in that section was take of fish and wildlife only.³²⁶ Thus, across the Act, the prohibited take of fish and wildlife is distinguished from take of any listed species, which includes plants.

2. *Take*

In contrast to the Section 7(o) language, Section 7(b)(4), which triggers the ITS, references neither Section 9, nor fish and wildlife exclusively;³²⁷ every statement in Section 7(b)(4) refers to taking of “an endangered species or threatened species.”³²⁸ Species is defined to include plants.³²⁹ In terms of the dual purposes of Section 7 consultation (creating a shield to Section 9 liability and protecting the integrity of the no-jeopardy opinion), Section 7(o), which does reference *prohibited* taking, creates the shield,³³⁰ while Section 7(b)(4), referencing taking more generally, is focused on ensuring agency actions do not jeopardize the continued existence of a listed species.³³¹ The contrast in the way the term “take” is conditioned and discussed in Section 7(o) versus Section 7(b)(4) strongly suggests the protections provided by the language in Section 7(b)(4) regarding take apply to fish and wildlife *and* plants.³³² This is key, because Section 7(b)(4) references “incidental take” and creates the requirement

323. *Id.*

324. *Id.* § 1536(o) (emphasis added).

325. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1144 (9th Cir. 2016); 16 U.S.C. § 1536(o).

326. 16 U.S.C. § 1536(o).

327. *See id.* § 1536(b)(4).

328. *Id.*

329. *Id.* § 1532(16).

330. *See id.* § 1536(o).

331. *See id.* § 1536(b)(4) (i.e., by specifying the impact of the taking on the species, requiring protection measures to minimize that impact, and setting forth terms and conditions to limit the impact).

332. *See id.*

for an ITS. Contrasting the general take language in Section 7(b)(4), which creates the ITS requirement, with the prohibited take language in 7(o), which creates the associated liability shield, indicates that the ITS should be required for general take (including plants), not prohibited take (limited to animals). “[Where Congress includes particular language in one section of a statute but omits it in another . . . it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”³³³ Thus an “incidental take,” absent any additional modifying language, refers to take of any kind of species.

The Ninth Circuit appears to have embraced a similar reading in *Salazar*. There, the Court clarified “[t]he ESA requires an ITS for “*the taking* of an endangered species or a threatened species incidental to the agency action, not the *prohibited* taking.”³³⁴

This is also in keeping with how take is used in other places throughout the Act. The legislature consistently used take to mean exactly what the Act said it means, in the definitions section, without the added limit that it apply only to fish and wildlife endorsed by the *CBD v. BLM* Court. For example, the Act uses “take” to explicitly refer to take of plants in Section 8(b)(3), discussing “foreign persons who directly or indirectly take fish or wildlife or plants in foreign countries.”³³⁵ The Act also uses the term take to describe activities that are not illegal under the Act³³⁶ or even to describe harvest of unlisted species.³³⁷ This is inconsistent with an understanding that take always refers to Section 9’s prohibited take.

Finally, in other ESA contexts, the Services themselves interpret the general term take to apply to plants. For example, Section 10(b)(2) allows the Services to allow, for a limited period, some activities that would otherwise be illegal under the Act to avoid “substantial economic loss to persons who [formerly] . . . derived a substantial portion of their income from the *lawful taking of any listed species*.” Using this authority, the Services promulgated regulations allowing FWS to issue a permit for activities harming plants that would otherwise be prohibited by the Act.³³⁸ In other words, the Services implicitly relied on the idea that “taking of any listed species” could refer to actions that took plant species.

333. *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)).

334. *Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 910 (9th Cir. 2012) (citation omitted) (emphasis in the original).

335. 16 U.S.C. § 1537(b)(3).

336. *See id.* § 1538(c)(2).

337. *See id.* §§ 1538(d)(1), 1538(e), 1538(f).

338. *See* 50 C.F.R. § 17.63 (2019).

These examples cut directly against the *CBD v. BLM* court's conclusion that "one can neither 'take' nor 'incidentally take' a plant."³³⁹ This undercuts the reasoning that the court used to conclude that the FWS was not required under Section 7 to issue an ITS for protected plants in its BiOps. Given the tension between *CBD v. BLM* and *Salazar*, and given the questionable basis for the holding in *CBD v. BLM*, advocates might consider asking the Ninth Circuit to overturn *CBD v. BLM*, in spite of the statistically long odds discussed above. Regardless, this analysis strongly suggests ESA Section 7(a)(2) offers ample statutory authority for the Services to require plant ITSs.

CONCLUSION

Plants conservation is essential to preserve society, to protect biodiversity, and to fulfill the purposes of the ESA. Nevertheless, plants are underprotected by the current interpretation of the ESA, despite opportunities to afford better protections under the language of the Act. In 1982, Congress amended Section 7 of the ESA, adding Section 7(o) to permit take of listed fish and wildlife when the Services determine in a BiOp that such taking will not jeopardize the "continued existence" of the species.³⁴⁰ Congress also added Section 7(b)(4), establishing safeguards to strengthen the consultation process and require that federal actions include monitoring and other measures to ensure that they would, in fact, not jeopardize listed species of fish, wildlife, and, as shown here, plants. The Services and the courts, however, have not extended these protections to plants. This follows a long history of affording imperiled plants lesser protection than other organisms. But plants are important; indeed, we literally cannot live without them. They should be given the same protections as fish and wildlife, particularly given the challenges they face from a changing climate. But absent that bold step, extending the ITS requirement to plants is a small step that will provide them with significantly enhanced protection and better accomplish the goals of the ESA.

339. *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 833 F.3d 1136, 1145 (9th Cir. 2016).

340. *See* 16 U.S.C. § 1536(o).