# THE CARROT OR THE STICK?: CONSERVING CRITICAL HABITAT UNDER THE ESA

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## INTRODUCTION

This Article addresses the requirement to designate critical habitat for a listed species under the federal Endangered Species Act (ESA).[1] This requirement is evaluated in the context of the ESA's statutory purposes and its framework for species conservation and protection. The Article describes the ESA's statutory and regulatory requirements for species conservation and protection and for the listing and critical habitat determinations.

This Article focuses on the critical habitat designation requirement that is triggered by an agency's decision to list a species as threatened or endangered under the ESA. The ESA requires the relevant federal agencies, with certain exceptions, to list a species when the statutory and regulatory requirements require that action. At the time of listing, the agency must designate the species' critical habitat (i.e., the habitat needed for species conservation and requiring protection).[2] The ESA provides designation exceptions for economic, national security, and "other relevant" impacts.[3] Among other considerations, the agency is directed to weigh the benefits of exclusion against conservation unless exclusion may result in species extinction.[4]

This Article addresses the critical habitat designation requirement, process, application, and compliance with ESA standards. The Article also discusses challenges with, and impediments to, critical habitat designation in light of changing administrative priorities and shifting political priorities. Further, the Article discusses whether legislative, regulatory, and policy changes could improve the designation process and/or create incentives for critical habitat preservation and conservation outside the designation process. Consideration of incentive-based options seems particularly relevant based on recent decisions and proposals regarding ESA implementation, administrative agency authority, regulatory enforcement, and proposed and anticipated changes to federal environmental statutes, regulations, and policy.

While it describes the ESA's history and requirements generally, the scope of this Article's analysis is limited to wildlife under the jurisdiction of the United States Fish and Wildlife Service (FWS).[5] Part I of this Article

1. *See generally* 16 U.S.C. § 1531 (2024) (providing context for why critical habitat designation emerged).

2. 16 U.S.C. § 1533(a)(3)(A) (2024); 16 U.S.C. § 1533(b)(2) (2024).

3. 16 U.S.C. § 1533(b)(2) (2024).

4. *Id.*

5. The FWS administers the ESA for "terrestrial, freshwater, and catadromous species," and the National Marine Fisheries Service (NMFS) administers the Act for "marine and anadromous species."

addresses the ESA's history, development, and legal framework and the standards for species listing. Part II describes the critical habitat designation requirement, including the mandate to balance conservation needs with other interests when considering designation. Part III discusses some impediments to initiating designation and the effect of anticipated challenges to proposed designations. Part IV evaluates the roles of mandates and incentives and discusses how those options may be balanced based on changing federal administrations and agency priorities. This Part also proposes options to promote compliance through incentive-based approaches within and outside the designation process to conserve habitat that is critical to achieving the ESA's conservation objectives for listed species.

## I. ENDANGERED SPECIES ACT

### *A. Conservation Prior to the ESA*

As enacted in 1973, the ESA reflects a desire to ensure the nation's imperiled wildlife, fish, and plant species—*and their habitat*—will be protected and conserved.[6] The ESA recognizes the effect of economic growth and development without sufficient concern for conservation on the viability of an imperiled species.[7] In addition, it notes concern about other species "in danger of or threatened with extinction" and about the loss of species with "esthetic, ecological, educational, historical, recreational, and scientific value" to the United States.[8] Reflecting those concerns, the statute's purpose is to establish both "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and "a program for the conservation of such endangered species and threatened species."[9]

The United States Fish and Wildlife Service (FWS) traces the ESA's origin to the Lacey Act of 1900, which was prompted by concerns about the

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PERVAZE A. SHEIKH & ERIN H. WARD, CONG. RSCH. SERV., R46677, THE ENDANGERED SPECIES ACT: OVERVIEW AND IMPLEMENTATION 6 (2021).

6. *See* § 1531.
7. *See generally* § 1531(a)(1).
8. § 1531(a)(2)–(3).
9. § 1531(b).

passenger pigeon's survival.[10] The Lacey Act responded to those concerns[11] by prohibiting transport of unlawfully taken wildlife across state lines.[12] In 1918, Congress enacted the Migratory Bird Treaty Act, which as currently codified includes wildlife protections from international treaties signed by the United States between 1916 and 1976.[13]

During the 1930s and 1940s, Congress enacted several other laws promoting wildlife protection and conservation. These laws included the Migratory Bird Hunting and Conservation Stamp Act, the Fish and Wildlife Coordination Act, and the Pittman-Robertson Wildlife Restoration Act.[14] In 1940, Congress passed the Bald and Golden Eagle Protection Act (BGEPA), which established protections against the take or possession of bald and golden eagles—and their nests.[15] BGEPA provided specifically for take authorization for scientific and other purposes.[16]

From the 1960s until the ESA's passage in 1973, Congress passed additional wildlife protection legislation. In the mid-1960s, the United States Department of the Interior (DOI) created the Committee on Rare and Endangered Wildlife Species and asked Congress to enact legislation to protect endangered wildlife species.[17] In response to increasing awareness about environmental and wildlife protection problems, Congress passed the Endangered Species Preservation Act of 1966 (ESPA).[18] This legislation empowered DOI to list native fish and wildlife species as endangered.[19] This law's "endangered" definition referenced species that the DOI determined were "threatened with extinction . . . because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of

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10. *Endangered Species Act Milestones: Pre 1973*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/esa50/our-history/pre-1973 (last visited Mar. 30, 2026) [hereinafter *ESA Milestones: Pre-1973*]; *see generally* 16 U.S.C. § 701 (2024) (Lacey Act § 10); This statute includes the Lacey Act's migratory bird conservation and preservation provisions. *Id*. Subsequent Lacey Act amendments also are codified in Title 16. 16 U.S.C. § 3372 (2024); *see generally* § 3371; *ESA Milestones: Pre 1973*.

11. According to the FWS, the passenger pigeon was "declared extinct when the last known individual . . . die[d] in the Cincinnati Zoo" in 1914. *ESA Milestones: Pre-1973, supra* note 10.

12. *Id.*; *see* § 3372(a).

13. *See* § 703; *see also ESA Milestones: Pre 1973*, *supra* note 10.

14. § 718; *see* §§ 661–666e (2024) (requiring the FWS to make recommendations to minimize impacts on fish and wildlife resources associated with federal actions affecting streams and water bodies); § 669 (coordinating with state governments to pass wildlife conservation laws); § 2901(b); *ESA Milestones: Pre-1973*, *supra* note 10 (providing funding via taxes for "states to acquire wildlife habitat").

15. § 668.

16. *See* § 668a (authorizing the "taking, possession, and transportation of specimens" for scientific, exhibition, religious, or agricultural or wildlife protection purposes).

17. *ESA Milestones: Pre-1973*, *supra* note 10.

18. *Id.*; *see* Endangered Species Preservation Act of 1966, Pub. L. No. 89-669, 80 Stat. 926 (1966).

19. Endangered Species Preservation Act § 1(c).

overexploitation, disease, predation, or because of other factors, and that its survival requires assistance."[20] While the ESPA did not include a requirement to designate critical habitat, it did authorize habitat acquisition for endangered species to be included in the National Wildlife Refuge System.[21]

Three years later, the 1966 law was amended and renamed the Endangered Species Conservation Act of 1969.[22] This legislation improved protection for species "threatened with worldwide extinction."[23] During that year, the National Environmental Policy Act and the first state endangered species act also were enacted.[24] In the early 1970s and prior to passage of the ESA, Congress created the United States Environmental Protection Agency (EPA) and enacted several environmental protection statutory programs, including the Clean Air Act, Marine Mammal Protection Act, and Clean Water Act.[25]

On December 28, 1973, the 93rd Congress enacted the ESA.[26] The legislation reflected the need for action to protect imperiled wildlife, fish, and plant species to avoid extinction.[27] President Nixon's signing statement declared that:

> Nothing is more priceless and more worthy of preservation than the rich array of animal life with which our country has been blessed. It is a many-faceted treasure, of value to

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20. *Id.*

21. *Id.* §§ 2(b), 4(a); *see* Endangered Species Act of 1973, Pub. L. No. 93-205, § 5, 87 Stat. 884, 889 (1973).

22. *ESA Milestones: Pre-1973*, *supra* note 10. *Compare* Endangered Species Preservation Act of 1966, Pub. L. No. 89-669, § 1–3, 80 Stat. 926, 927, (1966), *with* Endangered Species Conservation Act of 1969, Pub. L. No. 91-135, § 12(d), 83 Stat. 275, 283 (current version at 16 U.S.C. § 668a).

23. Endangered Species Conservation Act § 5; *ESA Milestones: Pre-1973*, *supra* note 10.

24. *ESA Milestones: Pre-1973*, *supra* note 10.

25. *Endangered Species Act Milestones: 1970s*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/esa50/our-history/1970s (last visited Apr. 15, 2026); *Summary of the Clean Air Act*, EPA, https://www.epa.gov/laws-regulations/summary-clean-air-act (last updated Feb. 23, 2026); 42 U.S.C. § 7401 (2023) (requiring promulgation of air emissions regulations and creation of air quality standards); 16 U.S.C. § 1371(a) (2024) (establishing marine mammal take and import moratorium, and recognizing need for marine mammal conservation); *see* 16 U.S.C. § 1361 (2024); *Summary of the Clean Water Act*, EPA, https://www.epa.gov/laws-regulations/summary-clean-water-act (last updated Feb. 23, 2026); 33 U.S.C. §§ 1251, 1252 (2023) (authorizing requirements and programs to regulate pollutant discharges and establish water quality standards).

26. Endangered Species Act of 1973 § 1; Statement on Signing the Endangered Species Act of 1973, 1 PUB. PAPERS 1027–28 (Dec. 28, 1973).

27. Endangered Species Act of 1973 § 2; *see* Mitch Merry, *Celebrating 40 Years Of The Endangered Species Act*, ENDANGERED SPECIES COAL. (Dec. 28, 2013), https://www.endangered.org/celebrating-40-years-of-the-endangered-species-act/#.

> scholars, scientists, and nature lovers alike, and it forms a vital part of the heritage we all share as Americans.[28]

In this statement, he further characterized the ESA as an "important step toward protecting a heritage which we hold in trust to countless future generations of our fellow citizens[,]" noting American's "lives will be richer, and America will be more beautiful in the years ahead, thanks to the [ESA]."[29]

The original enactment of the ESA authorized acquisition of lands and waters through existing statutory authorities,[30] but it did not include a requirement to designate critical habitat.[31] The critical habitat provisions were added through the 1978 ESA amendments.[32] The House Report addressing the legislative amendments stated that "[t]his one small section has developed into one of the most significant portions of the entire statute."[33] That law required the federal agencies to designate critical habitat "to the maximum extent prudent" and specified the timing provisions for designation determinations.[34] The 1978 amendments also specified the critical habitat designation allowed—but did not require—critical habitat designation for species that had been listed prior to this legislation.[35] In 1982, Congress amended the critical habitat designation timing provisions to allow additional time to publish a final rule designating critical habitat to the "maximum extent prudent and determinable."[36]

### *B. Statutory Policy and Purposes*

In enacting the ESA, Congress included its "findings and declaration of purposes and policy" for enacting the statutory framework.[37] Among the

28. 1 PUB. PAPERS, *supra* note 26.

29. *Id.* at 1028.

30. The ESA leveraged land acquisition authority from existing environmental statutes, such as the Fish and Wildlife Coordination Act, Fish and Wildlife Act of 1956, and Migratory Bird Conservation Act. *See generally* Endangered Species Act of 1973 § 5. These statutes had provisions authorizing the acquisition of land or waters for conservation purposes. *See, e.g.*, Fish and Wildlife Act of 1956, Pub. L. No. 1024, 70 Stat. 119 (1956) (codified at 16 U.S.C. § 742a (2024)); *cf.* Fish and Wildlife Coordination Act, Pub. L. No. 85-624, 72 Stat. 563 (1958) (codified as amended at 16 U.S.C. §§ 661–666 (2024)); and Migratory Bird Conservation Act, Pub. L. No. 1024 ch.1036, 70 Stat. 1119 (1956); Act of Aug. 14, 1946, ch. 965, 70 Stat. 1119 (codified at 16 U.S.C. §§ 661–666 (2024)).

31. *See* Endangered Species Act of 1973 §§ 1–17.

32. Endangered Species Act Amendments of 1978, Pub. L. No. 95-632, § 11(1), 92 Stat. 3751, 3764 (1978) (codified as amended at 16 U.S.C.§ 1533 (2024)).

33. H.R. REP. NO. 95-1625, at 731 (1978).

34. *Id.* at 740.

35. Endangered Species Act Amendments of 1978 § 11(1).

36. 16 U.S.C. § 1533(a)(3)(A)(i) (2024).

37. § 1531.

findings was a concern the "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*."[38] The statutory findings also included concern that "other species . . . have been so depleted in numbers that they are in danger of or threatened with extinction" and also that "these species . . . are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people."[39]

In addition, Congress specified statutory purposes: "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and" to effectuate the related treaties and conventions to which the United States was a signatory.[40] The ESA's statutory policy provisions directed federal agencies to "seek to conserve endangered species and threatened species[,] . . . [use] their authorities in furtherance of the [ESA's] purposes[, and] cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species."[41]

The ESA's history and development demonstrate the basis for its focus on measures and actions to conserve imperiled species, which is supported by the judicial and congressional recognition of the need for its broad protections. The United States Supreme Court has noted the "plain intent of Congress in enacting [the] statute was to halt and reverse the trend toward species extinction, whatever the cost."[42] The Supreme Court also called the ESA "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[43] Further, the Supreme Court stated, "beyond doubt[,] . . . Congress intended endangered species to be afforded the highest of priorities."[44] Other decisions have similarly recognized the lofty goals and specific requirements of the ESA's conservation mandates.[45]

The ESA originated from a history of actions recognizing the need to take action to avoid extinction of species in peril and identify those species threatened with extinction. The ESA and its predecessors recognized the

38. § 1531(a)(1) (emphasis added).
39. § 1531(a)(2)–(3).
40. § 1531(b).
41. § 1531(c)(1)–(2).
42. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 184 (1978).
43. *Id.* at 180.
44. *Id*. at 174.
45. *See, e.g.*, Nat. Res. Def. Council, Inc. v. U.S. Dep't of Interior, 13 F. App'x 612, 615 (9th Cir. 2001) (Pregerson, J., dissenting) (emphasizing the ESA requirements to "identify endangered species, designate their 'critical habitats,' and develop and implement recovery plans.").

need to protect species from the direct threats they faced. The statutory amendments to the ESA and its implementing regulations created a program designed to protect not only the species but also the critical habitat needed for their survival. In practice, the ESA's program of species protection has failed to achieve all its goals, necessitating consideration of options and incentives to achieve the potential embodied in the ESA.

### *C. Species Listing and Delisting*

The ESA's findings, purposes and policies for its conservation program are reflected in the requirements for listing and delisting species. In addition to stressing the important values attributed to wildlife species, the ESA expresses concerns about the extinctions of some species' as well as threats to other species' existence.[46] Further, the ESA notes the nation's commitment as part of "the international community to conserve to the extent practicable" species "facing extinction."[47] The policy provisions also reflect the need for federal agencies to conserve endangered and threatened species and to cooperate with state and local agencies regarding water issues affecting species conservation.[48]

The ESA defines "conservation" to mean "the use of all [necessary] methods and procedures . . . to bring any endangered species or threatened species to the point at which the measures . . . are no longer necessary."[49] "Species" includes the species, subspecies, "and any distinct population segment" of a species.[50] Under the ESA, the term "endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range."[51] A threatened species means any species which "is likely to become an endangered species within the foreseeable future" throughout all or a significant portion of its range.[52]

According to the FWS, the "foreseeable future extends as far into the future as the Services can make reasonably reliable predictions about the threats to the species and the species' responses to those threats."[53] When

46. 16 U.S.C. § 1531(a)(1)–(3) (2024).

47. § 1531(a)(4). The statute references various international treaties and conventions concerning conservation of wildlife and fisheries. *Id.*

48. § 1531(c).

49. § 1532(3).

50. § 1532(16).

51. § 1532(6). The implementing regulations exclude insects "determined by the Secretary to constitute a pest whose protection . . . would present an overwhelming and overriding risk to man." Conservation of Endangered and Threatened Species of Fish, Wildlife, and Plants–Cooperation with The States, 50 C.F.R § 81.1 (2024).

52. § 1532(20); 50 C.F.R. § 424.11(d) (2024).

53. § 424.11(d).

determining the foreseeable future, the FWS evaluates that standard on a "case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability."[54] The FWS is not required to "identify the foreseeable future in terms of a specific period of time."[55]

The methods and procedures needed for conservation "include . . . all activities associated with scientific resources management such as research, census, law enforcement, *habitat acquisition and maintenance*, propagation, live trapping, and transplantation . . . ."[56] The program for species conservation established through the ESA includes requirements for agency action and consultations, prohibitions against "take" of listed species, enforcement authority for ESA violations, and authorizations of "incidental take" of listed species.[57] Take is defined in the ESA to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" and includes enforcement mechanisms and penalties for violations.[58] Section 9 specifies activities concerning endangered and threatened species that violate the ESA. For example, the ESA bars the take of a listed species without agency authorization.[59]

The FWS periodically prepares a National Listing Workplan (Workplan) for ESA listing of domestic species and for designating critical habitat.[60] The Workplan includes the FWS priorities and timing for accomplishing these responsibilities.[61] Including species in the Workplan does not guarantee either listing or designation, since the FWS would have to first complete a species status assessment, conduct a rulemaking process, and enact final rules.[62]

The ESA requires federal agencies to cooperate with state and local agencies to promote species conservation.[63] The implementing agencies—FWS (within the DOI) and National Marine Fisheries Service (NMFS) (within the Department of Commerce)—have adopted joint regulations concerning the ESA's listing and critical habitat designation processes and

54. *Id.*
55. *Id.*
56. § 1532(3) (emphasis added).
57. §§ 1538(a), 1536(b)(4), 1539, 1540.
58. § 1532(19).
59. §§ 1538, 1540.
60. U.S. FISH & WILDLIFE SERV., NATIONAL DOMESTIC LISTING WORKPLAN (2024).
61. *Id.*
62. *National Listing Workplan*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/project/national-listing-workplan (last visited Mar. 30, 2026).
63. 16 U.S.C. § 1535(a) (2024); 50 C.F.R. § 424 (2024).

decisions.[64] Furthering its statutory mandate to promote the ESA's policies, purposes, and conservation goals, and to satisfy its statutory requirements, the FWS also has adopted regulations to implement its delegated authority and ESA requirements.[65]

The joint ESA regulations address the process for the FWS's decision to list or delist species.[66] The FWS must make decisions regarding listing, reclassification, or delisting "solely on the basis of the best available scientific and commercial information regarding a species' status *without reference to* possible economic or other impacts of such determination."[67] This evaluation also requires a species status review.[68] Factors considered in the listing or reclassification decision include the "present or threatened destruction, modification, or curtailment of [the species'] range; overutilization [of the species] for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence."[69]

For delisting, the FWS also must make decisions based on best available science.[70] The delisting factors are applied for consideration of proposals to delist a species.[71] These factors include species extinction, species recovery "to the point at which it no longer meets the definition" of either an endangered species or threatened species, and new information demonstrating the listed species no longer meets the endangered or threatened species definitions.[72]

Section 4(d) of the ESA requires the FWS to "issue such regulations as [the Secretary] deems necessary and advisable to provide for the conservation of" threatened species.[73] In recent years, the FWS has used different interpretations regarding protections available to threatened species.[74] In 2019, the FWS issued a final rule eliminating the "blanket rules" that applied Section 9 prohibitions to species listed as threatened after the

64. § 424.

65. *See* § 1531(c)(1)–(2); *see generally* 50 C.F.R. § 17.1 (2026).

66. 50 C.F.R. § 424.11. Unless otherwise noted, this Article focuses on the FWS's implementation of the joint regulations.

67. § 424.11(b) (emphasis added).

68. § 424.11(c).

69. 16 U.S.C. § 1533(a)(1)(A)–(E) (2024); *accord* § 424.11(c)(1)–(5).

70. § 424.11(e).

71. *Id.*

72. § 424.11(e)(1)–(4).

73. § 1533(d).

74. Endangered and Threatened Wildlife and Plants; Regulations for Prohibitions to Threatened Wildlife and Plants, 84 Fed. Reg. 44753 (Aug. 27, 2019) (to be codified at 50 C.F.R. § 424).

rule's effective date.[75] The 2019 rule applied only to "species listed as threatened species on or before the" rule's effective date and did not change protections for those previously listed species.[76] The 2019 rule also specified protections for threatened species listed after the rule became effective would exist only "if the FWS promulgates a species-specific rule."[77] In addition, the 2019 rule stated FWS planned to issue the specific threatened species rule "concurrent with the final listing or reclassification determination" but retained discretion after listing or reclassification.[78]

The FWS reversed course in 2024, issuing a final rule reinstating the regulatory protections applicable to threatened species under the 4(d) rule.[79] The agency noted the approach to protections for threatened species was consistent with the approach used "for 40 years before" the 2019 rule.[80]

In addition to asserting it would result in less duplication and reduce administrative costs, the FWS noted the rule's enhanced protection for threatened species:

> [W]henever it's determined that the standard suite of protections is appropriate, the Service will not need to develop any additional regulatory text to codify a species-specific 4(d) rule. Reinstating the "blanket rule" option also ensures there is never a lapse in threatened species protections. If the Service does not promulgate a species-specific 4(d) rule at the time of listing, the "blanket rule" protections will be in place to provide for the conservation of that threatened species. The Service is simply providing a streamlined option for protecting threatened species in situations in which they do not promulgate species-specific 4(d) rules.[81]

Recently, the FWS proposed a rule that would rescind the 2024 regulation incorporating the blanket rule and return to the 2019 rule's

75. *Id.*

76. *Id.* at 44753.

77. *Id.* at 44753.

78. *Id.* The final rule also noted the amended rule "our regulatory approach for threatened species similar to the approach that the National Marine Fisheries Service (NMFS) has taken since Congress added section 4(d) to the Act." *Id.*

79. Endangered and Threatened Wildlife and Plants; Regulations Pertaining to Endangered and Threatened Wildlife and Plants, 89 Fed. Reg. 23919, 23919 (Apr. 5, 2024).

80. U.S. FISH & WILDLIFE SERV., ESA REGULATION FINAL REVISIONS – SECTIONS 4 & 7 FREQUENTLY ASKED QUESTIONS 7 (2024).

81. *Id.*

approach eliminating the blanket rule coverage.[82] The FWS also announced a "pause" of the 2024 rule until the agency can complete its rescission.[83] The FWS's announcement also indicated the agency plans to issue species-specific rules for threatened species after adopting a new rule.[84]

Other regulatory changes to ESA rules are on the horizon. On April 17, 2025, the FWS and NMFS proposed a joint rule to repeal the regulatory harm definition for purposes of the ESA's "take" definition.[85] The current rule defines harm to "mean[] an act which actually kills or injures wildlife."[86] The regulatory definition states the act in this definition "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, . . . feeding or sheltering."[87] The agencies' summary of the proposed rule states "[t]he existing regulatory definition of 'harm,' which includes habitat modification, runs contrary to the best meaning of the statutory term 'take.'"[88] The agencies further asserted the proposed definition change was made "to adhere to the single, best meaning of the ESA."[89]

The ESA creates a comprehensive statutory program for species protections that includes assessment of the species and threats to its survival, classification of the species' status, and determination of its critical habitat to protect species. With provisions for enforcement and penalties, as well as opportunities for cooperative programs and funding opportunities, the ESA's statutory framework establishes a "carrot and stick" approach for species preservation and conservation.

Implementing the requirements and rewards of this framework through the ESA's regulations, policy, and permitting, however, has often proven challenging or misguided. The shifting sands of the federal administration's focus, priorities, and resource allocations have led to varying levels of inaction, attention, and resistance to ESA conservation. In addition, stakeholder resistance and legal challenges to agency actions, as well as varying levels of reliance on cooperative and voluntary efforts, have resulted in different perspectives about the ESA's purposes, implementation, compliance, and effectiveness.

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82. Kat Dwyer, *Conservation Victory Feds to Restore Targeted, Science-Based Endangered Species Policy*, PERC (Aug. 19, 2025), https://www.perc.org/2025/08/19/conservation-victory/.

83. *Id.*

84. *Id.*

85. Rescinding the Definition of "Harm" Under the Endangered Species Act, 90 Fed. Reg. 16102 (proposed Apr. 17, 2025) (to be codified at 50 C.F.R. § 17).

86. *Id.* at 16103.

87. *Id.*

88. *Id*. at 16102. The proposed rule would remove the harm definition from 50 C.F.R. § 17.3 and 50 C.F.R. § 222.102. *Id.* at 16105.

89. *Id.* at 16102.

### *D. ESA Implementation and Authorizations*

The FWS is required to determine whether a species is endangered or threatened based on statutory factors.[90] Those factors include the "present or threatened destruction, modification, or curtailment" of the species' habitat or range; the species' "overutilization for commercial, recreational, scientific, or educational purposes; disease, . . . predation; inadequa[te] . . . regulatory mechanisms; or other natural or manmade factors affecting" the species' existence.[91] Section 4 of the ESA also provides for delisting a species and changes in the species' listing status.[92] The agency is required to make listing and delisting decisions "solely on the basis of the best scientific and commercial data available" concerning the species.[93] In addition, Section 4 includes requirements for designating critical habitat "concurrently with making a determination" regarding a species' status and for revising the designation.[94] The FWS conducts the listing, delisting, and rulemaking processes through the promulgation of regulations under ESA authority.[95]

Section 7 of the ESA requires the FWS to "insure that any [agency] action authorized, funded, or carried out" by FWS "is not likely to jeopardize the continued existence of any" listed species "or result in the destruction or adverse modification of [its critical] habitat."[96] Other federal agencies are required to "confer" with the FWS concerning an agency action or its consideration of a permit or license application "which is likely to jeopardize" a species' existence or destroy or adversely modify a species' proposed critical habitat.[97] After completing the consultation process, the FWS issues its decision concerning whether the action may result in the incidental take of a listed species and whether any "reasonable and prudent measures . . . [can] minimize [the] impact."[98] Those reasonable and prudent measures are addressed through a variety of mitigation measures which may include modification of the proposed action and financial, land preservation, or other mitigation measures.[99]

Incidental take permits are one mechanism for the FWS to authorize take

90. 16 U.S.C. § 1533(a)(1) (2024).
91. § 1533(a)(1)
92. § 1533(a)(2).
93. § 1533(b).
94. § 1533(a)(3)(A)(i).
95. § 1533.
96. § 1536(a)(2).
97. § 1536(a)(4).
98. § 1536(b)(4).
99. *Id.*; § 1539(a).

of a listed species or destruction or adverse modification of a listed species' habitat. Other mechanisms include habitat conservation plans and candidate conservation agreements authorized under Section 10 of the ESA.[100]

## II. CRITICAL HABITAT DESIGNATION

### *A. Habitat Determination*

Critical habitat designation decisions often invoke the balancing of interests between the ESA's conservation focus, property rights, and development pressure in rapidly developing areas. Courts evaluating the legality of the United States Fish & Wildlife Service's (FWS) critical habitat designation decisions recognize the difficulty of balancing the conservation of critical habitat against the specified impacts required by the ESA.

The Supreme Court has clarified that designated habitat must actually be habitat for a listed species. In *Weyerhaeuser Company v. United States Fish & Wildlife Service*, the Court considered the FWS's critical habitat designation for the dusky gopher frog.[101] The Court noted the species "once lived throughout coastal Alabama, Louisiana, and Mississippi, in the longleaf pine forests that used to cover the southeast."[102] The Court also noted the pressures on the dusky gopher frog's survival from rapid development; stating "more than 98% of those forests have been removed to make way for urban development, agriculture, and timber plantations[,]" which created a "closed-canopy forest inhospitable to the frog."[103] Further, "[t]he near eradication of the frog's habitat sent the species into severe decline[,]" with a depleted population of 100 frogs in one Mississippi pond in 2001—the year the FWS placed the dusky gopher frog on the endangered species list.[104]

The FWS cited "resource constraints" for not designating critical habitat when the dusky gopher frog was listed.[105] While the FWS later identified two other "naturally occurring populations" and established an additional population, the initial frog population remained "the only stable one and by

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100. § 1539(a); *Candidate Conservation Agreements with Assurances*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/service/candidate-conservation-agreements-assurances (last visited Mar. 31, 2026).

101. *See generally* 586 U.S. 9 (2018).

102. *Id.* at 14.

103. *Id.*

104. *Id.*; Endangered and Threatened Wildlife and Plants; Final Rule To List the Mississippi Gopher Frog Distinct Population Segment of Dusky Gopher Frog as Endangered, 66 Fed. Reg. 62993 (Dec. 4, 2001) (to be codified 50 C.F.R. § 17).

105. *Weyerhaeuser*, 586 U.S. at 15 (citing Endangered and Threatened Wildlife and Plant; Designation of Critical Habitat for Dusky Gopher Frog (Previously Mississippi Gopher Frog), 77 Fed. Reg. 35118, 35118–19 (June 12, 2012) (to be codified at 50 C.F.R. § 17)).

far the largest."[106] Nine years later the FWS proposed designating the four population areas as critical habitat for the dusky gopher frog.[107] Since these populations "were all located in two adjacent counties" in coastal Mississippi, the FWS concluded additional critical habitat needed to be designated to mitigate the risk that "extreme weather or an outbreak of an infectious disease could jeopardize the entire species."[108] The additional area proposed for designation as "unoccupied critical habitat" was a "1,544-acre site in . . . Louisiana" that was not known to have had a dusky frog population since 1965 and that had a "closed-canopy timber plantation . . . [on] much of the site."[109] The FWS concluded, however, that this "site retained five ephemeral ponds 'of remarkable quality,' and [it] determined that an open-canopy forest could be restored on the surrounding uplands 'with reasonable effort.'"[110] The FWS also determined the ponds and the site's distance from the occupied sites "made it essential for the conservation of the species."[111]

In addressing the ESA's requirement to balance economic and other interests when making the designation determination, the FWS "commissioned a report on the probable economic impact of designating each area, including [the Louisiana site], as critical habitat . . . ."[112] The Weyerhaeuser Company owned part of the Louisiana site and leased the remainder.[113] The Court in *Weyerhaeuser* noted the Louisiana site was in "a fast-growing part of the New Orleans metropolitan area, and the landowners ha[d] already invested in plans to more profitably develop the site."[114] The Court also noted that with this designation, "Section 7 of the ESA [consultation provision] would require the Corps to consult with the Service before issuing any permits" because of the wetlands on the site.[115] The economic report concluded denial of permits to fill some wetlands would "prohibit[] development on 60% of [the site]" and "estimated that this would

106. *Id.*; U.S. FISH & WILDLIFE SERV., DUSKY GOPHER FROG (*RANA SEVOSA*) RECOVERY PLAN iv (2015).

107. *Weyerhaeuser*, 586 U.S. at 16; Endangered and Threatened Wildlife and Plant; Designation of Critical Habitat for Dusky Gopher Frog (Previously Mississippi Gopher Frog), 77 Fed. Reg. at 35119.

108. *Weyerhaeuser*, 586 U.S. at 16 (citing Endangered and Threatened Wildlife and Plant; Designation of Critical Habitat for Mississippi Gopher Frog, 75 Fed. Reg. 31394 (June 3, 2010) (to be codified at 50 C.F.R. § 17).

109. *Id.*

110. *Id.*

111. *Id.* at 16–17 (citing Endangered and Threatened Wildlife and Plant; Designation of Critical Habitat for Dusky Gopher Frog (Previously Mississippi Gopher Frog), 77 Fed. Reg. at 35118, 35124, 35133, 35135).

112. *Id.* at 17 (citing 16 U.S.C. § 1533(b)(2) (2024); App. 63).

113. *Id.* at 17.

114. *Id.*

115. *Id.*

deprive the owners of $20.4 million in development value."[116] The report also identified a $33.9 million impact for the developers if all site development activities were barred.[117]

When balancing economic impact and conservation benefit, the FWS "concluded that those potential costs were not 'disproportionate' to the conservation benefits of designation."[118] Therefore, the FWS refused to "'exercis[e] [its] discretion to exclude' [the site] from the dusky gopher frog's critical habitat."[119] The Weyerhaeuser Company challenged the designation, arguing "habitat cannot include areas where the species could not currently survive."[120] While the FWS agreed "critical habitat must be habitat," it "argue[d] that habitat includes areas . . . that would require some degree of modification to support a sustainable population of a given species."[121]

The Supreme Court considered whether the ESA required designated critical habitat to be *habitat* for a listed species.[122] In doing so, the Court focused on the ordinary meaning of "habitat" in the term "critical habitat."[123] The Court stated that "[a]ccording to the ordinary understanding of how adjectives work, 'critical habitat' must also be 'habitat.'"[124] Since "[a]djectives modify nouns—they pick out a subset of a category that possesses a certain quality–[i]t follows that 'critical habitat' is the subset of 'habitat' that is 'critical' to the conservation of an endangered species."[125]

The Court then considered the term from a statutory context.[126] Noting that "[s]tatutory language cannot be construed in a vacuum," the Court stated it "must also consider 'critical habitat' in its statutory context."[127] The Court held the ESA's requirement to "designate any habitat of such species which is then considered to be critical habitat" led to the conclusion that "[o]nly the 'habitat' of the endangered species is eligible for designation as critical habitat."[128] Further, the Court determined "[e]ven if an area otherwise meets the statutory definition of unoccupied critical habitat because the Secretary finds the area *essential for the conservation of the species*, [the ESA] does

116. *Id.*
117. *Id.*
118. *Id.*
119. *Id.* at 17–18 (quoting App. 188–90).
120. *Id* .at 21.
121. *Id.*
122. *Id.* at 19.
123. *Id.*
124. *Id.*
125. *Id.* at 9, 19–20.
126. *Id.* at 9, 20.
127. *Id.* (quoting Sturgeon v. Frost*,* 577 U.S. 424, 438 (2016) (internal quotation marks omitted)).
128. *Id.* (emphasis omitted).

not authorize the Secretary to designate the area as critical habitat *unless it is also habitat for the species*."[129]

The Court rejected the argument that "the statutory definition of critical habitat is complete in itself and does not require any independent inquiry into the meaning of the term 'habitat,' which the statute leaves undefined."[130] The Court also determined "the statutory definition of 'critical habitat' tells us what makes habitat 'critical,' not what makes it 'habitat.'"[131] Further, the Court stated the ESA does not include a "baseline definition of habitat—it identifies only certain areas that are indispensable to the conservation of the endangered species."[132] Further, the Court noted that "[t]he definition allows the [FWS] to identify the subset of habitat that is critical, but leaves the larger category of habitat undefined."[133] Since the appellate court concluded "'[t]here is no habitability requirement in the text of the ESA or the implementing regulations[,]' . . . [t]he court therefore had no occasion to interpret the term 'habitat' in [the ESA] or to assess the Service's administrative findings regarding" the Louisiana site.[134] Therefore, the Court vacated the appellate court's decision and remanded the case for it "to consider these questions in the first instance."[135]

Shortly following the Supreme Court's *Weyerhaeuser* decision, two district courts focused on whether the challenged critical habitat designations actually included "habitat" as defined by the ESA and interpreted by the Supreme Court.[136] In a challenge related to the Gunnison sage-grouse listing, governmental and other parties challenged the designation of 1.4 million acres in Colorado and Utah as "critical habitat" that occurred concurrent with the species' listing.[137] Among other concerns justifying its designation decision, the FWS identified the "serious threats" of "habitat loss, degradation, and fragmentation" to support its listing throughout its range.[138] The FWS also identified various factors causing the species' habitat decline to 10% of its original range, including development of residences and infrastructure, mineral and water development, and

129. *Id.* (emphasis added).

130. *Id.*

131. *Id.* at 9, 20.

132. *Id.*

133. *Id.* at 20–21.

134. *Id*. at 21 (quoting Markle Interests, LLC v. U.S. Fish & Wildlife Serv., 827 F.3d 452, 468 (5th Cir. 2016)).

135. *Id.*

136. Colorado v. U.S. Fish & Wildlife Serv., 362 F. Supp. 3d 951, 969–74 (D. Colo. 2018); Otay Mesa Prop., v. U.S. Dep't Interior, 344 F. Supp. 3d 355, 368–78 (D.C.C. 2018).

137. *Colorado*, 362 F. Supp. 3d at 960.

138. *Id.* at 970–71 (noting climate change and West Nile Virus as threats to the species, with determined local conservation programs being insufficient to protect the species and its habitat).

livestock management practices.[139] The FWS also noted the isolation of the sage-grouse's populations "increas[ed] the likelihood of extinction associated with habitat decline."[140] The FWS therefore concluded, "'based on the best scientific information available,'" the "current and anticipated habitat threats, and their cumulative effects[,] contribute to the overall decline of the Gunnison sage-grouse and pose a substantial threat to the species 'throughout its range.'"[141] Those threats included "small population sizes, declining population trends, low genetic diversity, geographic isolation, and overall low viability."[142] The court also determined the decision was "based on accurate population estimates, coupled with numerous other threats to the habitat and supported by a reasonable analysis with a scientific basis."[143] Considering these threats and the agency's evaluation, the court—applying *Chevron* deference[144]—concluded the FWS's decision was "not arbitrary and capricious" because it was supported by "more than a dozen scientific studies to support its findings—none of which [were] challenged by [the] [p]laintiffs."[145]

In another post-*Weyerhaeuser* case, California landowners challenged the designation of their land as critical habitat for the Riverside fairy shrimp.[146] The landowners challenged the FWS's method for determining "the geographical area occupied by the [Riverside fairy shrimp] species" and the consistency of FWS's identification of the species' critical habitat.[147] The court in *Otay* concluded the agency's "occupied" critical habitat identification "was unreasonable and therefore arbitrary and capricious."[148] The court also rejected the FWS's designations of unoccupied critical habitat, concluding the "alternative designation of the [acreage] surrounding the stock pond as unoccupied critical habitat violated the ESA, because the agency made that determination" in part, "without conducting any further analysis about whether preservation of this area was essential for the conservation of the species."[149] The Court concluded the agency did not "justify[] its apparent threshold determination that the Riverside fairy shrimp

139. *Id.* at 969–74.
140. *Id.* at 970.
141. *Id.* (quoting AR at 199435–76).
142. *Id.* at 972.
143. *Id.* at 970.
144. Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 865 (1984), *overruled by* Loper Bright Enters. v. Raimondo, 603 U.S. 369 (2024).
145. *Colorado*, 362 F. Supp. 3d at 970.
146. Otay Mesa Prop., v. U.S. Dep't Interior, 344 F. Supp. 3d 355, 368–78 (D.C.C. 2018).
147. *Id.* at 366.
148. *Id.*
149. *Id.*

species 'occupies'" the entire area it had identified as "occupied critical habitat under the ESA."[150]

In *Otay* the court considered a dictionary definition of "occupied" and recognized the term "is susceptible to more than one meaning in the [ESA] context."[151] The *Otay* court concluded the ESA's text and structure "plainly indicate [] Congress intended for the agency" to identify the areas "where the [listed] species physically exists, at least for some period of time, and then determine which areas '*within*' that location qualify as critical habitat as defined by the statute."[152]

Based on the recognition that "occupied" had more than one meaning, the *Otay* court concluded "that term is properly considered ambiguous such that the FWS is entitled to deference."[153] Applying *Chevron* deference, the court considered whether "the agency's interpretation of an ambiguous term 'is based on a permissible construction of the statute.'"[154] With that deference, the *Otay* court determined the FWS improperly "included [as occupied critical habitat] *the land around these pools*, where the *species has never been found and could never physically exist*."[155] The *Otay* court therefore concluded "[t]here is nothing about the ESA's use of 'occupied,' or the plain meaning of that term, or, quite frankly, common sense, that permits this result."[156]

As explained above, both courts applied the *Chevron* deference required at the time of the decisions. The *Colorado DNR* court noted the "narrow" review standard under *Chevron* and stated a court was "not empowered to substitute its judgment for that of the agency."[157] The court also explained that when an "agency articulated a rational basis for its interpretation and application, and considered all the relevant factors, the Court will uphold the

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150. *Id.* at 367.

151. *Id.* at 368.

152. *Id.* at 369.

153. *Id.* at 368.

154. *Id*. (quoting Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 843 (1984) (internal quotations omitted)).

155. *Id.* at 370 (emphasis added); *See* Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Riverside Fairy Shrimp, 77 Fed. Reg. 72070, 72081 (Dec. 4, 2012) (to be codified at 50 C.F.R. pt. 17); The Court also reasoned that:

> The FWS's reading also defies logic: under its interpretation of 'occupied,' if two vernal pools containing Riverside fairy shrimp cysts were sighted on either side of the Mojave desert, the agency could deem all of the desert area between the two ponds as the 'geographical area occupied by the species' even though the species has never been, and could never be, present in the desert.

*Otay*, 344 F. Supp. 3d at 370.

156. *Otay*, 344 F. Supp. 3d at 370 (citing Ariz. Cattle Growers' Ass'n v. Salazar, 606 F.3d 1160, 1164 (emphasizing the Riverside fairy shrimp's limited "degree of mobility or migration")).

157. Colorado, v. U.S. Fish & Wildlife Serv., 362 F. Supp. 3d 951, 962 (D. Colo. 2018).

agency action."[158] The *Otay* court stated, while a "court must defer to the agency's interpretation of a statute if it is 'based on a permissible construction of the statute[,]'" a court "must overturn agency action and interpretation inconsistent with the regulations and statutes themselves."[159]

In *Loper Bright Enterprises v. Raimondo*,[160] the Supreme Court overruled *Chevron* and determined that a court "may not defer to an agency interpretation of the law simply because a statute is ambiguous."[161] The Court in *Loper Bright* concluded that "[c]ourts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority" and must "use every tool at their disposal to determine the best reading of the statute and resolve the ambiguity."[162] The Court's rejection of deference to agency interpretation and adoption of a judicial interpretation approach to achieve the statute's "best reading" significantly impacts the consideration of agency expertise concerning a species' status and the need for habitat protection. The effect of disregarding the scientific knowledge and experience of agencies will likely change how and whether the species obtains and retains protection under the statutes in the future.

### *B. Standards*

The ESA requires the FWS to make species listing and critical habitat decisions based on what is commonly referred to as "best available science."[163]

> The Secretary shall make determinations . . . *solely on the basis of the best scientific and commercial data available* to him after conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under its jurisdiction, or on the high seas.[164]

158. *Id.*
159. *Otay*, 344 F. Supp. 3d at 364–65.
160. 144 S. Ct. 2244, 2273 (2024).
161. *Id.*
162. *Id.* at 2273, 2251.
163. 16 U.S.C. § 1533(B)(1)(a) (2024).
164. *Id.* (emphasis added).

The ESA does not include a statutory definition for "best available science."[165] Rather, the term is described in a way that reflects the ESA's mandate for the agency's determination to only consider "the best scientific and commercial data available" to the Secretary after a species status review and consideration of other efforts "to protect such species."[166] The ESA does define what constitutes "critical habitat" for a listed species.[167] Under the ESA, critical habitat includes "the specific areas within the geographical area occupied by the species, at the time it is listed . . . , on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection."[168] The term also includes the "specific areas outside the geographical area occupied by the species at the time it is listed . . . , upon a determination by the Secretary that such areas are essential for the conservation of the species."[169]

For occupied critical habitat, the current regulations specify that FWS will consider the "physical and biological features essential to the conservation of the species" by evaluating, "at an appropriate level of specificity[,]" an analysis which may include "consideration of the appropriate quality, quantity, and spatial and temporal arrangements of such features in the context of the life history, status, and conservation needs of the species."[170] The FWS also must "[d]etermine which of these features may require special management considerations or protection."[171] It may designate "specific areas outside the geographical area occupied by the species at the time of listing" that the FWS "determines are essential for the conservation of the species."[172]

The ESA envisions concurrent decisions on species listing and critical habitat designations.[173] The FWS must designate critical habitat "[t]o the *maximum extent* prudent and determinable."[174] When this standard is satisfied, the FWS "will identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat."[175] When the agency determines "designation

165. *See* § 1532.
166. § 1533(B)(1)(a).
167. § 1533(5)(A).
168. § 1533(5)(A)(i).
169. § 1532(5)(A)(ii).
170. 50 C.F.R. § 424.12(b)(1)(ii)–(iii).
171. § 424.12(b)(1)(iv).
172. § 424.12(b)(2).
173. § 1533(3)(a)(3)(A)(i).
174. § 424.12(a) (emphasis added).
175. § 424.12(b).

of critical habitat is *not prudent* or . . . is *not determinable*," the FWS "will state the reasons for not designating critical habitat in the publication of proposed and final rules listing a species."[176]

The FWS considers a variety of factors when determining whether a critical habitat designation meets the prudent standard. In evaluating whether designation is "prudent," the FWS considers whether "[t]he species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species."[177] Designation also may not be prudent when the FWS concludes there is no threat to "[t]he present or threatened destruction, modification, or curtailment of a species' habitat or range."[178] Further, areas that do not "meet the definition of critical habitat" and areas with no or "no more than negligible conservation value . . . for a species occurring primarily outside . . . the United States" should not be designated based on the prudent standard.[179]

In evaluating whether critical habitat designation is "determinable," sufficiency of information is considered.[180] The FWS may decline to designate critical habitat when the agency lacks "[d]ata sufficient to perform required analyses."[181] Designations also may not be determinable when "biological needs of the species are not sufficiently well known to identify any area that meets the [critical habitat] definition."[182]

The designated critical habitat cannot "include the entire geographical area which can be occupied by the threatened or endangered species" without a specific determination by the FWS.[183] The designated critical habitat area specified in the regulation must "be shown on a map, with more detailed information" about the designation—including the jurisdictions of the identified areas—and published in the Federal Register.[184] Further, the regulations allow designation of an "inclusive area as critical habitat" when "several habitats . . . are located in proximity to one another."[185]

The ESA also requires the FWS to balance the need to designate or revise critical habitat for species' conservation against "the *economic* impact, the impact on *national security*, and *any other relevant impact*, of specifying any particular area as critical habitat."[186] The Secretary may exclude an area

176. § 424.12(a) (emphasis added).
177. § 424.12(a)(1)(i).
178. § 424.12(a)(1)(ii).
179. § 424.12(a)(1)(iii)-(iv).
180. § 424.12(a)(2).
181. § 424.12(a)(2)(i).
182. § 424.12(a)(2)(ii).
183. 16 U.S.C. § 1532(5)(C) (2024).
184. § 424.12(c).
185. § 424.12(d).
186. § 1533(b)(2) (emphasis added).

from critical habitat with a determination that the benefits of exclusion outweigh the benefits of designation.[187] An exception to that discretion exists when the "best available science" shows the failure to designate the area as critical habitat will result in the species' extinction.[188] When critical habitat is designated, the FWS must provide "to the maximum extent practicable, . . . a brief description and evaluation of . . . activities" that "may adversely modify [the] habitat, or may be affected by such designation."[189]

A designation exception exists for critical habitat land "or other geographic areas owned or controlled by the Department of Defense, or designated for its use" when the: (1) land is "subject to a compliant or operational integrated natural resources management plan" (INRMP) authorized in the ESA;[190] and (2) the FWS "determines in writing that such plan provides a conservation benefit to the species for which critical habitat is being designated."[191] To determine whether the conservation benefit exists, the FWS must consider the "extent of the area and features present" and "the type and frequency of use of the area by the species."[192] The FWS also must consider "[t]he degree to which the relevant elements of the INRMP will protect the habitat from the types of effects that would be addressed through a destruction-or-adverse-modification analysis."[193]

When considering critical habitat designation, the ESA requires the FWS to "tak[e] into consideration" the probable economic, national security, and other relevant impacts of the designation.[194] Further, the FWS will "tak[e] into account those efforts, if any, being made by" states and other countries "or . . . [their] political subdivision[s] to protect such species."[195] Factors for this consideration include "predator control, protection of habitat and food supply, or other conservation practices" within the agency's "jurisdiction."[196]

Congress is considering ESA changes that would impact the standards and process for critical habitat designation. In March 2025, Representative Bruce Westerman, the Chair of the House of Representatives

187. *Id.*

188. *Id.*

189. § 1533(b)(8); 16 U.S.C. § 670(a) (2024).

190. § 670(a). The Section references the Department of Defense provision addressing the military's establishment of integrated natural resources management plans: "The Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations." *Id.*

191. 50 C.F.R. § 424.12(h).

192. § 424.12(h)(1)–(2).

193. § 424.12(h)(3)–(4).

194. § 424.12(a).

195. 16 U.S.C. § 1533(b)(2) (2024).

196. § 1533(b)(1)(A).

Committee on Natural Resources, introduced a bill that proposes significant changes to the ESA listing, delisting, and critical habitat designation provisions.[197] Among other changes, H.R. 1897l would define "habitat" for designation purposes to mean:

> (i)(I) means the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support 1 or more life processes of the threatened species or endangered species; and
> (II) does not include an area visited by only vagrant individual members of the threatened species or endangered species.
> (ii) If the setting described in clause (i)(I) does not support all of the life processes of the relevant threatened species or endangered species, the threatened species or endangered species must be able to access, from the setting, other areas necessary to support its remaining life processes.[198]

Further, the bill would prohibit FWS from designating critical habitat designation on private land "subject to a land management plan" that satisfies the bill's criteria.[199] The prohibition applies when the FWS Secretary determines the:

> [P]rivately owned or controlled land or other geographical area that is subject to a land management plan that the Secretary determines is: (1) 'similar in nature to an integrated natural resources management plan' for military lands, (2) 'prepared in cooperation with the Secretary and the head of each applicable State fish and wildlife agency,' or 'is submitted to the Secretary in a manner that is similar to the manner in which an applicant submits a conservation plan' under ESA Section 10(a)(2)(A).[200]

197. H.R. REP. NO. 119-1897 § 2(D)(i)(I)–(II) (2025); *see* Bruce Westerman, *It's Time for ESA Reform*, CONGRESSMAN BRUCE WESTERMAN, https://westerman.house.gov/media-center/weekly-columns/its-time-esa-reform (last visited Mar. 31, 2026); *see also It's Time to Reform the Endangered Species Act*, HOUSE COMM. ON NAT. RES. (Mar. 6, 2025), https://naturalresources.house.gov/news/documentsingle.aspx?DocumentID=416964.

198. H.R. REP. NO. 119-1897 § 2(D)(i)(I)–(II) (2025); *see* Westerman, *supra* note 197; *see also* HOUSE COMM. ON NAT. RES., *supra* note 197.

199. H.R. REP. NO. 119-1897 § 305(a)(3)(C).

200. *Id.* § 305(a)(3)(C)(i)–(ii).

The prohibition also applies to "an activity or a limitation on an activity that the Secretary determines will likely conserve the species concerned" or "result in . . . 'an increase in the population of the species concerned above the population of such species on the date that such species is listed . . . .'"[201] Further, the legislation includes "maintaining the same population" of the species as "would likely occur if such land . . . is designated, and the activity or limit will to the maximum extent practicable, . . . 'minimize and mitigate the impacts of any activity that will likely result in an incidental taking of the species concerned.'"[202] In addition, H.R. 1897 requires the FWS to publish the "best scientific and commercial data available that are used as the basis for each [listing or critical habitat designation] regulation."[203]

### *C. Process and Timing*

Listing of a species as endangered or threatened triggers the requirement to protect its critical habitat.[204] The ESA listing process generally requires FWS to publish the "final regulation designating critical habitat . . . concurrently with the final regulation implementing the determination that such species is endangered or threatened."[205] Despite the mandate to designate at the time of listing, the statute includes provisions for a change in that timing when the FWS determines a delay is necessary.[206] One circumstance permitting the change is when "it is essential to the conservation of such species that the regulation implementing such determination be promptly published."[207]

The FWS also may delay the critical habitat designation when "critical habitat of such species is not then determinable."[208] In the latter case, the ESA allows the FWS to extend the one-year statutory deadline by "not more than one additional year[,]" and requires the FWS to "publish a final regulation, based on such data as may be available at that time, designating, to the maximum extent prudent, such habitat."[209] Recognizing that critical habitat may not be designated under either timeline, the ESA also provides for critical habitat to be designated for a listed species when "no critical habitat

201. *Id.* § 305(a)(3)(C)(iii)–(iv)(I).
202. *Id.* § 305(a)(3)(C)(iv)(II)–(v).
203. *Id.* § 401(b)(9).
204. 16 U.S.C. § 1532(5)(A) (2024).
205. § 1533(3)(b)(6)(c).
206. § 1533(a)(2)(C)–(3)(A); 50 C.F.R. § 424.12(a).
207. § 1533(b)(6)(C)(i).
208. § 1533(b)(6)(C)(ii).
209. *Id.*

has heretofore been established."[210] Critical habitat designations also may be revised after designation.[211]

As described above, an initial critical habitat designation, and any subsequent revisions, must be based "solely on the basis of the best scientific and commercial data available" at the time of the decision.[212] Those designations and revisions also must "tak[e] into consideration the economic, national security, and relevant impacts of specifying any particular area as critical habitat."[213] The ESA allows FWS to "exclude any area from critical habitat" based on a determination "that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat."[214] An exception is provided when the FWS determines "based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned."[215]

## III. IMPEDIMENTS TO DESIGNATION

### *A. Inaction and Resistance*

The loss of habitat needed for species conservation is a long-standing problem that affects habitat conservation and the ability to designate critical habitat. A 1995 National Research Council report on the interaction of ESA and science described the challenges associated with habitat conservation in developing areas.[216] This report noted "[t]he role of conserving habitat for endangered species has been recognized since the first federal endangered species legislation."[217] The report also stated that "[o]ver time, as our knowledge of species requirements has grown, the legislation has evolved from the regulation of harvest and trade in species to the protection of habitat."[218] Referencing the ESA's statutory purpose "to conserve endangered species 'and the ecosystems on which they depend[,]'" the report's authors recognized "a clear mandate linking successful conservation

210. § 1532(5)(B).
211. § 1533(b)(2).
212. § 1533(B)(1)(a).
213. § 1533(b)(2).
214. § 1533(b)(2).
215. § 1533(b)(2).
216. NAT'L RSCH. COUNCIL, SCIENCE AND THE ENDANGERED SPECIES ACT 73 (Nat'l Acads. Press 1995) [hereinafter NRC Report].
217. *Id.*
218. *Id.*

of species to the habitats that they require" and concluded "[t]his linkage is entirely appropriate scientifically."[219]

Delays in regulatory action have been identified as an issue for successful ESA regulation and conservation. One assessment of ESA population sizes and timing of listing and recovery actions noted the ESA is "often considered a model for endangered species protection globally" and "one of the world's strongest laws for protecting biodiversity."[220] Despite that impression, the assessment determined the ESA's effectiveness was "undermine[d]" by "small population sizes at time of listing, coupled with delayed protection and insufficient funding."[221] Further, the assessment identified various reasons for challenges associated with ESA conservation, including "a pattern of not protecting species until their populations have reached very low levels[,]" a practice that "increases both the time to recovery and the likelihood that species will vanish entirely."[222] The assessment also emphasized that as of 2022, "only 54 US species have been declared fully recovered and delisted."[223]

### 1. Administrative Focus

Federal administration philosophy and priorities also affect the timing and approach to implementing the ESA's critical habitat designation requirement and enforcing its mandate. For example, during the mid-1980s the United States Fish and Wildlife Service (FWS) revised the critical habitat regulation concerning "adverse modification" to incorporate that term within the "jeopardy" standard.[224] This rule amendment was justified on the basis that "critical habitat designation provides no additional protection for species beyond what the listing itself provides."[225]

In addition to variations in the ESA's regulatory approach during different administrations, variation in listing action rates indicates the relative

219. *Id.* (quoting 16 U.S.C. § 1531).

220. Erick Eberhard et al., *Too Few, Too Late: U.S. Endangered Species Act Undermined by Inaction and Inadequate Funding*, PLOS ONE, Oct. 2022, at 1, 1.

221. *Id.*

222. *Id.* The assessment noted "environmental, genetic, and demographic" factors contributed to those challenges. *Id.* at 1–2.

223. *Id.* at 1.

224. Patrick Parenteau*, An Empirical Assessment of the Impact of Critical Habitat Litigation on the Administration of the Endangered Species Act*, 2, n.6 (Vt. L. Sch. Faculty Papers, Paper No. 1, Aug. 2005) https://www.academia.edu/?h=111848454.

225. *Id.*

importance of implementation of the ESA's requirements over time.[226] A 2005 assessment of listing actions from 1974–2004 noted significant disparities in the number of listing actions based on Presidential administration.[227] For example, during that period ESA listings ranged from a high of 65 during the Clinton administration's two terms to a low of seven in President George W. Bush's first administration.[228] The 286 candidate species at the time of that report noted the average time these species had been in candidate status was 17 years, "many" had been on the candidate list for 25 years, and "[l]isting delays led to the extinction of 42 species."[229]

Further, the number of listing determinations—and the impetus for those determinations—varied greatly during the 1974–2004 period.[230] While 390 listing determinations were issued during President Clinton's second term, President George W. Bush's first term resulted in 98 listing determinations.[231] Of those listing determinations during the second Clinton administration term, 48% were made without litigation resulting in court-ordered action; in the first Bush administration term, only 6% were not based on a court order.[232]

### 2. Necessary Information

While supported by science, the practicality of designation can create significant challenges. The National Research Council report stated the ESA's Section 7 consultation requirement, which requires federal agencies "to ensure . . . their activities are not likely to jeopardize the continued existence of federally listed species or destroy or adversely modify designated critical habitat[,]" does "correspond[] to the understanding of conservation biology that certain habitat is essential for species survival."[233] The report then addressed the potential for critical habitat designation while acknowledging the challenges associated with this decision:

> Habitat critical to species can be identified from the knowledge of species and ecosystems as objectively and scientifically as a species can be identified for listing. As is the case with listing decisions on

226. D. NOAH GREENWALD & KIERAN F. SUCKLING, CTR. FOR BIOLOGICAL DIVERSITY, PROGRESS OR EXTINCTION? A SYSTEMATIC REVIEW OF THE U.S. FISH AND WILDLIFE SERVICE'S ENDANGERED SPECIES ACT LISTING PROGRAM 1974-2004 (2005).

227. *See id.*

228. *Id.*

229. *Id.*

230. *Id.*

231. *Id.*

232. *Id.*

233. NRC Report, *supra* note 216, at 74–75.

> many rare species, detailed information needed to designate critical habitat might be lacking. Simple occurrence of a species within a habitat does not necessarily mean that the habitat is required by the species or that the amount and quality of habitat might be considered "critical." But that a species is absent from a given habitat does not mean that the habitat is not critical to the persistence of the species. Identification of the relationship of a species to habitat and the *determination of what is critical to the long-term survival of that species are high priorities for long-term conservation*. The complexity of designating critical habitat will vary by species, but *designation should be possible in many cases*.[234]

Despite this assessment of the potential for designating habitat, the report also noted, as of the time of the report, the fact that "nearly 80% of all species listed do not have critical habitat designations is a cause for concern."[235]

As of June 2025, the FWS reports that 107,534,610.67 acres (36,061.23 miles) of critical habitat have been designated for the 965 FWS-listed and FWS-NMFS jointly listed species.[236] In addition, the FWS has proposed critical habitat designations for 3,635,612.44 acres (179.5 miles).[237] Approximately 120 of these species do not have final critical habitat designations.[238]

### 3. Habitat Conversion

The rate of habitat conversion creates additional concerns about habitat availability and protection. A significant factor affecting critical habitat designation is the rate of habitat conversion associated with development from the pre-ESA area to the present. As of 2022, the fastest growing states since the post-World War II era include Arizona, Florida, Idaho, Utah, North Dakota, and Alaska.[239] In Nevada, the population increased 22 times during

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234. *Id.* at 75–76 (emphasis added) (internal citations omitted).

235. *Id.* at 76.

236. *USFWS Threatened & Endangered Species Active Critical Habitat Report*, U.S. FISH & WILDLIFE SERV., https://ecos.fws.gov/ecp/report/critical-habitat (last visited Mar. 31, 2026). The FWS data reflects active proposed and final critical habitat for FWS only, and Joint FWS-NMFS threatened and endangered species. *Id.*

237. *Id.*

238. *See id.* (compiling data). The non-final designation status information references proposed critical habitat designations as "Not Prudent," and "Critical Habitat Plot Points."

239. *See* Marc Perry et al., *Florida Fastest-Growing State for First Time Since 1957*, U.S. DEP'T OF THE CENSUS (Dec. 22, 2022), https://www.census.gov/library/stories/2022/12/florida-fastest-growing-state.html.

the 1946–2022 period.[240] From 1946 to 2022, Florida's population increased "just over 9 times its 1946 population."[241] Further, its "average annual growth remained over 3.0%" between 1960 and 1989.[242]

With larger populations creating a need for increased housing and infrastructure, a consequence of population growth is increasing habitat conversion. The increase in housing permits provides some perspective on the scope of development.[243] For example, the "ten states issuing the highest number of single-family permits combined accounted for 63.9% of the total single-family permits issued" in 2023.[244] For the three states with the highest number of permits reported, two (Texas and Florida) reported declines in total permit issuance from the previous year, and the other (North Carolina) reported only a slight increase.[245] For multi-family housing development, 15 states reported growth in permit issuance.[246] Even with declines in certain states, the rate of habitat conversion is significant.

### 4. Rulemaking Process

The FWS rulemaking process for critical habitat designation can be a lengthy and complicated one. The ESA prescribes the requirements and timing for FWS actions to designate critical habitat for a listed species.[247] However, the complexity, available resources, and resistance to the process may impede the FWS's ability to pursue and complete habitat designation.

Two Florida species provide examples of listed species without formal habitat protection measures in all or some of their range. The Florida panther was first determined to be threatened with extinction in 1967, under the Endangered Species Preservation Act of 1966.[248] As explained by the FWS, this species' status was dire by the time it was listed:

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240. *Id.*

241. *Id.*

242. *Id.*

243. *See State and Local Data*, NAT'L ASS'N OF HOME BUILDERS, https://www.nahb.org/news-and-economics/housing-economics/state-and-local-data (last visited Mar. 31, 2026).

244. *Building Permits by State and Metro Area*, NAT'L ASS'N OF HOME BUILDERS, https://www.nahb.org/news-and-economics/housing-economics/state-and-local-data/building-permits-by-state-and-metro-area [https://web.archive.org/web/20250206173412/https://www.nahb.org/news-and-economics/housing-economics/state-and-local-data/building-permits-by-state-and-metro-area] (last visited Mar. 31, 2026).

245. *Id.*

246. *Id.*

247. *See infra* Part II.C.

248. 32 Fed. Reg. 4001 (Mar. 11, 1967); *See* Endangered Species Preservation Act of 1966, Pub. L. No. 89-669, § 10(a), 80 Stat. 926, 930 (1966); FLA. FISH & WILDLIFE CONSERVATION COMM'N, FLORIDA'S ENDANGERED AND THREATENED SPECIES 8 (2025).

> Habitat loss, declining prey populations, and persecution resulting from European settlement were the primary causes of the decline of pumas in North America, including the Florida panther. By the late 1890s, pumas had been extirpated from all of eastern North America except for a small population in Florida. In 1958, the Florida panther was so rare that the State of Florida designated panthers as endangered, and the federal government followed suit in 1967. Status surveys conducted in 1973 and 1974 found only one female in Glades County west of Lake Okeechobee and a handful of others in the Big Cypress region of South Florida.[249]

As of 2020, the Florida panther population included only "a single breeding population located in South Florida [that was] . . . the only breeding population of puma east of the Mississippi River."[250] The species' distribution includes urbanized and growing portions of South Florida, including "the extreme southern portions of the peninsula into Central Florida up to Interstate 4 (I-4) and occasionally further north," with this group generally being "dispersing males from the core breeding population in South Florida."[251] The 2020 assessment also specified that "Florida panthers require large landscapes to meet their biological needs and minimum areas needed to support viable populations of panthers and pumas have been estimated at 1000–8100 km[,]" or approximately 621–5,033 miles.[252]

The Endangered Species Preservation Act did not provide for critical habitat designation concurrent with, or as a result of, a species' listing.[253] When the ESA was enacted in 1973, it authorized—but did not require—critical habitat for species listed prior to the ESA's enactment.[254] Despite the significant concerns about habitat fragmentation and protection, the FWS has not designated critical habitat for the Florida panther to date.[255] Further, the agency's horizon for recovery is a long one, with the recovery plan estimating

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249. U.S. Fish & Wildlife Serv., *Species Status Assessment for the Florida Panther*, iv–v (2020) (Exec. Summary).

250. *Id.* at v.

251. *Id.*

252. *Id.*

253. *See* Endangered Species Preservation Act §§ 1–10.

254. H.R. REP. NO 95-1625 (1978); 16 U.S.C § 1533 (2024); 50 C.F.R. § 424.12(e). According to the regulation, "[t]he Secretary may designate critical habitat for those species listed as threatened or endangered but for which no critical habitat has been previously designated. For species listed prior to November 10, 1978, the designation of critical habitat is at the discretion of the Secretary." *Id.*

255. *Species Status Assessment for the Florida Panther*, *supra* note 249, at iv.

2085 as the year in which the Florida panther may have a large and stable enough population to be delisted.[256]

The gopher tortoise, a species prevalent in Florida and in some other Southeastern states, also has a long ESA regulatory history. In July 1987, the FWS listed the gopher tortoise as a threatened species in the western portion of its range (west of the Mobile and Tombigbee Rivers in Alabama, Louisiana, and Mississippi).[257] Threats to this species at the time of listing and presently include habitat loss, degradation, and fragmentation.[258] The habitat threats result from "urbanization and development all rooting from an increased human population" in the gopher tortoise's Southeastern range.[259] In addition, the FWS determined more than 80% of the gopher tortoise's habitat was within privately owned lands.[260]

In 2006, the FWS received a petition to list the eastern portion of the gopher tortoise's range as threatened under the ESA and additional petitions in subsequent years.[261] The FWS issued multiple findings on petitions to list the eastern gopher tortoise population between 2009 and 2022.[262] The FWS determined the eastern population did not require a threatened listing under the ESA but retained the threatened status of the eastern population.[263] Despite the threats to this species' habitat, the FWS did not designate critical habitat at the time of listing or within the several years following the listing.[264] Regulatory initiatives related to the gopher tortoise focused largely on listing of the western portion of the species' range.[265]

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256. Jonathan Adler, *Tarnished Gold: The ESA at 50*, 18 FIU L. REV. 385, 400 (2024) (citing SUCKLING, ET AL., CTR. FOR BIOLOGICAL DIVERSITY, ON TIME, ON TARGET: HOW THE ENDANGERED SPECIES ACT IS SAVING AMERICA'S WILDLIFE 13 (2012)).

257. FWS, Determination of Threatened Status for Gopher Tortoise (Gopherus polyphemus); 52 Fed. Reg. 25376, 25380 (July 7, 1987).

258. FWS, Endangered and Threatened Wildlife and Plants; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, 87 Fed. Reg. 61834, 61840 (Oct. 12, 2022).

259. *Id.* at 61842.

260. *Id.* at 61844.

261. *See ECOS Species Profile: Gopher Tortoise (Gopherus polyphemus)*, U.S. FISH & WILDLIFE SERV., https://ecos.fws.gov/ecp/species/6994 (last visited Mar. 31, 2026).

262. *See* FWS, 90-Day Finding on a Petition to List the Eastern Population of the Gopher Tortoise, 74 Fed. Reg. 46401 (Sept. 9, 2009); FWS, 90-Day Finding on a Petition to List the Eastern Population of the Gopher Tortoise, 75 Fed. Reg. 1567, 1568 (Jan. 12, 2010); FWS, 2-Month Finding on a Petition To List the Gopher Tortoise as Threatened in the Eastern Portion of Its Range, 76 Fed. Reg. 45130, 45162 (July 27, 2011); FWS, Endangered and Threatened Wildlife and Plants; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, 87 Fed. Reg., *supra* note 258 at 61858.

263. FWS, Endangered and Threatened Species; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, 87 Fed. Reg. at 61834.

264. *Id.* at 61834.; *see* FWS, *supra* note 258, at 61834, 61868.

265. FWS, Endangered and Threatened Wildlife and Plants; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, *supra* note 258, at 61834.

The sage-grouse provides another example of a long and contentious listing process demonstrating the habitat-development struggle for lands identified as listed species habitat.[266] As with many other listed species, habitat loss was identified by FWS as a major factor in the sage-grouse's decline.[267] Sagebrush lands providing habitat for the species were fragmented and impacted by "energy development, infrastructure, agricultural conversion, wildfire, invasive plants, and other factors."[268] The species' vulnerability to the West Nile Virus, which "is always fatal for" this species, also is exacerbated by certain development that "introduce standing pools of water [creating habitat for] mosquitos [that] carry the . . . virus."[269] This disease was found in all but one of the states within the sage-grouse's range by 2006.[270]

The sage-grouse was first proposed for ESA listing in 1991, and the process leading to a final decision spanned 24 years.[271] During the next 14 years, multiple petitions were filed to protect the species in all or parts of its range.[272] While some of these petitions were rejected, three were determined by the FWS to "present[] substantial evidence in support of the listing."[273] The FWS first determined that listing was not warranted in 2005.[274] In reviewing a challenge to the listing decision, the court in *Western Watersheds Project v. Fish and Wildlife Service* concluded the FWS had failed to "use the best science" and the Department of Interior (DOI) had

266. PERVAZE A. SHEIKH ET AL., CONG. RSCH. SERV., R44592, SAGE-GROUSE CONSERVATION: BACKGROUND AND ISSUES 1 (2016).

267. *See* FWS, Endangered and Threatened Wildlife and Plants: 12-Month Finding on a Petition to List Greater Sage-Grouse (Centrocercus urophasianus) as an Endangered or Threatened Species, 80 Fed. Reg. 59858, 59941 (Oct. 2, 2015).

268. SHEIKH, *supra* note 266, at 1. Since the sage-grouse requires "large treeless areas to discourage the roosting of avian predators and to permit travel between breeding and nesting sites[,]" development with the species' habitat has a significant impact on the species. *Id.*

269. *Id.* at 2.

270. *Id.*

271. *Id.* at 1.

272. *Id.*

273. *Id.* at 5; Endangered and Threatened Wildlife and Plants; 90-Day Finding for Petitions To List the Greater Sage-Grouse as Threatened or Endangered, 69 Fed. Reg. 21484, 21484 (Apr. 21, 2004).

274. SHEIKH, *supra* note 266, at 7; FWS, Endangered and Threatened Wildlife and Plants; 12-Month Finding for Petitions To List the Greater Sage-Grouse as Threatened or Endangered; Proposed Rule, 70 Fed. Reg. 2243, 2244 (Jan. 12, 2005).

"wrongfully interfered with the listing decision."[275] In 2008, the FWS initiated a status review for the sage-grouse.[276]

Based on that review, the FWS determined in 2010 that the "inadequacy of existing regulatory mechanisms is a significant threat to the greater sage-grouse now and in the foreseeable future."[277] However, the FWS concluded listing was "warranted, but precluded by higher priority listing actions"; the agency stated it would "develop a proposed rule . . . as our priorities allow."[278] FWS's settlement agreement for prior litigation included a 2015 deadline for the agency to propose a listing rule or make a determination that listing was not warranted.[279] In September 2015, FWS issued its decision not to list the species on the basis of adequate regulatory mechanisms to protect the sage-grouse.[280]

The FWS recognized that fragmentation of sagebrush habitat was a primary threat to the sage-grouse's survival.[281] While the sage-grouse originally existed in 16 states, the species' range shrunk to 11 states by 2016.[282] FWS has estimated that by 2016, the species' numbers may have declined "between 69% and 99% from historic to more recent times."[283]

The FWS's sage-grouse listing decision reflects a result based on both inaction and resistance. The DOI Secretary at the time described sage-grouse protection efforts "as the most comprehensive conservation effort in the nation's history."[284] The action, however, raised concerns that the protection associated with listing the species might change public land management in

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275. FWS, 12-Month Finding to List the Greater Sage Grouse, 70 Fed. Reg., *supra* note 277, at 2282; W. Watersheds Project v. U.S. Fish & Wildlife Serv., 535 F. Supp. 2d 1173, 1185 (D. Idaho 2007).

276. *W. Watersheds Project*, 535 F. Supp. 2d at 1185; FWS, Endangered and Threatened Wildlife and Plants; Initiation of Status Review for the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered, 73 Fed. Reg. 10218, 10218 (Feb. 26, 2008).

277. FWS, Initiation of Status Review for the Greater Sage-Grouse, *supra* note 279, at 10218–19; FWS, Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered, 75 Fed. Reg. 13909, 13924 (Mar. 23, 2010).

278. FWS, 12-Month Finding to List the Greater Sage Grouse, 75 Fed. Reg., *supra* note 280, at 13910; *see* 16 U.S.C. § 1533(b)(3)(B)(iii)(II) (2024).

279. *See* In re Endangered Species Act Section 4 Deadline Litig., No. 10-377, at 5 (D.D.C. July 12, 2011).

280. FWS, 12-Month Finding to List Greater Sage-Grouse, 80 Fed. Reg., *supra* note 270, at 59858; *see* 16 U.S.C. § 1533(b)(3)(B)(iii)(II) (2024).

281. FWS, 12-Month Finding to List Greater Sage-Grouse, 80 Fed. Reg., *supra* note 270, at 59858.

282. SHEIKH, *supra* note 266, at 3.

283. *Id.*

284. *Id.* at 8; *Historic Conservation Campaign Protects Greater Sage-Grouse*, U.S. DEP'T OF THE INTERIOR (Sept. 22, 2015), https://www.fws.gov/news/ShowNews.cfm?ID=F5B7455D-0824-997C-47667F8ABBFFBA86.

a manner that could impact authorizations of "economic uses such as mining, fossil and alternative fuel development" as well as "grazing, hunting, fishing, and outdoor recreation."[285]

Actions preceding this listing decision, however, also reflected some cooperative efforts at conservation in lieu of listing. Federal agency and state initiatives to conserve sage-grouse habitat, including developing "best practices" for habitat management and memoranda of understanding with federal agencies, were initiated to avoid the species' listing.[286] At least five states in the sage-grouse's range adopted conservation plans for the species and its habitat, including prescribed hunting timing and limits, predator control, and "habitat restoration after energy development."[287]

In 2010, the Natural Resources Conservation Service created the Sage-Grouse Initiative (SGI) as a means to utilize federal conservation programs to provide technical and financial assistance to assist farmers and ranchers to implement sage-grouse conservation practices.[288] During fiscal years 2010 through 2015, the SGI resulted in conservation practices through 1,289 contracts on more than five million acres.[289] Including additional efforts through the 2015 SGI expansion, the SGI reportedly resulted into conservation exceeding eight million acres.[290] Despite these efforts, questions remained about the validity of the decision not to list the species, including the adequacy and variation of state management actions, effect of grazing and other land management practices, interplay between land management plans and economic development considerations, and the sufficiency of federal land management plans.[291]

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285. SHEIKH, *supra* note 266, at 8; *see* FWS, 12-Month Finding to List Greater Sage-Grouse, 80 Fed. Reg., *supra* note 270, at 59873.

286. FWS, 12-Month Finding to List the Greater Sage-Grouse, 80 Fed. Reg., *supra* note 270, at 59873; *see* DOI, *supra* note 287; John W. Connelly et al., *Guidelines to Manage Sage Grouse Populations and Their Habitats*, 28 WILDLIFE SOC'Y BULL. 967, 968 (2000); Interagency Agreement Between the U.S. Dep't of Agric. Nat. Res. Conservation Serv. & the U.S. Dep't of the Interior Bureau of Land Mgmt. & Fish & Wildlife Ser. (July 1, 2011); *Sage Grouse Initiative*, U.S. DEP'T OF AGRIC. NAT. RES. CONSERVATION SERV., https://www.nrcs.usda.gov/programs-initiatives/sage-grouse-initiative (last visited Apr. 18, 2026); Memorandum of Understanding Between the U.S. Dep't of Agric. Forest Serv. & the U.S. Dep't of the Interior Bureau of Land Mgmt. on Greater Sage-Grouse Conservation 1 (2011) (FS Agreement No. 11-IA-11132400-104); U.S. FISH & WILDLIFE SERV., GREATER SAGE-GROUSE CONSERVATION OBJECTIVES TEAM FINAL REPORT 35 (2013).

287. SHEIKH, *supra* note 266, at 9.; *see, e.g.*, NEV. DEP'T OF WILDLIFE, GREATER SAGE-GROUSE CONSERVATION PLAN FOR NEVADA AND EASTERN CALIFORNIA 14 (2004); COLO. PARKS & WILDLIFE, COLORADO GREATER SAGE-GROUSE CONSERVATION PLAN 156 (2008).

288. NEV. DEP'T OF WILDLIFE, *supra* note 290, at 67. The Environmental Quality Incentives Program (EQIP) and Agricultural Conservation Easement Program (ACEP) were part of this initiative. *Id.*

289. SHEIKH, *supra* note 266, at 10.

290. *Id.*

291. *Id.* at 12–13.

The lack of agency action to list species or designate critical habitat when the species' primary threats include habitat loss and fragmentation is a significant concern. Challenges associated with judicial intervention and agency action, however, create additional impediments to action. For example, in 2007 the Eleventh Circuit considered an industry and association group challenge to the FWS's listing of the Alabama sturgeon as an endangered species.[292] The plaintiffs argued in part that the listing should be repealed because of the FWS's failure to designate critical habitat for the species.[293] The court stated it was "troubled by the [FWS's] apparent practice of routinely delaying critical habitat designation until forced to act by court order[,]" and it noted that research for Congress estimated that FWS "had designated critical habitat 'for only about 10% of listed domestic species.'"[294] The court also stated that "in every case brought against the agency for failure to designate [critical habitat], the agency has lost."[295] The court further recognized that "[r]egardless of the cause, it is clear that the Service chronically fails to meet its statutory duty of designating critical habitat of endangered species within the time the Endangered Species Act requires."[296]

Despite the agency's failure to act, the court rejected the plaintiffs' request to invalidate the species listing.[297] The court concluded that removing the listing status of this species would "make a bad situation worse, and defeat the Congressional intent behind the Endangered Species Act."[298] Further, the court reasoned that eliminating the listing status of a species based on the agency's failure to designate critical habitat would defeat the ESA's purposes, as "Congress intended to protect endangered species, not to strip them of protection in order to motivate an administrative agency to protect them."[299]

Application of the best available science requirement in listing and critical habitat designation decisions also creates complications and challenges to agency action and inaction. The National Science Council assessment recognized the long-term "challenges" of applying the standard

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292. Alabama-Tombigbee Rivers Coal v. Kempthorne, 477 F.3d 1250, 1252–53 (11th Cir. 2007).

293. *Id.* at 1253–54.

294. *Id.* (citing Ctr. for Biological Diversity v. Norton, 240 F. Supp. 2d 1090, 1103 (D. Ariz. 2003); M. LYNNE CORN, CONG. RSCH. SERV., IB10009, ENDANGERED SPECIES: CONTINUING CONTROVERSY, CRS ISSUE BRIEF FOR CONGRESS, at CRS–7 (Nov. 21, 2000)). The Congressional Research Service reports that, as of 1999, the Service had designated critical habitat "for only about 10% of listed domestic species; in every case brought against the agency for failure to designate [critical habitat], the agency has lost.". *Id*.

295. *Kempthorne*, 477 F.3d at 1268. (citations omitted).

296. *Id.* at 1269 (citing *Norton*, 240 F. Supp. 2d at 1103).

297. *Id.* at 1277.

298. *Id.* at 1269.

299. *Id*.

to ESA actions.[300] The report stated "[t]he distinction between science and public policy is often fuzzy, because the possession of scientific knowledge and the implementation of that knowledge are so closely linked."[301] While finding "there has been a good match between science and the ESA" in general at that point, the report noted "points where the agreement between science and the ESA is poorer."[302] Examples included "lack of timely designation of endangered or threatened status and similarly timely removal from these categories when recovery goals have been achieved."[303] The report recommended that "[s]urvival habitat should be identified and designated for protection if necessary *when species are listed* as endangered."[304] Further, the report "recognized that species conservation must include strong provisions for habitat conservation[,]" including "a trigger (threatened or endangered status of a species) that caused certain legal prohibitions (jeopardy and taking restrictions)" as well as "the designation of critical habitat and through the elaboration and implementation of recovery plans."[305] Further, the report recommended the agencies ensure that ESA species listing and designation decisions are made "in a scientifically defensible way [that] requires objective methods for assessing risk of extinction and for assigning species to categories of protection according to that risk."[306]

The concerns expressed in the National Research Council long ago continue to affect the credibility of listing and critical habitat designations today. The ESA mandates that, with certain exceptions, critical habitat be designated when a species is listed. The required balancing of conservation objectives with other broad interests, i.e., economic, national security, and "other relevant" impacts, necessarily affects the outcome of how much habitat is actually designated. Previous determinations by the FWS demonstrate the critical habitat designation may occur well after a species is listed—or may not occur at all.

Even when the FWS does act, the critical habitat designation decision may exclude significant areas with characteristics of benefit to the species that may warrant its designation. Previous listing and designation actions show the remedies for requesting consideration of designation (e.g., petition process), or challenging a designation decision (i.e., litigation) can create significant delays in initiating or requiring action. This delay is of particular

300. *See generally* NRC Report, *supra* note 216.
301. *Id.* at ix.
302. *Id.*
303. *Id.*
304. *Id.* at xi (emphasis added).
305. *Id.*
306. *Id.* at 12.

concern when the threat of losing significant critical habitat in rapidly developing areas exists. To effectively address conservation of critical habitat as envisioned by the ESA, additional approaches should be considered.

### *B. Other Challenges and Considerations*

To private and other landowners, the presence of ESA-listed species or designation of a listed species' critical habitat may be met with opposition because of the potentially significant consequences associated with listing and designation. Private lands create a particular challenge for species and habitat protection under the ESA. Concerns about reductions in property value, regulatory constraints on property use, and the financial, timing, and other impacts of obtaining approvals for land use on ESA-regulated land affect the ability to effectively conserve species and their habitat. Evaluating the economic costs to private landowners is an important step in improving the process of listing and critical habitat designation.

Private land constitutes a significant portion of ESA-listed habitat. While federal lands play an important role in conserving ESA-listed species and their habitat, they cannot alone satisfy the full need.[307] According to a 2016 study, habitats on private lands are relied upon by at least two-thirds of species listed as endangered under the ESA.[308] At least two-thirds of listed species rely upon private land for some or all of their habitat, and habitat for one-third of listed species is found *only* on private land.[309] Private lands are an exclusive source of habitat for a "significant percentage" of listed species.[310] This private habitat, therefore, plays an integral role in species conservation, since federal lands cannot alone fill the habitat need even if all federal lands "were managed exclusively for species conservation."[311]

#### 1. Economic Value Concerns

The effects of ESA listings and critical habitat designations on private property may create significant concerns for landowners regarding their property values and the regulatory effects of ESA compliance. Some commentators have expressed apprehension that these concerns may lead to actions that are counterproductive to protecting listed species and conserving

307. Adler, *supra* note 256, at 407.

308. *Id.*

309. *Id.*

310. *Id.*

311. *Id.* (citing DANIEL M. EVANS ET AL., ISSUES IN ECOLOGY REP. 20, SPECIES RECOVERY IN THE UNITED STATES: INCREASING THE EFFECTIVENESS OF THE ENDANGERED SPECIES ACT 3 (2016)).

their habitat. For example, concern exists that listing and critical habitat designation may turn some landowners—"would-be conservationists[—] into opponents of conservation efforts."[312] The perceived threat of property value decline from the presence of listed species may create "anti-conservation sentiment among many private landowners who view endangered species as economic liabilities" because "the ESA restricts future land-use options where threatened or endangered species are found but makes no provisions for compensation."[313] According to this view, "maintaining high-quality habitats that harbor or attract endangered species would represent a gamble against loss of future economic opportunities."[314]

These concerns may be exacerbated by the demand for new development, which creates challenges for ESA conservation. Housing development data from 2024 shows that the demand for housing is significant.[315] Data from the United States Census Bureau indicates a significant increase in "privately owned housing permits[,]" rising from approximately 2013 to 2023. Housing starts rose from under 1 million in 2013 to a high of 1.6 million in 2021, and housing permits increased from 1 million to more than 1.6 million that year.[316] While the totals decreased somewhat from the 2021 highs, both permits and starts remained near 1.4 million in 2023.[317] In December 2024, overall annual housing starts were estimated at "a seasonally adjusted annual rate of 1.5 million units."[318]

### 2. Preemptive Action Threat

Another concern about the potential consequences of ESA critical habitat designations is that these actions may lead to preemptive habitat destruction. Landowners may destroy habitat while listing or critical habitat designations are pending to avoid the restrictions that could be imposed after those actions become final.[319] Incidents occurring before listing or designation reportedly include "accelerated [forest] harvest rotations to avoid regrowth of [spotted owl] habitat" in the Pacific Northwest and "raz[ing]

312. *Id.* at 410.

313. *Id.*

314. *Id.*

315. Robby Brumberg et al., *How Many Houses Are Built Each Year in the U.S.? 2026*, CONSUMER AFFAIRS (last updated Apr. 10, 2024), https://www.consumeraffairs.com/homeowners/how-many-houses-are-built-every-year.html.

316. *Id.* (analyzing the graph titled "New privately owned housing permits, starts and completions from 2013 to 2024").

317. *Id.*

318. Robert Dietz, *Housing Starts End 2024 on an Up Note*, NAT'L ASS'N OF HOME BUILDERS (Jan. 17, 2025), https://eyeonhousing.org/2025/01/housing-starts-end-2024-on-an-up-note/.

319. Adler, *supra* note 256, at 410.

hundreds of acres of juniper tree stands" after the FWS's endangered listing of the golden-cheeked warbler.[320] One study found that some owners of private lands, on which endangered red-cockaded woodpeckers were found, "harvest[ed] their forestlands prematurely and reduced[d] the length of their timber harvesting rotations" to avoid ESA-based restrictions and potential economic loss. This 2003 study estimated that "[p]roviding habitat for a single woodpecker colony could cost a private timber owner as much as $200,000 in foregone timber harvests."[321] A 2004 study determined that, based on the threat of restrictions associated with the presence of a listed red-cockaded woodpecker, "'a [private] landowner is 25% more likely to cut forests when he or she knows or perceives that a red-cockaded woodpecker cluster is within a mile of the land than otherwise'" and concluded for this species "'the ESA has a strong negative effect on the habitat,' and the effect appears to be 'substantial.'"[322]

Criticism of the regulatory approach to critical habitat designation and protection is not limited to private landowners. A 2007 National Center for Policy Analysis report stated that "[s]ome, or all, of the habitat of 78 percent of species listed are on private land."[323] That report also cited comments from a group characterized as "the ESA's staunchest supporters" that recognized the preemptive action problem:

> According to Environmental Defense's Michael Bean, widely regarded as one of the foremost experts on the ESA, "[T]here is increasing evidence that at least some private landowners are actively managing their land so as to avoid potential endangered species problems." His comments on the red-cockaded woodpecker are broadly applicable to most endangered species. "The problems they're trying to avoid are the problems stemming from the Act's prohibition against people taking endangered species by adverse modification of habitat. And they're trying to avoid those problems by avoiding having endangered species on their property." Bean then explained the motivations behind these actions. "Now it's important to recognize that all of these actions that landowners are either taking or threatening to take are not the result of malice toward the red-cockaded woodpecker, not the result of malice toward the

320. *Id.* at 411.

321. *Id.* at 411 (citing Dean Lueck & Jeffrey A. Michael, *Preemptive Habitat Destruction Under the Endangered Species Act*, 46 J.L. & ECON. 27, 33 (2003)).

322. *Id.* at 412 (citing Daowei Zhang, *Endangered Species and Timber Harvesting: The Case of Red-Cockaded Woodpeckers*, 42 ECON. INQUIRY 150, 151, 160, 162 (2004)).

323. BRIAN SEASHOLES, NAT'L CTR. FOR POL'Y ANALYSIS, REP. NO. 303, BAD FOR SPECIES, BAD FOR PEOPLE: WHAT'S WRONG WITH THE ENDANGERED SPECIES ACT AND HOW TO FIX IT 3 (2007).

environment. Rather, they're fairly rational decisions motivated by a desire to avoid potentially significant economic constraints."[324]

### 3. Costs and Delays

Noncompliance with the ESA can be costly. Section 9 of the ESA penalizes those who violate its requirements.[325] Even landowners who seek to comply with the ESA's processes for actions with the potential to impact listed species or critical habitat, however, may face substantial costs and delays to obtain necessary authorizations. Because "effective conservation requires either the imposition of greater regulatory requirements on private landowners, or innovative ways to encourage voluntary conservation efforts on private land,"[326] the cooperation of landowners and other stakeholders (e.g., local governments) is critical to ESA conservation success. Cooperative efforts, like the ESA provisions for habitat conservation plans and candidate conservation agreements, provide options for those stakeholders to engage in negotiations to reach a conservation solution. While these efforts may produce positive results for the species, they can also be both time-consuming and costly.[327]

Even landowners sympathetic to conservation of ESA-listed species may be frustrated by the time, costs, and other obstacles associated with ESA authorizations, which may substantially delay actions and impose significant costs for ESA compliance. For example, authorization for property development that included critical habitat for the Perdido Key Beach Mouse (PKBM) demonstrates the potential complexity and costs of the process. The PKBM is one subspecies of ESA-listed beach mice[328] inhabiting Escambia

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324. *Id*. (citing Michael Bean, Presentation on "Ecosystem Approaches to Fish and Wildlife Conservation: Rediscovering the Land Ethic" at the U.S. Fish & Wildlife Service's Office of Training and Education Seminar Series, Arlington, Va. (Nov. 3, 1994)).

325. 16 U.S.C. §§ 1538, 1540 (2024).

326. Adler, *supra* note 256, at 413.

327. Adler, *supra* note 256, at 413 (citing Christian Langpap & Joe Kerkvliet, *Endangered Species Conservation on Private Land: Assessing the Effectiveness of Habitat Conservation Plans*, 64 J. ENV'T ECON. & MGMT. 1, 1 (2012)).

328. Other listed beach mouse subspecies inhabit coastal dunes in Florida and Alabama, including the Alabama beach mouse, Choctawhatchee beach mouse, Santa Rosa beach mouse, and St. Andrew beach mouse. *Alabama Beach Mouse (Peromyscus polionotus ammobates)*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/species/alabama-beach-mouse-peromyscus-polionotus-ammobates (last visited Mar. 31, 2026); *Choctawhatchee Beach Mouse (Peromyscus polionotus allophrys)*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/species/choctawhatchee-beach-mouse-peromyscus-polionotus-allophrys (last visited Mar. 31, 2026); *Santa Rosa Beach Mouse (Peromyscus polionotus leucocephalus)*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/species/santa-rosa-beach-mouse-peromyscus-polionotus-leucocephalus (last visited Mar. 31, 2026); *St. Andrew Beach Mouse (Peromyscus polionotus*

County in the Florida Panhandle.[329] This species was first listed as endangered in 1984 and is found only on Perdido Key, Florida.[330] Threats to the PKBM's survival include population growth and corresponding development, habitat destruction from development and hurricanes within its dune habitat, and the introduction of predators such as domestic cats, coyotes, and foxes.[331] The PKBM was listed in 1984, and critical habitat was designated at the time of listing.[332]

The FWS issued a recovery plan for the PKBM and two other beach mouse subspecies in 1987 and proposed plan amendments during the time of the species' listing.[333] In the recovery plan, the FWS stated that "[a]lteration and destruction of habitat for recreational, commercial and residential development has been a major factor in the decline of beach mice."[334] In fact, two hurricanes occurring after the PKBM's listing demonstrated how vulnerable the species is to their effects. While 500–800 PKBM were estimated to inhabit Perdido Key in early 2004, the landfall of Hurricane Ivan later that year destroyed "much of the mouse's dune habitat."[335] After the 2005 hurricane season, "few mice were found" on Perdido Key, and no live PKBM were found in a March 2007 survey.[336]

PKBM recovery attempts were significantly complicated by the combined threats associated with land development and natural disasters. Escambia County eventually finalized a habitat conservation plan for the

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*peninsularis)*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/species/st-andrew-beach-mouse-peromyscus-polionotus-peninsularis (last visited Mar. 31, 2026).

329. *Perdido Key Beach Mouse*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/species/perdido-key-beach-mouse-peromyscus-polionotus-trissyllepsis (last visited Mar. 31, 2026).

330. End. Status & Crit. Hab. for Alabama Beach Mouse, Perdido Key Beach Mouse, & Choctawhatchee Beach Mouse; 49 Fed. Reg. 23794, 23794–95 (June 7, 1984).

331. Endangered and Threatened Wildlife and Plants; Draft Recovery Plan Revisions for 43 Southeastern Species, 84 Fed. Reg. 38284, 38284 (Aug. 6, 2019); Rick O'Connor, *50 Years of the Endangered Species Act, Part 2: The Perdido Key Beach Mouse*, UNIV. OF FLA., IFAS: BLOGS (June 8, 2023), https://blogs.ifas.ufl.edu/escambiaco/2023/06/08/50-years-of-the-endangered-species-act-part-2-the-perdido-key-beach-mouse/.

332. Endangered and Threatened Wildlife and Plants, 50 Fed. Reg. 23872, 23880–82 (June 5, 1985).

333. U.S. FISH & WILDLIFE SERV., CHOCTAWHATCHEE BEACH MOUSE, PERDIDO KEY BEACH MOUSE AND ALABAMA BEACH MOUSE RECOVERY PLAN, EXECUTIVE SUMMARY (1987); Endangered and Threatened Wildlife and Plants; 21 Draft Recovery Plan Revisions for 43 Southeastern Species, 84 Fed. Reg. 38291, 38292 (Aug. 6, 2019); *see, e.g.*, U.S. Fish & Wildlife Serv., *Perdido Key Beach Mouse Recovery Plan Draft Amendment* 1 (2019).

334. CHOCTAWHATCHEE BEACH MOUSE, PERDIDO KEY BEACH MOUSE AND ALABAMA BEACH MOUSE RECOVERY PLAN, *supra* note 333; Endangered and Threatened Wildlife and Plants; 21 Draft Recovery Plan Revisions for 43 Southeastern Species, 84 Fed. Reg. 38291, 38292 (Aug. 6, 2019).

335. *The Mouse That Roared*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/story/mouse-roared (last visited Mar. 31, 2026).

336. *Id.*

species, which included a limitation on the amount of land that could be developed, requirements such as clustering to minimize impacts, mitigation fees of $100,000 per acre, and annual homeowner impact fees.[337]

The individual incidental take permit (ITP) process preceding that plan proved to be long and difficult for landowners. The largest Perdido Key development, which originally proposed 1,900 residences on an approximately 400-acre site, sought FWS authorization under an ITP. The FWS determined the site included 59 acres of PKBM critical habitat.[338] After eight years, the FWS authorized development on 26 acres, and the eventual plan allowed for development of fewer than 1,000 clustered residences with changes to the development plan, $1.9 million payment to conserve PKBM habitat, and other measures.[339]

While the ESA listing of the western population of the gopher tortoise occurred in 1987, the proposed listing of the Eastern population was a long and contentious process that spanned nearly 35 years.[340] The gopher tortoise's range in the United States spans across six Southeastern states.[341] In 1987, the FWS listed the Western population of the gopher tortoise as threatened.[342] At that time, the species was not listed in the Eastern portion of the range.[343] Although the first petition to list the Eastern population was first proposed for listing in 2006, final action was not taken on the listing decision until 2022.[344] The Service concluded that the Western Distinct Population Segment (DPS) would continue to be listed as threatened under the ESA and that the Eastern DPS did not warrant ESA listing as either threatened or endangered.[345] Among other considerations related to the Eastern DPS, the FWS noted the conservation contributions of public and private organizations and stakeholders, as well as the species protection afforded by state laws and regulations for this DPS.[346]

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337. *Id.* Escambia County commissioners and FWS agreed to limit development to 66 acres on Perdido Key during a 30-year period. *Id.* The plan also requires mitigation fees of $100,000 per acre and annual homeowner impact fees of $201. *Id.* Further, development requirements include a native vegetation requirement, installation of wildlife friendly lights, and a ban on outdoor cats. *Id.*

338. *Id.*

339. *Id.*

340. *Gopher Tortoise Program*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, https://myfwc.com/wildlifehabitats/wildlife/gopher-tortoise/ (last visited Mar. 31, 2026); *see generally* FWS, RANGE-WIDE GOPHER TORTOISE CONSERVATION STRATEGY (2013).

341. RANGE-WIDE GOPHER TORTOISE CONSERVATION STRATEGY, *supra* note 340, at 4.

342. *Id.* at 1.

343. *Id.* at 2.

344. FLA. FISH & WILDLIFE CONSERVATION COMM'N, GOPHER TORTOISE MANAGEMENT PLAN 16–18 (2024).

345. *Id.* at 2.

346. *Id.* at 11.

## IV. CRITICAL HABITAT CONSERVATION: MANDATES AND INCENTIVES

Thirty years ago, the National Research Council recognized the important role of critical habitat designation and the need for specific actions to promote habitat conservation for listed species, stating:

> Because most species are endangered due to loss or degradation of habitat, site-specific actions should include identification, restoration, and management of habitat. Habitat acquisition for endangered species has also been a part of the federal program from its beginnings. Later amendments to the ESA have augmented the authority and funding for this effort, but acquisition has not kept and cannot keep pace with the number and size of the affected habitats or the modification and degradation that they face. In summary, habitat protection has always been an important component of endangered species programs. As our experience with endangerment and recovery has increased, habitat has become the central ingredient, and the ESA, in emphasizing habitat, reflects the current understanding of the crucial biological role habitat plays for species.[347]

Voluntary action, however, is essential for successful ESA implementation. An evaluation of ESA landowner incentives during the previous administration describes the need for an incentive-based approach:

> Positive incentives are crucial to supporting these actions, especially for private and state landowners that are under no ESA obligation to conserve species. And although Section 7(a)(1) requires federal agencies to help conserve species, this requirement is largely unenforceable as courts have generally found that the section does not require agencies to carry out any specific recovery action. Thus, incentives also might be employed to advance recovery on federal lands.[348]

This assessment also noted that these voluntary incentives "can come in many forms, including regulatory relief, financial support, technical support,

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347. NRC Report, *supra* note 216, at 75.

348. UCI L. CTR. FOR LAND, ENV'T & NAT. RES. (CLEANR), THE SIX PRIORITY RECOMMENDATIONS FOR IMPROVING CONSERVATION UNDER THE FEDERAL ENDANGERED SPECIES ACT 6 (2021).

and social recognition."[349] However, the incentive-based process may vary by landowner and may be "expensive and complex for many landowners" to implement.[350]

The ESA's development reflects both the purposes of its predecessor statutes and, preceding its enactment, a growing public awareness and concern about the need to protect species threatened with extinction. The ESA and its predecessors created ambitious goals to protect imperiled species and conserve the habitat necessary for them to thrive. Implementation of the ESA's requirements, however, has not always lived up to the statute's lofty objectives. The critical habitat designation requirement provides an example of the challenges associated with implementing the ESA's mandates. A variety of factors—scientific, economic, legal, policy, and practical—have created impediments to designation. Given these impediments and the shifting federal environmental objectives, a greater focus is needed on improving critical habitat protection through other means. In addition to evaluating statutory compliance, creating or enhancing non-regulatory incentives to critical habitat conservation may create "de facto" compliance in situations where regulatory action is impractical or unlikely to achieve designation through the statutory mandates.

The first endangered species were listed under the Endangered Species Preservation Act of 1966.[351] The first listed species habitat acquisition under this law occurred in 1968, when 2,300 acres were purchased as habitat for the Florida key deer.[352] During 1973, the year of the ESA's enactment, six animal and one fish species were listed.[353] By 2020, the United State Fish and Wildlife Service (FWS) had listed 718 domestic animal species.[354] Of those species, 503 were listed as endangered, and 215 were listed as threatened.[355] As of August 31, 2025, the total had increased to 744, with 495 animal species listed by FWS[356] as endangered, and 249 species listed as threatened.[357] According to the 2025 data, 679 active draft and final recovery

349. *Id.*

350. *Id.*

351. *ESA Milestones: Pre-1973*, *supra* note 10.

352. *Id.*

353. *Species Listed During Calendar Year 1973*, U.S. FISH & WILDLIFE SERV., https://ecos.fws.gov/ecp/report/species-listings-by-year?year=1973 (last visited Mar. 31, 2026).

354. SHEIKH & WARD, *supra* note 5, at 1, 3. Further, a total of 944 domestic plant species had been listed as endangered (772) or threatened (172) as of 2020. *Id.* at 3.

355. *Id.*

356. Env't Conservation Online Sys., *Listed Species Summary (Boxscore)*, U.S. FISH & WILDLIFE SERV., https://ecos.fws.gov/ecp/report/boxscore (last visited Mar. 31, 2026). The FWS data includes species listed by FWS and species listed jointly by FWS and the NMFS. *Id.*

357. *Id.* United States listings include those populations in which the United States shares jurisdiction with another nation. *Id.*

plans have been prepared for FWS-listed or FWS-NMFS-listed species in the United States.[358] ESA delisting data reflects that 135 species have been delisted under the ESA, with 122 of that total delisted by FWS.[359]

The ESA's conservation goal depends on the ability to implement measures to protect imperiled species and their habitat. While the statutory framework reflects the importance of protection for both the species and their habitats, the discourse above identifies the challenges with achieving its species and habitat protection and conservation objectives. In an era of changing federal administration perspectives on the ESA's purpose and mandates and their relative priority, both mandates (statutory and regulatory) and incentives for conservation and compliance are needed. While the relative emphasis on mandates and incentives is likely to shift over time, both will be necessary to implement the ESA's requirements and pursue achievement of its objectives and purposes.

### *A. Leveraging Habitat Value on Public Lands*

With or without designation, public lands can provide a significant habitat conservation opportunity for ESA-listed species. States and local governments have habitat acquisition programs that could promote conservation of listed species habitat. Proactive use of federal, state, and other available funding for habitat acquisition, restoration, and conservation may assist with developing the capacity to identify and protect habitat that can be used by listed species.[360] Within and near those areas, additional conservation opportunities may be created through mechanisms like conservation easements, wildlife corridors, and other innovative approaches to habitat protection.[361] As noted in the National Research Council report on the interaction of ESA and science, the Endangered Species Preservation Act of 1966 included a policy statement directing that "the Secretary of Interior, the Secretary of Agriculture, and the Secretary of Defense . . . shall preserve the habitats of such threatened species on lands under their jurisdiction."[362]

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358. *Id.* Some recovery plans cover more than one species, and a few species have separate plans covering different parts of their ranges. This count includes only plans generated by the USFWS (or jointly by the USFWS and NMFS), and only listed species that occur in the United States. *Id.*

359. Env't Conservation Online Sys., *Delisted Species*, U.S. FISH & WILDLIFE SERV., https://ecos.fws.gov/ecp/report/species-delisted (last visited Mar. 31, 2026).

360. MARK K. DESANTIS, CONG. RSCH. SERV., R45480, U.S. DEPARTMENT OF THE INTERIOR: AN OVERVIEW (June 23, 2021).

361. *Id.*

362. NRC Report, *supra* note 216, at 73.

The Department of Interior (DOI) manages approximately 475 acres of federal and tribal lands.[363] The mission of the FWS, a DOI agency, is "[t]o conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people."[364] Management of the National Wildlife Refuge System's more than 836 million acres of protected lands and waters is one of the FWS's responsibilities.[365] The National Wildlife Refuge System includes national wildlife "refuges, . . . wetland management districts, and other protected areas."[366] The National Park Service, a bureau within the DOI, controls significant federal these land areas pursuant to its directive to manage public lands "[t]o preserve unimpaired the natural and cultural resources and values of [national parks] for the enjoyment, education, and inspiration of this and future generations."[367] Further, the DOI's Bureau of Land Management is responsible for 244 million acres in support of its mission "[t]o sustain the health, diversity and productivity of public lands for the use and enjoyment of present and future generations."[368]

While they are not—and should not be—solely responsible for ESA conservation of species and habitat, federal lands can play an important role for both. The existing habitat within national parks, wildlife refuges, conservation areas, and other federal lands that qualify as critical habitat can promote its availability to ESA species within their borders. Preservation, conservation, rehabilitation, and maintenance of these federal lands could augment the amount of available critical habitat. With changing administrative priorities and regulatory initiatives, a consistent legal and policy framework for ensuring the commitment to public lands habitat needs to be maintained at the federal level.

To ensure that federal lands can provide necessary critical habitat, however, adequate funding is also essential. Federal land management agencies need sufficient resources—financial, programmatic, and personnel—to improve, preserve, and maintain current and potential habitat. Agencies would need funding and other resources to assess, plan for, and implement operational and use conditions. Resources would be needed to

363. DESANTIS, *supra* note 360, at 1. The CRS report also notes that approximately "700 million acres of subsurface minerals are under DOI management." *Id*.; *see* Reorganization Plan No. 3 of 1946, 11 Fed. Reg. 7875 (July 16, 1946).

364. DESANTIS, *supra* note 360, at 19.

365. *Id.* at 20. The acreage within the National Wildlife Refuge System also includes waterfowl production areas, coordination areas, and national monument areas outside national wildlife refuge boundaries but part of the National Wildlife Refuge System and FWS-managed submerged lands within marine national monuments. *Id.* [836 million acres].

366. *Id.*

367. *Id.* at 17.

368. *Id.* at 12.

avoid negative impacts from land uses and to identify the appropriate level of access to habitat areas on federal lands open to the public. Consistent attention and guaranteed personnel are prerequisites for successfully leveraging public lands for critical habitat benefits. While this focus would not eliminate the need for private land conservation measures, ensuring public land is suitable for ESA habitat will help promote both species and habitat viability.

### *B. Targeting Existing Programs and Funding*

Federal agencies contribute to habitat restoration with technical assistance and funding, efforts that may lead to protection of additional habitat for listed species. For example, the Ecological Services Program's responsibilities include restoring and protecting "healthy populations of fish, wildlife, and plants and the environments upon which they depend."[369] This program works with government agencies and landowners to assist them with "avoid[ing], minimiz[ing], and mitigat[ing] threats to" their lands and natural resources.[370]

In addition, DOI's Office of Surface Mining Reclamation and Enforcement administers coal mining regulation and operations.[371] The agency has responsibility for approximately 700 million acres of federal onshore subsurface mineral estate, and it supervises Bureau of Indian Affairs (BIA) mineral estate development on approximately 59 million acres.[372] This agency's mission includes "mitigat[ing] the effects of past mining by aggressively pursuing reclamation of abandoned coal mines."[373] To implement that mission, the agency is authorized to award grants to states and tribes for their reclamation efforts.[374]

#### 1. Section 6 Grants

The ESA includes requirements for FWS to cooperate with other agencies as well as state, local, and tribal governments to implement the ESA's objectives.[375] The FWS satisfies this requirement in part through programs and financial and other assistance.[376] The agency assists states and

369. *Ecological Services*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/program/ecological-services (last visited Mar. 31, 2026).

370. *Id.*

371. DESANTIS, *supra* note 360, at 18.

372. *Id.* at 13.

373. *Id.* at 18.

374. *Id.*

375. 16 U.S.C. §§ 1531–1544 (2024).

376. *See generally id.*

territories to develop and implement listed species conservation and monitoring programs through a variety of funding sources, including the Traditional Conservation Grant Program.[377] Through Section 6 of the ESA, FWS is authorized to fund various grants and programs.[378] These programs include the Cooperative Endangered Species Conservation Fund, which funds species and habitat conservation on public lands in states and territories.[379] Through the Habitat Conservation Plan grants, FWS funds voluntary conservation efforts by stakeholders to implement cooperative conservation goals, promote listed species recovery, fund habitat protection, and avoid habitat-land use conflicts.[380] FWS also awards Recovery Land Acquisition grants, which provide matching grants for listed species habitat acquisition to support recovery plan implementation.[381] These grants can fund a variety of activities, including habitat and species status surveys, habitat restoration and enhancement, research, and provide "opportunit[ies] to protect habitat essential to listed species" through funding for habitat acquisition"[382]

Further, the Cooperative Endangered Species Conservation Fund (CESCF) grants funds for "species and habitat conservation actions" by states and territories on non-federal lands.[383] These matching grants require a cooperative agreement with the DOI and are intended to cooperate "with public and private partners, reduce conflicts between species conservation and economic development, and promote long-term conservation of species and the ecosystems on which they depend."[384] During fiscal year 2024, FWS-

377. *Traditional Conservation Grants*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/service/traditional-conservation-grants (last visited Mar. 31, 2026); *Cooperative Endangered Species Conservation Fund Grants*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/library/collections/cooperative-endangered-species-conservation-fund-grants (last visited Mar. 31, 2026) [hereinafter Cooperative Conservation Grants].

378. 16 U.S.C. § 1535 (2024).

379. *Id.*; Cooperative Conservation Grants, *supra* note 377.

380. *Habitat Conservation Plan Land Acquisition Grants*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/service/habitat-conservation-plan-land-acquisition-grants (last visited Mar. 31, 2026). Stakeholders include "landowners, states, and other stakeholders," and grants are provided in combination of "state, local, and private contributions." *See Cooperative Endangered Species Conservation Fund-Section 6*, LAND & WATER CONSERVATION FUND, https://lwcfcoalition.org/section-6 (last visited Mar. 31, 2026).

381. *Cooperative Endangered Species Conservation Fund-Section 6*, *supra* note 380.

382. *Id.*; *Habitat Conservation Plan Land Acquisition Grants*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/service/habitat-conservation-plan-land-acquisition-grants (last visited Mar. 17, 2026).

383. *Cooperative Endangered Species Conservation Fund*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/program/cooperative-endangered-species-conservation-fund/what-we-do (last visited Mar. 30, 2026).

384. *Id.*

funded grants totaled approximately $62.34 million through the CESCF.[385] Other programs funded through the ESA Section 6 authorization include Conservation Planning Assistance Grants and Species Recovery Grants.[386]

Other statutes also authorize grants to benefit listed species and their habitat. For example, the Coastal Wetlands Planning, Protection, and Restoration Act provides funding to coastal states for the acquisition of coastal wetlands.[387] This program also can fund efforts to restore, manage, and enhance those wetlands.[388] The Fish and Wildlife Act of 1956 and the Migratory Bird Conservation Act include provisions for FWS actions to acquire and conserve wildlife lands and resources.[389] Other statutes establish FWS funding for public-private partnership grants "to protect, enhance, restore, and manage" wetlands, "waterfowl [and] other migratory birds and other fish and wildlife" as well as wetland ecosystems and other habitats.[390] Finally, the Partners for Fish and Wildlife Act funds actions to restore, enhance, and manage private lands with habitat for fish and wildlife.[391]

ESA Section 6 funding can provide opportunities to leverage existing funding to benefit listed species and conserve habitat. Section 6 authorizes the FWS to "enter into a cooperative agreement . . . with any [s]tate which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species."[392] The Section 6 cooperative agreement identifies funding opportunities for "international commitments" for listed species protection related to: states' "readiness . . . to proceed with a conservation program" satisfying ESA objectives and purposes, states' listed species' numbers and species' restoration potential, the "relative urgency" for initiating a species' protection program, and the importance of monitoring candidate and recovered species.[393]

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385. *Id.* The Cooperative Endangered Species Conservation Fund also provides funding to support habitat conservation plans and conservation plan agreements. *Id.*

386. *Id.*

387. 16 U.S.C. §§ 3951–3956; Coastal Wetlands Planning, Protection, and Restoration Act, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/law/coastal-wetlands-planning-protection-and-restoration-act (last visited Mar. 30, 2026).

388. *Id.*

389. 16 U.S.C. §§ 742(a)–754.

390. *North American Wetlands Conservation Act*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/law/north-american-wetlands-conservation-act (last visited Mar. 30, 2026); 16 U.S.C. §§ 715–715d, 4401; *Migratory Bird Conservation Act*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/law/migratory-bird-conservation-act (last visited Mar. 30, 2026).

391. 16 U.S.C. §§ 3771–3774.

392. 16 U.S.C. § 1535(c).

393. § 1535(d)(1).

Congress could amend ESA Section 6 funding provisions to prioritize grants for the acquisition, conservation, and rehabilitation of habitat that is, or could be, critical habitat for ESA-listed species. While the needs identified in the Section 6 funding list are important considerations to promote ESA species listing and recovery, the critical habitat priority focuses on a specific statutory mandate that has not received sufficient attention or support. The need for critical habitat protection—inside or outside the designation process—through cooperative programs and funding could supplement the protection afforded by the designation process and implement the ESA mandate in a more meaningful way.

### 2. Conservation Easements

In addition to funding programs that preserve and conserve habitat for listed species, Section 6 grants can provide funding to compensate landowners for voluntary actions that will protect listed species' habitat. Conservation easements are an option to conserve critical habitat with a less-than-fee-simple acquisition.[394]

> [The FWS] will acquire lands and waters consistent with legislation, other congressional guidelines, and Executive Orders, for the conservation of fish and wildlife and related habitat and to provide wildlife-oriented public use for educational and recreational purposes. The same policy states that when lands are to be acquired, we are to acquire only the minimum interest necessary to reach management objectives.[395]

The National Conservation Easements Database identifies more than 220,000 conservation easements protecting almost 38 million acres as of early 2025.[396] Protection of habitat through conservation easements can provide significant conservation benefits. The "strength [of a conservation easement] lies in permanent restriction of alternative uses of the land base, which maintains existing habitat by limiting landscape fragmentation and

394. U.S. FISH AND WILDLIFE SERV., CONSERVATION EASEMENT HANDBOOK: SUPPLEMENTS, 601 FW 6 (ADMINISTRATION OF NATIONAL WILDLIFE REFUGE SYSTEM CONSERVATION EASEMENTS), NATIONAL WILDLIFE REFUGE SYSTEM 2 (2022).

395. *Id.*

396. NAT'L CONSERVATION EASEMENT DATABASE, CONSERVATION EASEMENTS (2026).

conversion to uses incompatible with wildlife habitat."[397] As a perpetual restriction, a conservation easement "typically incorporates flexibility for landowners to manage the encumbered land in accordance with the best practices of the day."[398]

Funding available through Section 6 grants and other federal, state, local, and private funding sources can be used to promote the acquisition of conservation easements. These acquisitions will stimulate sufficient critical habitat protection to achieve species recovery and conservation. The preservation of this habitat may have benefits other than species protection, since conservation of lands that otherwise may be vulnerable to conversion can provide numerous environmental benefits.

### 3. Wildlife Corridors

Further, ESA funding can support federal, state, and other entities' efforts to create connections between areas of existing habitat with the potential to provide significant conservation benefits. For example, wildlife corridors provide an opportunity to create habitat connections that promote the species' survival and viability. The 2023 Council on Economic Quality Guidance (CEQ Guidance) described wildlife corridors as "distinct components of a landscape, waterscape, or seascape that provide connectivity."[399] It explains that wildlife corridors "facilitate movement of species between blocks of intact habitat," and "allow[] wildlife to access needed resources and facilitate[] fundamental ecological processes."[400] These corridors also "promote[] climate adaptation and resilience by enabling wildlife to adapt, disperse, and adjust to changes in the quality and distribution of habitats, including climate-driven shifts in species' geographic ranges."[401]

Promoting habitat connections through wildlife corridors and other innovative mechanisms to conserve or protect habitat can promote other ESA objectives and priorities. The CEQ Guidance noted that "connected habitats" can provide benefits to human populations, including "flood risk reduction,

397. Drew E. Bennett & Travis Brammer, *Habitat Leasing as an Alternative to Affirmative Conservation Easements in Conserving Wildlife on Private Lands*, WILDLIFE SOC'Y BULLETIN, Aug. 2, 2023, at 1, 1.

398. *Id.*

399. Memorandum from Brenda Mallory, Chair Council on Environmental Quality, Guidance for Fed. Departments and Agencies on Ecological Connectivity and Wildlife Corridors to Heads of Fed. Departments and Agencies 1, 1 (May 21, 2023) (on file with author).

400. *Id.* at 1; Nicole E. Heller & Erika S. Zavaleta, *Biodiversity Management in the Face of Climate Change: A Review of 22 Years of Recommendations*, 142 BIOLOGICAL CONSERVATION 14, 24 (2008).

401. Memorandum from Brenda Mallory, *supra* note 399, at 1.

extreme heat mitigation, health and public safety, access to nature, hunting and fishing, livelihoods, and subsistence."[402] Concerns related to development of wildlife corridors include the "spread of invasive species and wildlife diseases between ecosystems[,]" facilitation of predator and nuisance species crossings between ecosystems, and increase in the spread of wildfires.[403]

A recent Congressional Research Service report evaluated the concepts and effects of wildlife corridors to promote species conservation.[404] That report defined the term "[w]ildlife corridors" as "components of the landscape that are managed to create or improve ecological connectivity for one or more species."[405] The report noted "[s]pecies need connectivity between habitats to seek out sources for food and shelter and, in some cases, to adapt to environmental stressors and climate change."[406] Providing opportunities for "species to move between areas of their habitat[,]" wildlife corridors can play a role in reducing "the effects of habitat fragmentation in natural and urban settings."[407]

Some federal agencies have supported establishment of wildlife corridors, including work to "document the migration routes of certain species" for mapping of species' movements.[408] Wildlife corridors and crossings have been created on federally owned lands, and federal agencies have "support[ed] wildlife corridors that traverse federal and nonfederal lands."[409] Development and management of wildlife corridors may involve state-federal stakeholder collaboration: "In these cases, federal agencies collaborate with states and other stakeholders to establish and manage wildlife corridors."[410]

Perspectives on wildlife corridors may depend on determination of "the costs and benefits of . . . [their] implementation and management."[411] Supporters recognize wildlife corridors may increase species conservation and enhance biodiversity. Other support is based on their ability to "enhance populations of game animals popular for hunting and fishing."[412] Opposition

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402. *Id.*

403. PERVAZE A. SHEIKH & MARIEL J MURRAY, CONG. RSCH. SERV. R48350, WILDLIFE CORRIDORS: BACKGROUND AND ISSUES FOR CONGRESS 3 (Jan. 13, 2025) (citing Nick M. Haddad et al., *Potential Negative Effects of Corridors*, 28 CONSERVATION BIOLOGY 1178, 1178–80 (2014)).

404. *Id.*

405. *Id.* at Summary.

406. *Id.*

407. *Id.* at Summary, 1.

408. *Id.* at Summary

409. *Id.*

410. *Id.*

411. *Id.*

412. *Id.*

to wildlife corridors may focus on concerns about possible land use restrictions and a "spread of predators (e.g., wolves, grizzly bears) or invasive species."[413] Opponents also may have concerns about operational and maintenance costs and the corridors' effects on infrastructure.[414]

Congress has appropriated funds for wildlife crossing and fish passage projects in the past, and legislation promoting wildlife corridors has been proposed in recent years.[415] Topics in this legislation included "establishing or supporting wildlife corridors on federal and nonfederal lands[,]" appropriations for agency "grants to nonfederal stakeholders" for creation of wildlife corridors and "implement[ation] [of] other conservation activities."[416] Topics of congressional interests include the approach to federal and other wildlife corridor actions, coordination among governmental and private stakeholders, scientific support, and funding.[417]

Further, "at least 13 states have enacted legislation or issued direction to support wildlife corridors and crossings," and some tribes have obtained "federal financial and technical assistance to conserve wildlife through wildlife corridors crossing their lands and waters."[418] Florida, for example, has used wildlife corridors to promote conservation of the Florida panther. This species was listed as endangered in 1967 under the Endangered Species Preservation Act and has suffered from extremely low numbers recorded and threats of extinction for many years.[419]

### 4. Conservation/Mitigation Banking

Another incentive-based option for species and habitat conservation is conservation (or mitigation) banking. A conservation bank creates "a market-based system for conserving species and their habitat."[420] The banking system creates "a partnership between a landowner, one or more government agencies, and the community of developers and others who implement or fund projects that adversely affect" candidate and listed species or "other

413. *Id.*
414. *Id.*
415. *Id.*
416. *Id.*
417. *Id.* at 5.
418. *Id.* at Summary.
419. Endangered and Threatened Wildlife and Plants; 5-Year Status Reviews of 23 Southeastern Species, 82 Fed. Reg. 125 (June 30, 2017). In the 1970s, there were reports of as few as ten panthers in the wild. In the 1990s, the FWS and Florida introduced eight female Texas pumas into Florida to promote population increase and genetic diversity. Jason Totoiu & Richard Grosso, *Strategies to Recover the Florida Panther and Secure the Preservation of the Florida Wildlife Corridor*, 99 FLA. BAR J. 1, 9 (2025).
420. *Conservation Banking*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/service/conservation-banking (last visited Mar. 30, 2026).

species of concern."[421] The conservation banking process involves the landowner's commitment to "permanently protect[] and manag[e] land for" the affected species.[422] In exchange, the FWS "approves a specified number of habitat or species credits that the bank owners may sell to developers and other project proponents who need to offset project impacts to the same species occurring at another location within the community."[423] Under this *in-kind* mitigation strategy, landowners subject to mitigation pay for the habitat benefit offered by landowners willing to be responsible for "preservation of existing high-quality habitat, restoration of habitat in degraded areas, and/or establishment of habitat where needed to conserve particular species" within the conservation bank.[424] Under this system, *landowners* include "[p]rivate, tribal, and government lands."[425]

Conservation banking creates the potential for a "win-win" situation for regulators and the regulated community. In Florida, the system has been used to preserve habitat for the gopher tortoise and to protect the species.[426] Gopher tortoises are listed under the ESA as a threatened species in the Western portion of their range; they are also listed under Florida law as a threatened species within the state.[427] This species' dependence on habitat is affected by the significant amount of habitat that occurs on private land:

> Privately owned lands account for approximately 80 percent of potential gopher tortoise habitat, of which approximately half are managed for forest production. Across the gopher tortoise range, large working forests account for over 6 million ac[res] . . . of forest land, representing a significant land use with the potential to influence gopher tortoise resiliency and viability. While not all working forest lands include appropriate habitat conditions for gopher tortoises, approximately 2.78 million ac[res] . . . of suitable soil types and 2.98 million ac[res] . . . of open pine conditions are estimated to occur on private forest lands.[428]

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421. *Id.*
422. *Id.*
423. *Id.*
424. *Id.*
425. *Id.*
426. *Gopher Tortoise Permits*, FLA. FISH & WILDLIFE CONSERVATION COMM'N, https://myfwc.com/license/wildlife/gopher-tortoise-permits/ (last visited Mar. 30, 2026).
427. *Gopher Tortoise Mitigation Contributions*, FLA. FISH AND WILDLIFE CONSERVATION COMM'N, https://myfwc.com/license/wildlife/gopher-tortoise-permits/mitigation/ (last visited Mar. 30, 2026) [hereinafter FWC Mitigation]; GOPHER TORTOISE MANAGEMENT PLAN, *supra* note 344, at 20.
428. Endangered and Threatened Wildlife and Plants; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, 87 Fed. Reg. 196 (Oct. 12, 2022).

Before 2008, the Florida Fish and Wildlife Conservation Commission (FWC) required financial mitigation for development that destroyed gopher tortoise habitat, including their burrows, and allowed entombment of the species.[429] The FWC convened a statewide stakeholder group to develop a program for the conservation and protection of gopher tortoises. This process led to the creation of the first Gopher Tortoise Management Plan and permitting guidelines.[430]

The most recent version of the Gopher Tortoise Management Plan notes that 61% of "[t]he remaining . . . [acreage] of potential gopher tortoise habitat . . . is held by private landowners."[431] The permit system creates a financial incentive for landowners to preserve those private lands by creating a system of mitigation payments and credits.[432] The permit process includes establishment of FWC-certified mitigation banks authorized to accept relocated gopher tortoises for conservation purposes within preserved and maintained habitat for this species. In exchange, the permittees pay mitigation contributions for the relocated tortoises to obtain authorization for the permitted action.[433] Selling credits allows the landowners to preserve their lands and their ownership, and it creates an approved option for permittees to secure authorizations for permitted actions by relocating gopher tortoises to appropriate habitat.

Regulatory standards and requirements are essential to ensuring the efficacy of conservation banking as a viable habitat protection and promote this option as a conservation tool. To be effective, the conservation banking regulations must "reduce uncertainty, increase transparency, and adequately address [any] current deficiencies."[434] Other considerations for improving conservation banking to promote and increase available habitat include implementation of pilot programs; transparency in banking design, implementation, accounting, and documentation; and evaluation of conservation benefits.[435]

A holistic evaluation of species conservation actions and programs (e.g., "educational awareness," "habitat protection," and species monitoring)—rather than reviewing "one conservation action at a time"—may assist

429. GOPHER TORTOISE MANAGEMENT PLAN, *supra* note 344, at 16–17.

430. *Id.* at 16.

431. *Id.* at 48.

432. FWC Mitigation, *supra* note 427.

433. *Id.* at 24.

434. Maria Jose Carreras Gamarra & Theodore P. Toombs, *Thirty Years of Species Conservation Banking in the U.S.: Comparing Policy to Practice*, 214 BIOLOGICAL CONSERVATION 6, 7, 16–17 (2017).

435. *Id.* at 6.

regulators, landowners, and the public in considering how to most effectively conserve and protect species and habitat.[436]

These examples of incentive-based conservation options may allow leveraging of available funding through existing programs to achieve both their stated objectives and benefits for listed species and their habitat. If the focus and funding is targeted toward priority species and property, existing resources can be leveraged to create a greater benefit. One option is to amend existing statutes and regulations authorizing these programs to prioritize acquisitions, funding, and other assistance to benefit the species most in need of protection. Innovative solutions like wildlife corridors can target habitat protection at the place and for the purposes for which it is needed. Combining federal resources with available state, local, and other resources can increase the opportunities to benefit listed species and their habitats.

To achieve ESA compliance and realize its benefits, both the "carrot" and the "stick" are necessary tools. FWS action to comply with ESA mandates to list imperiled species and designate critical habitat is required to effectively implement the ESA. Defending agency actions and proactively regulating activity are both necessary. However, achieving the ESA's goals and objectives will require cooperation among the FWS, other federal, state, and local agencies, landowners, and the regulated community. Creating and utilizing incentives for cooperative voluntary actions can encourage and facilitate needed cooperative conservation efforts by governmental, tribal, organizational, and private landowners. While cooperation alone will not address the need for critical habitat protection and may not always be feasible, the ESA's promise is best achieved by balancing statutory and regulatory mandates with a cooperative framework that focuses on beneficial results.

## CONCLUSION

Achieving the purposes and goals of the ESA is a complicated endeavor. The ESA includes laudable goals for a comprehensive program to protect species and habitat. Its statutory framework also includes requirements for action to protect and conserve species and their habitat. In addition, the ESA—through the statute and implementing regulations—specifies time periods for action and creates mandates for compliance. Regarding critical habitat, the ESA provides for balancing of the benefits of both designation and exclusion of listed species habitat. Further, through the statute and

436. *See* David Luther & Katherine Gentry, *Threatened Vertebrate Species: Associations Between Conservation Actions, Funding, and Population Trends*, 39 ENDANGERED SPECIES RSCH. 105, 105, 106 (2019).

voluntary programs, the ESA offers incentives for state, local, and tribal governments as well as private landowners, creating the opportunity for these landowners to assist with the achievement of the ESA's promise.

Despite its comprehensive statutory and regulatory framework, effective implementation of the ESA can be difficult to achieve. Agency inaction, legal challenges, and resistance from landowners and the regulated community can impede progress in listing species and designating critical habitat. Further, shifting federal administration objectives and direction can affect how and whether the ESA's requirements are addressed and which approach—mandates or incentives—will best match the administration's priorities.

The history of attempts to implement the ESA and more recent statutory and regulatory proposals demonstrate the challenges associated with maintaining an effective balance between mandates and incentives to achieve compliance. The effect of failing to timely and effectively designate critical habitat can foreclose significant conservation opportunities for species and their habitat; therefore, employing both mandates and incentives for conservation is essential. The incentive-based and mandate-focused approaches to ESA compliance are both necessary, particularly in the context of critical habitat designation.

Both mandates and incentives can, and should, be considered vital to ESA implementation under any type of administration. Even in an administration heavily focused on mandates to achieve compliance, incentives remain essential because they can stimulate both interest and participation in the regulatory process. The weight of each, however, will likely change based on the focus of the executive branch's priorities and agenda regarding the ESA and its implementation. Both approaches clearly have benefits and challenges. However, with an evolving regulatory framework, balancing mandates and incentives may be the only way to satisfy the ESA's goals regarding habitat conservation through critical habitat designation or other means.