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Single-Minded Determination: The Problems with the Endangered Species Act and the Consensus on Fixing Species Conservation Law Through a Focus on Ecosystems and Biodiversity

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INTRODUCTION

The Endangered Species Act (ESA),[1] enacted in 1973, is widely considered to be the pinnacle of American conservationist environmental law.[2] By many people's calculations, it has been extremely successful in achieving its goal[3] of conserving endangered and threatened species in the face of both private and public development projects and other threats to species survival.[4] This success rate is commonly attributed to the fact that the listing of a species[5] is accompanied by a bevy of restrictions and other requirements imposed by the ESA, including a ban on the "taking" of a listed species.[6] Indeed, the recovery of a number of species in the

1 16 U.S.C. §§ 1531–1544 (2012).

2 *See* Jamison E. Colburn, *New Directions in Environmental Law: Qualitative, Quantitative, and Integrative Conservation*, 32 WASH. U. J.L. & POL'Y 237, 249 (2010) (calling the ESA "conservation's flagship" law); Frederico Cheever, *The Road to Recovery: A New Way of Thinking About the Endangered Species Act*, 23 ECOLOGY L.Q. 1, 3 (1996) (calling the ESA "one of the world's most powerful species preservation laws . . ."); Holly Doremus, *Patching the Ark: Improving Legal Protection of Biological Diversity*, 18 ECOLOGY L.Q. 265, 265 (1991) (stating that the ESA is "widely regarded as the strongest legislation ever devised for the protection of nonhuman species . . . .").

3 16 U.S.C. § 1531(b) ("The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth [earlier in this section].").

4 *See* KIERAN SUCKLING ET AL., CTR. FOR BIOLOGICAL DIVERSITY, ON TIME, ON TARGET: HOW THE ENDANGERED SPECIES ACT IS SAVING AMERICA'S WILDLIFE 1 (May 2012), *available at* http://www.esasuccess.org/pdfs/110_REPORT.pdf (arguing that the conservation goals of the ESA have been a success because "90 percent [of protected species] are recovering at the rate specified by their federal recovery plan.""). *But cf.* Roddy Scheer & Doug Moss, *Is the Endangered Species Act a Success or Failure?*, SCI. AM. (Aug. 9, 2012), http://www.scientificamerican.com/article/endangered-species-act-success-failure/ (noting that "only one percent of species (20 out of 2,000) under the protection of the [ESA] have recovered sufficiently to qualify for delisting.").

5 *See* 16 U.S.C. § 1533(a) (providing guidelines on the listing of species as "endangered" or "threatened" under the ESA).

6 *Id.* § 1538(a)(1). *See also id.* § 1533(a)(3)(A)(i) (mandating the listing of a species' "critical habitat" "concurrently with making a determination" that a species is endangered or threatened); *id.* § 1536(a)(1) (requiring other agencies to consult with the Secretary of

past forty years can be attributed to the protection of individual species under the ESA.[7]

While the individual species protection provisions of the ESA have been successful in protecting, and occasionally recovering, endangered and threatened species populations, these provisions are not enough to ensure vibrant and thriving species populations and ecosystems in the future—especially considering the contemporary problems not envisioned by the drafters of the ESA in 1973, such as threats posed by global warming and water shortages.[8] While the ESA focuses on protecting individual specimens and habitats primarily through its "take" and critical habitat provisions, respectively, these provisions are not sufficient to recover and protect species based on what we now know about species conservation. We know that "[e]xtinction is now caused entirely by human destruction of natural ecosystems, human consumption, and pollution."[9] Moreover, "[s]cientists now realize that this planet functions because of the vast array of services ecosystems provide it."[10] Accordingly, the preservation of species depends on healthy, bio-diverse ecosystems. Therefore, rather than focusing on species-by-species protection and protection of individuals, which does not provide a holistic solution

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the Interior to ensure any Federal project does not harm listed species); Tenn. Valley Auth. v. Hill, 437 U.S. 153, 194 (1978) (noting that once a species is listed, Congress meant for that species to be given "the highest of priorities" with regards to its protection).

7 *See* SUCKLING ET AL., *supra* note 4, at 5–6. Table 1 of the report provides a number of species that have been "delisted" due to a successful recovery attributable to the ESA's individual species protection. These species include popular and charismatic species such as the gray wolf and the bald eagle.

8 *See, e.g.*, Paul R. Epstein & Dan Ferber, *The Biggest Global Health Threat of the 21st Century*, HUFFINGTON POST (Apr. 8, 2011, 6:04 PM), http://www.huffingtonpost.com/paul-r-epstein-md-mph/post_1919_b_846896.html (discussing a commission report labeling climate change as the biggest global health threat, for both humans and the environment, of the 21st century); Fiona Harvey, *Global Majority Faces Water Shortages 'Within Two Generations'*, GUARDIAN (May 24, 2013, 9:17 AM), http://www.theguardian.com/environment/2013/may/24/global-majority-water-shortages-two-generations (outlining the view of over 500 scientists that a "majority of the 9 billion people on Earth" will experience a fresh water shortage within two generations).

9 Jacqueline Lesley Brown, *Preserving Species: The Endangered Species Act Versus Ecosystem Management Regime, Ecological and Political Considerations, and Recommendations for Reform*, 12 J. ENVTL. L. & LITIG. 151, 155 (1997) (citing Paul R. Ehrlich, *The Loss of Diversity: Causes and Consequences*, *in* BIODIVERSITY 21 (E.O. Wilson ed., 1988)).

10 William M. Flevares, *Ecosystems, Economics, and Ethics: Protecting Biological Diversity at Home and Abroad*, 65 S. CAL. L. REV. 2039, 2049 (1992).

for recovering declining species populations, species preservation laws should focus on "protect[ing] the natural theaters in which natural life processes function."[11]

A significant political impediment stands in the way of any major reform of the ESA. Most scholars and critics worry about the ESA's reauthorization if Congress was to include major reforms in favor of increased conservation.[12] Therefore, any change to how the law approaches species preservation must be sensitive to the politics involved and the possibility that any proposal to fundamentally change the ESA, or even replace it, could result in species preservation laws being even weaker or possibly non-existent. Accordingly, this Article ultimately will explore options agencies can use to change how they apply the ESA's current provisions in order to take into account ecosystem management and biodiversity, thus improving species conservation.

More generally, this Article will begin by outlining how species preservation is now approached under the ESA.[13] This Article will then discuss how the current method of species preservation under the ESA, specifically the protection of individual species through determinations of whether a species is "threatened" or "endangered" and the prohibitions on "taking" such species, is inadequate to protect species populations in the future. Indeed, it is imperative to have a more holistic, ecologically-sound approach that focuses on ecosystems and biodiversity.[14] This Article will then discuss how this improved approach to species preservation could be achieved through

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11 Brown, *supra* note 9, at 163.

12 *See* Ronny Millen & Christopher L. Burdett, Note, *Critical Habitat in the Balance: Science, Economics, and Other Relevant Factors*, 7 MINN. J.L. SCI. & TECH. 227, 227 (2005) ("Since 1992, Congress has remained deadlocked over reauthorization of the [ESA]."); Dean Lueck, *The Law and Politics of Federal Wildlife Preservation*, *in* POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN 61–115 (Terry Lee Anderson ed., 2000) (discussing generally why the ESA causes such intense debate and gridlock in Congress). This worry has been ever-present throughout the history of the ESA. *See* Roger Platt, *Ships Passing in the Night: Current Prospects for Reauthorization of the Endangered Species Act*, ENDANGERED SPECIES UPDATE (The Sch. of Natural Res. & Env't, Univ. of Mich., Ann Arbor, Mich.), Nov.–Dec. 1997, at 3, *available at* http://www.deepblue.lib.umich.edu/bitstream/handle/2027.42/39339/als9527.0014.011.pdf ?sequence=1 (discussing issues with Congressional reauthorization in 1997 due to competing private and environmental interest groups); Patrick Y. O'Brien, *Sidebar: Hot-Button Issues for Endangered Species Act Reauthorization*, CAL. AGRIC. (Univ. of Cal., Davis, Cal.), Nov.–Dec. 1995, at 35, *available at* http://www.ucanr.edu/repositoryfiles /ca4906p35-69830.pdf (discussing these issues in 1995).

13 *See infra* Part II.

14 *See infra* Part III.

a change in regulations applying the provisions of the ESA, specifically of the recovery plans[15] and the critical habitat provisions.[16] Changes to regulations would avoid a reauthorization or amendment through Congress, and would thus avoid the political issues associated with the ESA.[17] This Article will conclude by briefly discussing changes to the ESA that, as legal and scientific scholars widely accept, need to be made in order to bring the Act up-to-date with what we now know about ecosystems and biodiversity; altering how agencies apply the ESA is the best way to achieve this goal.[18]

I
CURRENT STRUCTURE AND EXECUTION OF THE ESA

Since its enactment, the ESA has implemented its species preservation goals on a species-by-species basis.[19] This approach is considered as the best way to achieve the purposes of the ESA, which are "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved [and] to provide a program for the conservation of such [species] . . . ."[20] In order to understand this species-by-species approach, this Article will first go through the mechanisms of the ESA and then explain how agencies address each of these purposes under the ESA.

A. The Listing Requirement

Generally, in order to receive protection under the ESA, a species must be listed as either "endangered" or "threatened." A species is listed as such if: there is a present or threatened destruction or adverse

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15 16 U.S.C. § 1533(f) (2012).

16 *Id.* § 1532(5)(A)(i).

17 *See infra* Part IV. This Part will also discuss some alternatives outside of the ESA.

18 *See infra* Part V.

19 In other words, the protections afforded under the ESA do not apply to all species but are rather awarded to specific species who meet certain criteria. *See* Doremus, *supra* note 2, at 265 (labeling the ESA's approach a "species-by-species focus"); Flevares, *supra* note 10, at 2040 ("[T]he Act only protects those species listed as endangered or threatened . . . .").

20 16 U.S.C. § 1531(b). There is also another purpose listed in this section, "to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section." As this Article will not be dealing with the international treaties and conventions relating to species conservation the United States is subject to, however, this Article will not be discussing this purpose as set forth in the ESA.

modification the species' habitat or range; the species is being over-utilized; there is widespread disease or predation in the species population; the current regulatory mechanisms are inadequate; or other manmade or natural factors are threatening the species' existence.[21] The determination of whether or not a species is to be listed is based "solely on . . . the best scientific and commercial data."[22] This determination is often very controversial,[23] primarily due to the fact that parties are often in disagreement on what constitutes "best scientific and commercial data."[24] Therefore, the listing of species is often an important decision and subject to heated debate.

The three major protections accompany the listing of a species are: the take provisions,[25] critical habitat designation,[26] and the consultation requirement.[27]

The effect of listing a species often goes beyond the protections of the ESA. Many environmental and animal-focused, non-governmental organizations (NGOs) primarily focus on the preservation of endangered and threatened species.[28] The Department of the Interior's listing decisions guide NGO activities, and therefore provide a significant signaling function to many NGOs.

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21 *Id.* § 1533(a)(1)(A)–(E).

22 *Id.* § 1533(b)(1)(A).

23 Not only can the failure to list a species be controversial, but the listing of a species as "threatened" instead of endangered can also be very controversial, since threatened species have less protection than endangered species. *See* In re Polar Bear Endangered Species Act Listing and § 4(d) Rule Litigation, 794 F. Supp. 2d 65, 68 (D.D.C.2011) (describing a challenge brought by environmental organizations that believed the Fish and Wildlife Service was arbitrary and capricious in listing the polar bear as threatened and not endangered).

24 *See id.* at 81 (explaining the argument presented by environmental organizations that the models used by the Fish and Wildlife Service were not the "best available science"); *see also* Kristin Carden, *Bridging the Divide: The Role of Science in Species Conservation Law*, 30 HARV. ENVTL. L. REV. 165, 195 (2006) (arguing that the ESA "myopic[ally] reli[es] on science" and questioning the ESA's use of "best scientific data").

25 § 1538(a).

26 *Id.* §§ 1532(5), 1533(b)(2), 1536(a)(2).

27 *Id.* § 1536(a)(2).

28 *See, e.g.*, ENDANGERED SPECIES COALITION, http://www.endangered.org/about-us/ (last visited Sept. 23, 2013) (stating its goal as "protect[ing] endangered species and the special places where they live"). However, some organizations, while seemingly protecting just "endangered species," actually list as their organizational goals as "going beyond" mere endangered species protection. *See* WORLD WILDLIFE FOUND., http://worldwildlife.org/about (last visited Sept. 23, 2013) ("WWF's mission is to conserve nature and reduce the most pressing threats to diversity of life on Earth."). Thus, while the listing of species does serve an important signaling function to NGOs, it does not necessarily guide their approach to species preservation.

B. Fulfilling the Purposes of the ESA

While listing is an important step in species preservation under the ESA, it is merely the first step in the species preservation scheme. As noted above listing a species triggers a number of statutory protections that then begin to apply to that species. These protections fulfill the purposes of the ESA, namely to "[conserve] ecosystems upon which endangered species and threatened species depend"[29] and to "provide a program for the conservation of such endangered species and threatened species."[30]

1. Conserving Listed Species' Ecosystems

The ESA attempts to preserve listed species' ecosystems through two primary avenues: the critical habitat designation and the take provisions.[31] The most obvious attempt to preserve species' ecosystems in the ESA is the designation of a "critical habitat" that accompanies the listing of a species.[32] The critical habitat of a species is defined as "the specific areas within the geographical area occupied by the species . . . 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"[33] and "specific areas outside the geographical area occupied by the species"[34] if the Secretary of Interior (Secretary) determines such an area is "essential" for the preservation of the species.[35] As with the initial listing determination, the Secretary is required to use the "best scientific data available" when making a critical habitat determination, but only "after taking into consideration the economic

29 16 U.S.C. § 1531(b).

30 *Id.*

31 Preservation is also achieved through the consultation requirement, which, in a sense, incorporates these two provisions, and vice-versa. The consultation requirement will be discussed in full *infra* Part II.B.2. However, parts of the consultation requirement will necessarily be discussed in this Part as well, as it requires any federal agency to consult with the Department of the Interior anytime it is found that an agency action would jeopardize a listed species' critical habitat. *See id.* § 1536(a)(2).

32 *Id.* § 1533(b)(2). Such a designation is supposed to be made "concurrently" with the listing of a species. *Id.* § 1533(a)(3)(A)(i).

33 *Id.* § 1532(5)(A)(i).

34 *Id.* § 1532(5)(A)(ii).

35 *Id.* Despite this seemingly expansive language, a critical habitat *cannot* be "the entire geographical area which can be occupied by the threatened or endangered species" unless otherwise determined by the Secretary. *Id.* § 1532(5)(C).

impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat."[36] However, unlike with the listing requirement, the Secretary may weigh the costs and benefits of designating a critical habitat and exclude an otherwise applicable area from a critical habitat designation (unless the Secretary determines that, without the designation, the species may become extinct).[37]

The designation of a critical habitat requires that a federal agency consult with the Secretary if the agency determines that taking a certain action would adversely affect that habitat.[38] Critical habitats are also taken into account when developing recovery plans for the benefit of a listed species.[39] However, it is unclear whether or not the critical habitat designation has any direct effect on private individuals not involved with the federal government. While the Secretary is required to publish in the Federal Register a list of activities that may harm a critical habitat,[40] there is no requirement that individuals refrain from engaging in these activities.[41] Therefore, a critical habitat designation mainly protects the habitat from government activity rather than from private activity.

Many of the shortcomings of the critical habitat scheme are rectified in the take provision of the ESA, which *does* allow enforcement against private individuals.[42] Among other things, the take provision makes it illegal for anyone to "*take [any listed species] within* the United States . . . "[43] The term "take" under the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or

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36 *Id.* § 1533 (b)(2).

37 *Id.*

38 *Id.* § 1536(a)(2); 50 C.F.R. § 17.94 (2014).

39 *See* § 1533(f).

40 *Id.* § 1533(b)(8).

41 With this in mind, it should be noted that it is unclear how much benefit the critical habitat designation has as a whole, as "the designation process provides little real conservation benefit, consumes enormous agency resources, and imposes social and economic costs." *See* Millen & Burdett, *supra* note 12, at 228 (citing *The Critical Habitat Reform Act of 2003: Hearing on H.R. 2933 Before the H. Comm. on Resources*, 108th Cong. 9 (2004) (statement of Craig Manson, Assistant Secretary for Fish, Wildlife, and Parks, Department of Interior)); *but see* Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687, 687, 695–707 (1995) (holding that private alteration of a habitat that actually leads to the "take" of a species is prohibited); *see also infra* text accompanying notes 43–49.

42 16 U.S.C. § 1538(a).

43 *Id.* § 1538 (a)(1)(B).

collect, or to attempt to engage in any such conduct."[44] While this statutory definition explicitly includes enforcement against private individuals, it does not, read alone, require the preservation of a species' habitat.

However, the Department of the Interior promulgated a rule that interprets the take provision to include habitat considerations. The department defined the term "harm," as it is used in the statutory definition of "take," to include "an act which actually kills or injures wildlife," which "may include significant habitat modification."[45] This expanded definition of take was upheld by the United States Supreme Court in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*,[46] where the Court noted that such a definition "reasonably construed the intent of Congress."[47]

Without further regulation, the take provision, as opposed to the critical habitat provision, stands as the most powerful tool under the current structure of the ESA to achieve the goal of "conserving listed species' ecosystems."[48]

2. Providing a Program for Conserving Listed Species

The primary purpose of the ESA, apart from conserving a listed species ecosystem, is to "provide a *program* for the conservation of . . . endangered species and threatened species."[49] While this programmatic purpose is most clearly achieved through the take

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44 *Id.* § 1532(19).

45 50 C.F.R. § 17.3(c)(3) (2014).

46 *Sweet Home*, 515 U.S. 687 (1995).

47 *Id.* at 708.

48 The Court's acceptance of the Secretary's definition of "harm" in *Sweet Home* means that "[The Fish and Wildlife Service may] impose criminal sanctions on private landowners for virtually any activity that the private landowner desires to undertake [if] he is 'harming' an endangered species through habitat modification" . . . ." James Tyler Moore, Note and Comment, Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*: Defining "Harm" Under Section 9 of the Endangered Species Act*, 32 IDAHO L. REV. 81, 108 (1995). Though this definition has been very costly for some landowners, the specter of government oversight has spurred other landowners to develop private land management plans to help conserve listed species or species that may become listed. *See, e.g.*, Neena Satija, *It's Not the Rare Birds They Mind So Much. It's the Watchdogs.*, N.Y. TIMES, Sept. 26, 2013, http://www.nytimes.com/2013/09/27/us/its-not-the-rare-birds-they-mind-so-much-its-the-watchdogs.html?pagewanted=all&_r=0.

49 16 U.S.C. § 1531(b) (emphasis added).

provision, it is also achieved through the consultation requirement and through the development of recovery plans.

Under the ESA conservation scheme, the take provision is designed primarily to ensure that individuals within a species are not "taken" so as to reduce the overall species population. In other words, the take provision makes individual species "off limits."[50] Accordingly, the primary "program" for conserving listed species under the ESA is to assure species populations are not reduced through the elimination of individuals within the population.

The consultation requirement is similar to the take provision, and strives to ensure species populations are not reduced. The consultation requirement provision requires that "[e]ach Federal agency shall, in consultation with [the Secretary of the Interior], insure that any [agency] action . . . is not likely to jeopardize the continued existence of any [listed species] or result in the adverse modification of [the species' critical habitat]."[51] This provision applies only to agency actions that are "authorized, funded, or carried out by such agency"[52] (i.e., "direct actions") suggesting that other actions in which an agency may be involved (i.e., "indirect actions") do not count as "agency actions" under this provision.[53] Despite this limitation, the consultation requirement has proven to be a stringent protection for listed species in legal precedent.[54] Courts have followed the lead of *Tennessee Valley Authority v. Hill*[55] and are unwilling to grant agencies much discretion when an action would put species in danger,

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50 *See* Cheever, *supra* note 2, at 10 (explaining how the perception of the ESA in the legal community is that "the fate of protected species rises and falls with discrete, identifiable, and enjoinable projects" and that "the prohibitions of the Act," including the prohibitions under the take provision, reign supreme in species conservation). *See also supra* note 19 and accompanying text (explaining how the ESA works on a "species-by-species" basis).

51 16 U.S.C. § 1536(a)(2). Also, it should be noted again that this provision plays into the first purpose discussed in this Note as well, since the consultation requirement applies to a species' critical habitat. *See supra* note 32 and accompanying text.

52 16 U.S.C. § 1536(a)(2).

53 The Supreme Court has also limited this provision to *discretionary* agency actions, and thus it does not cover agency actions that are mandated by statute. Nat'l Ass'n of Home Builders v. Defenders of Wildlife, 551 U.S. 644, 666 (2007).

54 *See* Tenn. Valley Auth. v. Hill, 437 U.S. 153 (1978) (construing the consultation requirement as a strict prohibition on any agency action that would harm a listed species, even if the agency action is a project that is virtually completed); Oliver A. Houck, *The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce*, 64 U. COLO. L. REV. 277, 316 (1993) (explaining that the consultation requirement has been imposed in a "mandatory, nondiscretionary manner" by the courts).

55 *Tenn. Valley Auth.*, 437 U.S. 153.

regardless of how far along in the process an agency may be in implementing an action or how much money has been expended.[56]

In essence, the consultation requirement makes listed species "off limits" by preventing adverse action against them. Accordingly, the consultation requirement works in tandem with the take provision to provide the backbone of the ESA. Together the provisions provide a "program" for conservation by preventing the reduction in species population caused by adverse action.

The more long-term "programmatic" provision of the ESA is the recovery provision. Once a species is listed, the Secretary is required to "develop and implement plans ['recovery plans'] for the conservation and survival of [listed species] . . ."[57] This provision most accurately represents a programmatic approach to conserving listed species; it represents an effort to assure species populations are conserved and achieve sustainable populations through the implementation of a specific conservation plan.

Though the recovery plan provision has been described to be the penultimate provision in implementing the ESA, recovery plans play a very small part overall in the execution of the ESA. While species recovery plans are to be developed for each listed species, with limited exceptions, there is no requirement that the recovery plans be carried out.[58] Furthermore, despite the fact that recovery plans should be the "guid[ing force in] all [ESA] activities,"[59] recovery plans "have played an insignificant role in the protection of [listed species]."[60] Thus, while recovery plans are quite literally "programs for conserving listed species," they do not play as important a part as the take and consultation provisions in providing for the protection and conservation of listed species.

56v*See id.* at 195 (enjoining the TVA from completing a dam project that was almost completed because the project jeopardized the endangered snail darter); Steven A. Daugherty, *Threatened Owls and Endangered Salmon: Implementing the Consultation Requirements of the Endangered Species Act*, 14 PUB. LAND L. REV. 203, 205 (1993) (concluding that, with respect to the consultation requirement, "the mandate of the ESA remains essentially unchanged" with regards to endangered species "disrupting" public projects).

57 16 U.S.C. § 1533(f)(1).

58 *See* Cheever, *supra* note 2, at 26 (noting that "implementation schedules" in recovery plans are unenforceable). Indeed, many species do not even have a recovery plan at all.

59 59 Fed. Reg. 4,846 (Feb. 2, 1994).

60 Cheever, *supra* note 2, at 26.

II
FLAWS IN THE CURRENT IMPLEMENTATION OF THE ESA

Undoubtedly there is some strength to the ESA, and certain provisions may even suggest that it is the world's strongest species conservation law.[61] However, despite the Act's strengths, the way that agencies currently administer the ESA is insufficient to assure future species preservation—especially considering what we have learned since the ESA was enacted, 40 years ago, about the role of ecosystems and biodiversity in conserving species. The goals of the ESA are not currently being satisfied as well as they could be if agencies were to take a more holistic approach in administering the ESA. Arguably, agencies are largely ignoring the purposes of the ESA, since the current implementation scheme does not do a sufficient job of saving species, listed or otherwise, and has failed to protect ecosystems.[62] Thus, the problems with the current approach to species conservation through the ESA are both practical and theoretical, and this requires a rethinking of our approach towards species conservation law.

A. Practical Issues

Species conservation law in the United States is focused on preserving species on a species-by-species basis. Because of the strict protections against taking individual species and federal projects that jeopardize those species, many believe that species populations improve following a listing.[63] However, a closer look at studies, even those that herald the success of the ESA, reveals the not-so-convenient truth that the ESA is less than successful in achieving its goals. While 99% of the listed species have avoided extinction, and over 90% are recovering at the rate outlined in their recovery plans,[64] only 1% of species (20 out of 2,000) have recovered sufficiently to

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61 *See supra* note 2 and accompanying text.

62 *See infra* Part III.A.

63 *See generally* SUCKLING ET AL., *supra* note 4, at 1 (noting that most species have recovered according to their recovery plan); *see also* SARAH MATSUMOTO ET AL., EARTHJUSTICE, CITIZENS' GUIDE TO THE ENDANGERED SPECIES ACT 4-52 (2003), *available at* http://earthjustice.org/sites/default/files/library/reports/Citizens_Guide_ESA.pdf (listing a number of species, including the bald eagle and the American alligator, that have benefitted from ESA protections).

64 *The Endangered Species Act: A Wild Success*, CENTER BIOLOGICAL DIVERSITY, http://www.biologicaldiversity.org/campaigns/esa_wild_success/ (last visited Jan. 12, 2015).

warrant their "downlisting" (from endangered to threatened) or delisting;[65] some of the species in this 1% (approximately seven to eight) were originally listed in error.[66] Furthermore, the number of species listed has increased dramatically in the past 40 years, from 134 listed species in 1973 to about 2,195 at present.[67] Some of this increase in listed species is simply because it takes time to list all of the endangered and threatened species. Perhaps more troubling, is the number of species that have become endangered since the enactment of the ESA has increased in proportion to the number of species that are no longer endangered.

Part of the reason that the ESA's mechanisms have shown so little success is that "[u]nless a species qualifies for listing because population numbers have reached a crisis stage, it derives no federal legal protection from the statute."[68] In other words, the main protection provisions of the ESA, the primary tools relied on for species conservation, are reactive and do not kick in until *after* the species is at a crisis stage (i.e. endangered or threatened). While technically speaking this is not contrary to the Act's stated purpose, which is to conserve endangered or threatened species, it does run afoul of the spirit behind the ESA, which is to conserve species populations regardless of their status.[69] A more holistic approach

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65 Scheer & Moss, *supra* note 4. However, some organizations have made the case that many of the species that are meeting their recovery plan "timelines" will be delisted within 10 to 15 years. *See* SUCKLING ET AL., *supra* note 4.

66 Doremus, *supra* note 2, at 271. It should be noted that delisted or "downlisted" species are usually what ESA supporters point to when trying to make the case that the ESA is a success. These species, however, are species that have some independent significance distinct from the significance normally associated with endangered species. For example, reports outlining the success of the ESA will often point to the recovery and subsequent delisting of the bald eagle due to provisions of the ESA. *See* SUCKLING ET AL., *supra* note 4; MATSUMOTO ET AL., *supra* note 63; *The Endangered Species Act: A Wild Success*, *supra* note 64. However, even the Fish and Wildlife Service recognizes the importance of the bald eagle in the United States in its bald eagle recovery report. *Bald Eagle Recovery*, U.S. DEPARTMENT INTERIOR, http://www.fws.gov/midwest/eagle /recovery/ (last updated Mar. 18, 2013). Therefore, even within the 1% of delisted species, it is uncertain how much the ESA plays in species recovery.

67 *Endangered Species Act*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., http://www .nmfs.noaa.gov/pr/laws/esa/ (last updated Jan. 19, 2014).

68 Robert B. Keiter, *Conservation Biology and the Law: Assessing the Challenges Ahead*, 69 CHI.-KENT L. REV. 911, 915 (1994).

69 This is problematic unless the ESA was intended to conserve only rare and important species, which seems unlikely.

towards species conservation would have the effect of *proactively* protecting species populations that have yet to be listed.[70] As it stands though, agencies that administer the ESA are working from a disadvantage at the outset—especially considering that a reduced species population means less genetic diversity,[71] which in turn means a lower likelihood that a species is able to recover in a healthy and effective manner.[72] With this in mind, it is no wonder that the downlisting and delisting success rate stands at only 1%.

Not only has the ESA been unsuccessful in protecting and recovering listed species populations, it has been even more unsuccessful in protecting listed species' ecosystems. Though the ESA does have mechanisms for protecting species' ecosystems, many scholars view the protection of species' ecosystems as random.[73] The protection of species' ecosystems depends entirely upon the listing of a species and a designation of a "critical habitat."[74] This designation, however, is not determined based on the ecosystem the species depends upon, but primarily upon the geographical area the species occupies.[75] Any protection of a species' ecosystem through a critical habitat designation is completely incidental. Furthermore, like the take and consultation provisions, the critical habitat designation is retroactive and occurs after the species is listed. Therefore, when the species habitat is designated as critical, "much of the diversity supported by the habitat" may already be eliminated before it had any chance to be protected.[76] Accordingly, one of the primary purposes of

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70 *See generally infra* Part IV.

71 *See* Richard Kliman, Bob Sheehy, & Joanna Schultz, *Genetic Drift and Effective Population Size*, 1 NATURE EDUC. 3 (2008), *available at* http://www.nature.com/scitable/topicpage/genetic-drift-and-effective-population-size-772523.

72 Some species that have shown signs of recovery have done so because they have been able to breed with other genetically similar species and thus have avoided the genetic deformities that accompany inbreeding. A good example of this is the introduction of Texan cougars into Florida panther habitats, which helped the Florida panther population rebound. David Biello, *How To Restore the Florida Panther: Add a Little Texas Cougar*, SCI. AM. (Sept. 24, 2010), http://www.scientificamerican.com/article.cfm?id=florida-panther-restoration.

73 *See* Doremus, *supra* note 2, at 306 (discussing how ecosystem protection is entirely reliant upon species listing and not based on actual ecosystem protection needs); *see also* Houck, *supra* note 54, at 297 (discussing how the Department of the Interior has defined "critical habitat" in such a way as to reduce its importance, and thus the importance of species' ecosystems).

74 *See supra* Part II.B.1 (discussing the protections afforded under the critical habitat provision).

75 16 U.S.C. § 1532(5)(A)(i) (2012).

76 Doremus, *supra* note 2, at 309.

the ESA—the protection of species' ecosystems—is not being achieved in reality, even with mechanisms purportedly in place to do so.

B. Issues with and Proposed Changes to the ESA's Species-By-Species Theoretical Approach

The practical issues of species recovery and ecosystem protection almost seem to contradict the stringent protections of the ESA. If the ESA is the strongest conservation law in the world, how can it possibly be this unsuccessful? The answer is quite simple: the ESA fails to adequately take into account a species ecosystem and the biodiversity on which the species depends. Only through a more holistic approach, which considers these factors, can species adequately recover. The current way that the ESA operates "precludes effective protection of biological diversity, which should be the focus of protective policy."[77]

Indeed, the species-by-species approach of the ESA is inadequate to protect what is actually important in species conservation: ecosystem preservation[78] and biodiversity management.[79] While a species-by-species approach is perhaps sufficient to assure that individual members of the protected species are not killed or harmed,[80] it does not assure a healthy species population because a species-by-species focus does not "aim to preserve healthy ecosystems or habitats," which should be paramount in any attempt to preserve the widest variety of species.[81] In other words, whereas effective species conservation requires consideration of factors far beyond an individual species and its habitat, the ESA focuses exclusively on individual species.

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77 *Id.* at 265.

78 *See* Flevares, *supra* note 10, at 2049 ("Scientists now realize that this planet functions because of the vast array of services ecosystems provide it.").

79 *Id.* at 2041.

80 Again, this is also questionable, as many species populations fail to recover or even improve following listing. *See supra* Part III.A.

81 Brown, *supra* note 9, at 163. *See also* Flevares, *supra* note 10, at 2040 ("[W]hile [the ESA] helps protect biological diversity in areas designated as critical habitat for listed species, it fails to protect entire ecological communities."); Keiter, *supra* note 68, at 915 ("[T]he extensive protection that [the ESA] provides to a species-in-crisis can sometimes operate to the detriment of the ecosystem as a whole.").

Accordingly, any change in the implementation of the ESA must begin with a change in the species-by-species theoretical approach. A change in theoretical approach becomes even more obvious when considering the following two truisms: (1) "human activities affect whole ecological communities," not just individual species;[82] and (2) "biodiversity preservation should receive priority over other considerations" in land management in order to preserve a variety of species.[83] The theoretical approach towards species conservation should be changed to focus on ecosystem preservation and biodiversity management.

1. Protecting Ecosystems

As the ESA itself mentions in its purposes section,[84] any scheme to conserve and protect species must protect that species' ecosystem. This is not only necessary because species thrive and grow in healthy and diverse ecosystems,[85] but also because most human activity that adversely affects species is activity that affects the whole ecosystem or entire ecological communities.[86] In this respect, a species-by-species approach is inadequate.

The species-by-species approach is only adequate to protect the listed species on an individual basis, not the other species or the natural environment within the ecosystem on which the listed species population depends. Thus, the species-by-species approach creates somewhat of a paradox: though the species-by-species approach responds to adverse activity primarily by protecting individuals within a species population, protecting *just* the individual specimens may actually harm (or at least fail to help) that species by failing to take steps to preserve its ecosystem.[87]

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82 Flevares, *supra* note 10, at 2041.

83 Keiter, *supra* note 68, at 912.

84 16 U.S.C. § 1531(b) (2012).

85 *See* Brown, *supra* note 9, at 163–64 (explaining the importance of a thriving species ecosystem to the species' conservation and survival).

86 A good example of this type of activity is logging. Logging is not an activity directed at any individual species, but rather an activity "directed at" (or, rather, an activity that affects) a number of species' habitats and their ecosystem as a whole. A counter-example would be activities such as hunting and fishing; these activities are often stringently regulated, at least on the recreational level, to assure hunter and fisher activities do not harm the species populations.

87 *See* Doremus, *supra* note 2, at 304 ("It has become clear that restrictions on the taking of listed species do not by themselves ensure the survival of species or their ecosystems.").

The paradox of species-by-species approach is even more pronounced when taking into account non-listed species. There is very little in this approach to ensure that non-listed species are not adversely affected. This is a major issue because it creates the potential problem that even more threatened or endangered species will be created. Therefore, the need to change this individual approach to instead focus on ecosystem protection is two-fold. Not only will it provide a better means of protecting listed species than a species-by-species approach by protecting the "outside factors" upon which the listed species population depends,[88] it will also provide a far better means of protecting non-listed species and preventing the creation of more endangered species.

2. Preserving Biological Diversity

Another benefit of protecting ecosystems is that it provides the means to protect biological diversity.[89] The protection of biodiversity is as vital for protecting species as it is for maintaining a healthy environment for humans.[90] Each type of biodiversity (ecosystem diversity, species diversity, and genetic diversity) is hugely important for preserving healthy species populations.[91] Ecosystem diversity ensures that a wide variety of species are able to thrive, species diversity ensures that species within an ecosystem are able to thrive by interacting with one another, and genetic diversity ensures that species are able to reproduce and maintain their population in a healthy manner.[92] The species-by-species method only protects *listed* species from direct harm through the take provisions, but other factors that a species depends upon for its survival and health—like the preservation of non-listed species and land that are crucial to

88 *See discussion infra* Part III.B.2.

89 *See* Flevares, *supra* note 10, at 2050 ("Ecosystem preservation is the most effective way to conserve biological diversity."). In effect, "conserving biological diversity" means protecting other species, listed and non-listed, within the affected species' ecosystem. The problem with this species-by-species approach was discussed above. *See supra* Part III.B.1. However, technically speaking, "[b]iological diversity encompasses three different concepts: ecosystem diversity, species diversity, and genetic diversity." Doremus, *supra* note 2, at 265.

90 *See Overview*, ENDANGERED SPECIES INT'L, http://www.endangeredspeciesinternational.org/overview4.html (last visited Jan. 12, 2015) (listing the "vital benefits" that biodiversity provides us).

91 *See* Doremus, *supra* note 2, at 265.

92 *See id.*

ecosystem health, but not within its "critical habitat"—are not given adequate treatment.

A scheme that focuses on protecting a species' ecosystem would be the best way to ensure and preserve biological diversity.[93] Protecting the ecosystem of a given species ensures that the diversity the species depends upon remains intact, including any "lesser species" populations that may or may not be protected under a species-by-species scheme. Thus, protecting ecosystems and preserving biological diversity go hand-in-hand—the attainment of one leads to the attainment of the other. Indeed, one could argue that the preservation of biodiversity is the top reason to focus on protecting ecosystems in order to conserve species.[94] No matter how you look at the dynamic between these two goals, an agency shift in focus toward these two "new" theoretical approaches would provide a better means of species preservation.

By shifting the theoretical focus towards protecting ecosystems and preserving biological diversity, agencies that execute the ESA can better achieve the purposes of "provid[ing] a means whereby the ecosystems upon which endangered species and threatened species may be conserved [and] provid[ing] a program for the conservation of such [species]."[95] Moreover, a shift in theoretical focus would even go beyond that purpose, by providing a more proactive means of ensuring less species become listed in the future. However, any change in a theoretical approach would necessitate a change in how the ESA is executed—no easy task when amending the ESA is all but impossible.[96] Accordingly, any change in species conservation law must be achieved either through the provisions currently in the ESA or through provisions in other laws that address species conservation.

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93 *See* Brown, *supra* note 9, at 163 (noting that "genetic diversity flourishes in healthy ecosystems"); Doremus, *supra* note 2, at 283–85 (discussing how the best way to protect biological diversity is by protecting an ecosystem); Flevares, *supra* note 10, at 2048–52 (explaining how protection of ecosystems would help to preserve biological diversity).

94 *But see* LEE DURRELL, STATE OF THE ARK 82 (1986) (arguing for the importance of ecosystems in species preservation independent from their usefulness as protectors of biological diversity).

95 16 U.S.C. § 1531(b) (2012).

96 *See supra* note 12 and accompanying text.

III
CHANGES TO THE IMPLEMENTATION OF THE ESA IN ORDER TO MEET NEW THEORETICAL GOALS

There are three main provisions of the ESA that could be used more effectively to ensure the preservation of ecosystems and the protection of biodiversity: (1) the recovery plan provision;[97] (2) the critical habitat provisions;[98] and (3) the take provision,[99] as interpreted by *Babbitt v. Sweet Home Chapter*.[100] Moreover, the ESA's interagency cooperation provision[101] could facilitate improved cooperation between the agencies that implement the ESA and other federal agencies that regulate and manage federal lands. Through these provisions, the ESA, as it now stands, contains enough legal power to ensure adequate protection of ecosystems and biodiversity, which is important considering how difficult it would be to amend the ESA. Accordingly, a change in how agencies implement the ESA, specifically through these aforementioned provisions, should accompany the shift in theoretical approach. Even if such regulatory reform fails to fully implement the new theoretical approaches, agencies could utilize federal land management acts to achieve species conservation goals.

A. The Recovery Plan Provision

The recovery plan provision, which requires the Secretary of the Interior to "develop and implement plans ['recovery plans'] for the conservation and survival of [listed species],"[102] contains the power to "lead [listed] species away from [the] brink [of extinction]"[103] and to proactively preserve non-listed species. Currently the benefits for a listed species' ecosystem and a non-listed species population, which translate into benefits for biodiversity within an ecosystem,[104] can

97 16 U.S.C. § 1533(f) (2012).

98 This provision could be improved specifically through the utilization of "special management techniques" to maximize the utility of the critical habitat provision as it relates to these goals. 16 U.S.C. § 1532(5)(A)(i) (2012).

99 *Id.* § 1538(a)(1).

100 Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687 (1995).

101 16 U.S.C. § 1536.

102 U.S.C. § 1533.

103 Cheever, *supra* note 2, at 6.

104 *See generally supra* Part III.B.2.

only be considered under the ESA following a determination that a specific species is endangered or threatened. Thus, if the agencies charged with developing the recovery plan identify those factors as important to an individual species' recovery, the recovery plan would provide a stronger protection for biodiversity and ecosystems in a proactive way.[105] Accordingly, recovery plans provide a great mechanism for preserving ecosystems and protecting biodiversity. They "avoid the single-minded focus on discrete threats that characterizes [the schemes] under sections 7 [the consultation provision] and 9 [the take provision], and they connect back to the [ESA's] larger goal of conserving species and ecosystems."[106]

The language in the recovery plan provision is ideal for incorporating the preservation of ecosystems and the protection of biodiversity into the Act's species conservation scheme. Included within the specific language of the recovery provision are requirements that "[t]he Secretary [of the Interior], in developing . . . recovery plans . . . incorporate in each plan" both "site-specific management actions [necessary] to achieve the plan's goal [of species] conservation"[107] and "objective, measurable criteria which, when met, would result in a determination . . . that the species be removed from the list. . . . ."[108] Under these provisions, the Secretary could include ecosystem preservation as a "site-specific management action" and biodiversity protection—specifically, the protection of non-listed species—as an "objective, measurable criteria" that could aid in the recovery of a listed species. While these measures would be centered on a listed species, and thus preserve some of the flawed species-by-species approach, they would effectively conserve listed species and provide proactive protection for non-listed species.

A major problem with attempting to use the recovery plan provision to preserve ecosystems and protect biodiversity is that the provision is weak. As Frederico Cheever points out, "the recovery planning section explicitly grants USFWS [United States Fish and

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105 Accordingly, effective utilization of the recovery provision would necessitate certain determinations on a species-by-species basis, which is generally to be discouraged due to its ineffectiveness as a basis for species conservation. However, a species' recovery plan could provide a proactive mechanism for conserving other species if it specified protections for the listed species' ecosystem and for other species that contribute to biodiversity—both of which would have obvious benefits for listed and non-listed species.

106 Cheever, *supra* note 2, at 31.

107 16 U.S.C. § 1533(f)(1) (2012).

108 *Id.* § 1533.

Wildlife Service] and NMFS [National Marine Fisheries Service] the power to forgo the recovery process."[109] Perhaps even more problematic is the fact that the recovery plans do not necessarily have to be followed.[110] The recovery plan provision merely requires that the agency *develop* a recovery plan (unless, of course, the relevant agency decides to forgo the process), not *implement* a recovery plan.[111] Therefore, even if an agency were to include elements of ecosystem preservation and biodiversity protection in its recovery plans, it is not clear that such a plan would be successfully implemented without an enforcement mechanism in the statute.[112] Accordingly, though the recovery plan provision contains strong language that tends to allow ideas of ecosystem preservation and biodiversity protection, the practical effect of including these ideas within recovery provisions may not be effective.[113] Any change in a theoretical approach would have to be accompanied by a change in agency willingness to reinterpret these provisions in an effective way.

B. The Critical Habitat Provision

According to scholar Lesley Brown, "[e]cosystem or habitat protection would achieve the maximum benefit [for species conservation] at the minimum cost" because "protecting ecosystems would inadvertently protect the multitudes of species living in them."[114] With this in mind, it is easy to see the utility that the critical habitat provision could provide to those who value ecosystem preservation and biodiversity protection: the designation of a critical habitat, with any of the accompanying protections, would provide a low-cost way to protect the factors important to species conservation.

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109 Cheever, *supra* note 2, at 33 (citing 16 U.S.C. § 1533(f)(1) (1995)).

110 *See* Cheever, *supra* note 2, at 60–64 (outlining cases that have reinforced the courts' adverse attitudes toward making recovery plans enforceable).

111 *But see* 16 U.S.C. § 1533(f)(5) (stating that an agency "shall, *prior to implementation of a new or revised recovery plan*, consider all information presented during the public comment period," which suggests an implementation period) (emphasis added). However, there is no specific provision, outside of this suggestive language, that requires an agency to implement a recovery plan.

112 *See id.* § 1533(f).

113 *But see* Cheever, *supra* note 2, at 68 (arguing that provisions of a recovery plan can become enforceable "by linking them with other substantive provisions of the Endangered Species Act").

114 Brown, *supra* note 9, at 164.

A species' critical habitat includes areas that the species occupies "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."[115] Critical habitat also includes areas outside of the area that the species occupies if such an area is "essential for the conservation of the species."[116] This language unambiguously allows for the consideration of ecosystem and biodiversity, as these two factors are "essential for the conservation of the species." A theoretical shift in focus would merely entail a reevaluation of what constitutes a species' critical habitat. If agencies were to consider and acknowledge that ecosystems and biodiversity are essential to species conservation, then it follows that these factors must be considered as essential in the designation of critical habitats.

However, many of the issues with the critical habitat provision, as it is currently implemented, would remain issues if these "new" factors were considered.[117] Similar to the recovery provision, the critical habitat provision has no affirmative language to ensure that a species' critical habitat is protected from the actions of private individuals—unless the take provision can be extended to a species' critical habitat through the *Sweet Home* analysis.[118] Furthermore, despite language to the contrary in the provision, listed species often do not have their critical habitats designated, and courts do not mandate such a designation.[119] As of April 1, 2011, among the 1,372 listed species, only 604 (a mere 44%) have had their habitats designated as critical.[120] Though it was Congress' intention for almost

115 16 U.S.C. § 1532(5)(A)(i)–(ii).

116 *Id.* § 1532(5)(A)(ii).

117 *See supra* Part II.B.

118 Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687 (1995). Though it is very likely that *Sweet Home* applies to a species' critical habitat, this does not mean agencies are in any way required to enforce protections to a species' critical habitat through critical habitat provisions, as *Sweet Home* applied to a Department of Interior definition of "take," and really had little to do with the critical habitat provisions. *See supra* Part II.A.

119 *Compare* 16 U.S.C. § 1533(a)(3) (noting that the critical habitats of species shall be designated "to the maximum extent prudent and determinable"), *with* Alabama-Tombigbee Rivers Coal. v. Kempthorne, 477 F.3d 1250, 1269–71 (11th Cir. 2007) (declining to enforce any measures upon the FWS for failing to designate a listed species critical habitat). *See also* 16 U.S.C. § 1532(5)(B) ("Critical habitat *may* be established for those species now listed as threatened or endangered species . . . .") (emphasis added).

120 U.S. FISH & WILDLIFE SERV. CRITICAL HABITAT: WHAT IS IT? 2 (2011), *available at* http://www.fws.gov/endangered/esa-library/pdf/critical_habitat.pdf.

all listing determinations to be accompanied by a critical habitat designation,[121] this has not occurred. Critical habitat designations occur even less frequently than development of recovery plans, despite having more substantial authoritative backing.[122] As with the recovery provision, any change in theoretical approach to the critical habitat provision must be accompanied by an agency's willingness to reinterpret the provision. .Considering the intention of Congress[123] and the importance of critical habitats within the scheme of ESA, a renewed and strengthened focus on the critical habitat provision is hardly a novel concept, but it is an important one if a change in the ESA's theoretical approach is to truly occur.

C. The Take Provision

The take provision is probably the most powerful ESA provision that could be effectively utilized to preserve ecosystems and protect biodiversity.[124] As noted above, the Supreme Court's decision in *Sweet Home*[125] affirmed the Department of Interior's definition of "harm," which included significant habitat modification.[126] Because the ESA primarily defines a species' habitat in the critical habitat provision,[127] the *Sweet Home* decision could be read as affirming the incorporation of the critical habitat provision into the take provision. Accordingly, as is suggested above, if a species' critical habitat were defined to include areas within a species' entire ecosystem, the take provision could effectively preserve a species' ecosystem and protect biodiversity within that ecosystem.

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121 H.R. REP. NO. 95-1625, at 17 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9453, 9467 [hereinafter HEARING].

122 *See supra* Part IV.A.

123 The intent of Congress is clear from the frequency with which the term "critical habitat" appears throughout the ESA, *see, e.g.*, 16 U.S.C. §§ 1532(5), 1533(b)(2), 1536(a)(2), and from the reports and statements made by Congress when debating the ESA. *See, e.g.*, HEARING, *supra* note 122.

124 16 U.S.C. § 1538(a)(1).

125 Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687 (1995).

126 50 C.F.R. § 17.3 (2014).

127 However, in *Sweet Home*, the Court did not specify what they believed the term "habitat" meant under the Department's definition, leaving open the possibility that "habitat" could encompass more than merely a species' "critical habitat." It is unclear, though, what this may cover. It is also unclear from the decision whether or not the "habitats" at issue were in fact "critical habitats."

However, there are limitations to how far the take provision can be applied. The Department of Interior regulation defining harm states that harm "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."[128] Since this is the definition that *Sweet Home* approved, it is unclear if the protection of a species habitat may go so far as to protect against actions that do not actually injure or kill a listed species. The fact that activity "significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering"[129] constitutes harm seems to imply that the regulation covers indirect activity that leads to species death or injury. However, *Sweet Home* only goes so far as to approve the regulation without really elaborating completely on what the court believes the regulation means.[130]

Furthermore, a major theoretical issue with utilizing the take provision in such a manner is that it still preserves the problem of the ESA as a species-by-species mechanism of conservation. Any protections for ecosystems and biodiversity under this scheme would be subject to a given species being listed as endangered or threatened under the listing requirement.[131] These "additional" protections would be completely incidental and, therefore, subject to the listed species remaining listed.[132] Accordingly, even with a change in theoretical focus from the individual species to a species' ecosystem and biodiversity concerns, the species-by-species protection scheme under the ESA would remain. Because the take provision is the main provision that would be able to implement the preceding reforms in an effective manner, this is a major issue.

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128 50 C.F.R. § 17.3(3) (2014) (emphasis added).

129 *Id.*

130 However, the Court in *Sweet Home* does note that the term "harm" covers "indirect" activity. 515 U.S. at 697–98. This may point toward an expansive view of what the regulation means by the term "significant habitat modification." "Harm" may cover *any* significant habitat modification that would lead to a species' death or injury, whether or not it directly harms the species.

131 16 U.S.C. § 1533(a)(1) (2012).

132 One alternative possibility is that delisting a species within a given ecosystem may not lead to the elimination of protections because other species within that ecosystem may be listed. Accordingly, delisting a species may have very little effect on the protection of that species. However, the problem still remains if each of the listed species was simultaneously or even gradually delisted.

D. The Consultation Requirement and Federal Land Management

Finally, the consultation requirement[133] may also be used as a tool to protect ecosystems and preserve biodiversity. The consultation provision requires federal agencies to consult with the Department of the Interior if an agency's action will jeopardize a listed species.[134] Additionally, unlike the language contained in the take provision, the consultation provision squarely allows for protection of a species' critical habitat, specifying that federal agencies "shall consult" with the Department of the Interior to ensure that a project is not likely to "result in the destruction or adverse modification of [listed species critical habitat]. . . . "[135] These consultation requirements were strengthened by the Supreme Court's holding in *TVA v. Hill*,[136] which ensures that an agency will be enjoined from going forward with an action if that action jeopardizes a listed species or would result in critical habitat destruction.[137]

Under the current scheme, federal agencies are required to initiate a conference with the Department whenever they believe an action is "*likely* to jeopardize [a listed] species or result in the destruction or adverse modification of proposed critical habitat . . . ."[138] Therefore, the onus is on the other federal agencies, not the Department of the Interior, to initiate the consultation process only when jeopardization is likely—a malleable standard that potentially allows an agency to dodge this process. However, the Department, through its regulations, defines what the term "jeopardize" means; this definition effectively serves as a trigger for the other agencies to consider when determining whether there is need to consult with the Department of the Interior.[139] Theoretically, the Department could change the trigger, through a policy statement or other means, to make clear that a species' ecosystem and biodiversity should be taken into account

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133 16 U.S.C. § 1536(a).

134 *Id.* § 1536(a)(2).

135 *Id.*

136 Tenn. Valley Auth. v. Hill, 437 U.S. 153 (1978).

137 *See generally id.*

138 50 C.F.R. § 402.10(c) (2014) (emphasis added).

139 *See id.* § 402.02 ("Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.").

when making a consultation determination. In other words, the Department could in effect require consultation whenever a project is likely to harm a species' ecosystem or biodiversity, as this kind of harm would most certainly jeopardize a listed species and result in the destruction or adverse modification of a listed species' critical habitat. If the Department were to then find that the agency action did indeed jeopardize a listed species or its critical habitat based on those factors, the agency action could be enjoined. Ultimately, then, agency actions could be enjoined due to potential harm to a species' ecosystem or the biodiversity on which it depends.

The consultation requirement could be made particularly powerful for these purposes in conjunction with the development of federal land management plans. Under the Federal Land Policy and Management Act (FLPMA),[140] the Secretary of the Interior is required to "develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of the public lands."[141] The development of a land-use plan is an "action," as contemplated by the consultation provision, therefore consultation with the Department of Interior (in this scenario, it would be consultation via intra-department review) is required each time a land-use plan is developed if it is likely to jeopardize a species.[142] Accordingly, any land-use plan could be required to consider ecosystem and biodiversity concerns of listed species. A land-use management plan would then provide a powerful means for the ESA to proactively protect the biodiversity of listed species and their ecosystems in federal lands.

Though the consultation requirement is a powerful provision, an obvious limitation, as noted above, is that it applies only to the federal government and not to private citizens.[143] At most, it will apply to

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140 43 U.S.C. §§ 1701–1787 (2012).

141 43 U.S.C. § 1712(a).

142 Because anywhere from 23% to 25% of endangered and "imperiled" species are located on federal lands, it is highly likely most federal land plans affect listed species. Bruce A. Stein, Cameron Scott & Nancy Benton, *Federal Lands and Endangered Species: The Role of Military and Other Federal Lands in Sustaining Biodiversity*, 58 BIOSCIENCE 339, 343 (Apr. 2008), *available at* http://www.nwf.org/~/media/PDFs/Global-Warming/Reports/steinBioscience.pdf. Accordingly, it would be appropriate to find that any land plan is "likely to jeopardize" endangered species, unless the land plan is completely innocuous.

143 *See supra* Part II.B.2. However, the consultation requirement certainly *affects* private citizens, as federal lands are often used for mining, timbering, and grazing, and federal projects are often, at least partially, privately funded.

public lands and public projects that may interfere with an ecosystem or the biodiversity necessary for a listed species, but not to individual private actions. Thus, while the protections may prove stronger than the protections of, for example, the take provision, these protections apply to a narrower set of actors. Furthermore, like the take provision, protections are only available following the listing of species.[144] Accordingly, even a theoretical change in the approach to the consultation requirement would still keep the defects of the species-by-species scheme that dominate the ESA; protection for listed species, to a certain extent, would remain retroactive, despite any new proactive protections for other species.

The preceding recommendations for reform generally share two problems: they each require a good deal of agency willingness to change, and they each, to some extent, tie conservation efforts to individual species, leaving protections to be doled out on a species-by-species basis. This limitation on meaningful reform is due in large part to the structure of the ESA—protections in that law are subject to a species being listed. If the ESA is to be reformed without congressional amendment, perhaps the species-by-species foundation must be accepted. Alternatively, species conservation reform could be achieved by looking "outside" of the ESA altogether.

E. Looking Outside the ESA—Federal Lands Management as a Tool for Species Conservation

Congress has passed a number of laws to ensure the conservation of specific federal lands—by implication these laws can be used for species conservation as well.[145] One of these laws is the Wilderness Act of 1964,[146] which allows for the designation of "wilderness areas," or "area[s] where the earth and its community of life are untrammeled by man," to be governed by a number of provisions that

144 *See* 16 U.S.C. § 1536(a)(2) (2012).

145 Jamison E. Colburn, *The Indignity of Federal Wildlife Habitat Law*, 57 ALA. L. REV. 417, 454 (2005). Though they will not be discussed in this Note, other federal lands laws that could be utilized for species conservation are FLPMA, *see* 43 U.S.C. §§ 1701–1787 (2012) (which, independent of the ESA and the consultation requirement, could be utilized to develop land management plans that promoted species conservation), and the National Forest Management Act, 16 U.S.C. §§ 1604–1687 (which could be utilized to develop forest management plans that promote species conservation).

146 16 U.S.C. §§ 1131–1136 (2012).

essentially ensure the complete preservation of the area.[147] Once an area is designated as a "wilderness area," agencies are enjoined from taking action that would normally be permitted under a public lands management scheme, such as allowing logging on the land.[148]

The Wilderness Act is not without challenges. The definition of "wilderness" is vague, and therefore open to manipulation, and the Act does not explicitly protect habitats of species.[149] Perhaps more troubling is that Congress must designate a wilderness area, meaning the Act may have the same potential political roadblocks as the ESA.[150] This political issue may effectively prevent the Wilderness Act from achieving meaningful species conservation. However, the power of the Act is certainly promising, as wilderness areas are effective tools for preserving ecosystems and biodiversity.

Another federal land conservation act that tends to achieve species conservation goals is the National Wildlife Refuge System (NWRS).[151] Unlike the Wilderness Act, the NWRS is designed to conserve habitats and place conservation above all else, once an area is designated as a wildlife refuge.[152] However, unlike the Wilderness Act, individuals are not necessarily enjoined from taking any action within a refuge—tourism is allowed as well as other activities[153]—perhaps making it a less effective mechanism for ecosystem protection than the Wilderness Act. Furthermore, the NWRS has been less than effective at preserving a wide range of species ecosystems, since most wildlife refuges are located in Alaska and focus mainly on preservation of waterfowl, other migratory birds, and game species.[154] Indeed, like the ESA, the NWRS primarily designates wildlife refuges for specific species, meaning that any protections for ecosystems and

147 *Id.*

148 *Id.* § 1131(a).

149 Colburn, *supra* note 146, at 457–60.

150 16 U.S.C. § 1131(a). Upon leaving office, President Clinton tried to circumvent this "roadblock" by enacting the Roadless Rule, which would have barred construction of new roads on over 50 million acres of national forest land. However, before it could be implemented, the new Bush Administration issued a reversal of policy. Heater S. Fredriksen, *The Roadless Rule That Never Was: Why Roadless Areas Should Be Protected through National Forest Planning Instead of Agency Rulemaking*, 77 U. COLO. L. REV. 457, 457 (2006).

151 16 U.S.C. § 668dd.

152 *Id.* § 668dd(c).

153 *Id.*

154 Bradley C. Karkkainen, *Biodiversity and Land*, 83 CORNELL L. REV. 1, 32–34 (1997).

biodiversity are incidental.[155] However, despite these issues, the NWRS may be an effective tool for species conservation with proper management.

Ultimately, as illustrated with the ESA, proper species conservation goals under federal land management acts can only be achieved if theoretical changes are accompanied by regulatory changes. While each of these acts have issues with achieving species conservation, resulting from either the designation process or the restrictions on the actual land management, it is within an agency's delegated authority to remedy conservation issues by reinterpreting the statute. Thus, once an agency accepts the proposed theoretical approach, the only hurdle to proper species management is institutional unwillingness to change how the agencies execute the federal laws.

CONCLUSION

Among legal scholars and conservationists, the need to reform our legal approach to species conservation is nearly at a consensus.[156] Despite the limited successes of the ESA, and despite the fact that it is considered perhaps the most stringent conservation law in the world, the ESA is not designed to consider the factors that are crucial for all species populations—healthy ecosystems and the presence of biodiversity within that ecosystem. Many legal scholars and conservationists who wish to reform the legal approach to species conservation recognize that any change needs to focus on preserving ecosystems and protecting biodiversity. However, the approach toward accomplishing these alternative goals of species conservation that many reformists take is to introduce new schemes, via amendment or replacement laws, which would perform better than the current provisions of the ESA.[157] This approach ignores the political

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155 *See* 16 U.S.C. § 668dd(a)(1) ([Refuges are to be] areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas.").

156 *See, e.g.*, Colburn, *supra* note 146, at 421–23 (describing a "species loss pandemic" occurring under the "protection" of the ESA); Doremus, *supra* note 2, at 265 (declaring that the ESA is not properly designed to conserve species effectively). *But see supra* note 64 and accompanying text.

157 *See, e.g.*, Nancy Kubasek, *Amending the Endangered Species Act As If The Native American Land Ethic Mattered*, 14 FORDHAM ENVTL. L.J. 241 (2003).

reality that amending the ESA to improve species conservation is unlikely and could result in repealing important provisions of the law.[158] Instead, any approach toward reform of species conservation laws should focus on changing how agencies implement the ESA and perhaps also focus on looking outside the ESA to find new legal methods of species conservation. Such an approach, though it has its own limitations, can allow for an effective method of species conservation that takes into account factors that we now know are important for species conservation.[159]

The main barrier to achieving reform through this approach is potential institutional resistance. Agencies implementing the ESA, and other laws that hold promise for species conservation, cannot continue to implement the law in the ways they have done in the past. Agencies must be willing to couple the proper theoretical approach towards species conservation with actions that reflect a willingness to adhere to this approach. The provisions of the ESA, as well as a variety of land management laws, allow for the consideration of ecosystem and biodiversity concerns, two factors crucial to broad species conservation. Though agencies are likely to stick with the structure of the ESA, which focuses on species-by-species implementation of protections, they are not required to focus on these individual species when enacting protections that can be broad and far-reaching. In short, it is ultimately up to the agencies, and not Congress, to implement the changes necessary for effective species conservation.

158 *See supra* note 12 and accompanying text.

159 *See supra* Part IV.