

C O M M E N T

Recovering Endangered Species in Difficult Times: Can the ESA Go Beyond Mere Salvage?

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We should judge every scrap of biodiversity as priceless while we learn to use it and come to understand what it means to humanity. We should not knowingly allow any species or race to go extinct. And let us go beyond mere salvage to begin the restoration of natural environments, in order to enlarge wild populations and stanch the hemorrhaging of biological wealth. There can be no purpose more enspiriting than to begin the age of restoration, reweaving the wondrous diversity of life that still surrounds us.

—Edward O. Wilson, *The Diversity of Life* 351 (1992)

Biodiversity protection is at a crossroads. For nearly 40 years, the Endangered Species Act (ESA)¹ has been the cornerstone of efforts to prevent the loss of imperiled wildlife and plants in the United States and around the world. But the ESA faces unprecedented challenges. Economic development and population growth continue to stress the earth's ecosystems. Now, climate change is having dramatic and often unexpected impacts on species survival, affecting migration, reproduction, foraging, and habitat.

At the same time, the nation faces extraordinary fiscal challenges, a historic recession, the constant specter of war and terrorism, and extreme political polarization and gridlock. Federal wildlife agencies have neither the resources nor the political support to address all critical species needs. Indeed, protecting the nation's biodiversity heritage scarcely even ranks as a national priority. The ESA was last reauthorized in 1988 under the Administration of George H.W. Bush. Since then, it has faced a myriad of attacks in the U.S. Congress and the popular press. Although most attempts to undermine the Act failed, a bipartisan Congress, with support from the Obama Administration, this year approved a precedent-setting

appropriations rider that delisted the northern Rockies population of the gray wolf.² The nation's commitment to biodiversity protection is in question.

Although tomes could be written about these trends and the delisting of the gray wolf in particular, the purpose of this Comment is to explore current issues related to endangered species recovery. Congressional delisting of the gray wolf short-circuited an important debate about what it means to recover a species. When should the protections of the ESA be removed? What do we even mean by recovery? Is it enough merely to prevent extinction? Might some species require federal protection forever?

Federal wildlife agencies are already protecting nearly 1,400 domestic species. Listing petitions are currently pending for more than 1,000 additional species. Under the ESA, the U.S. Fish and Wildlife Service (FWS or Service) and the National Marine Fisheries Service must evaluate the biological status of each one, determine if listing is warranted, develop recovery plans, and, for many, designate critical habitat. Are we simply asking too much of the ESA and federal wildlife agencies? Is the ESA itself sufficient to address the enormous task that lies ahead?

I. The Remarkable ESA

The U.S. Supreme Court has called the ESA “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation”³ and “one of the strongest and most controversial environmental laws in the United States.”⁴ Indeed, the ESA's conservation mandate is incredibly ambitious. The Act's purpose is “to provide a means whereby the ecosystems upon which endangered

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1. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

2. Reissuance of Final Rule to Identify the Northern Rocky Mountain Population of Gray Wolf as a Distinct Population Segment and to Revise the List of Endangered and Threatened Wildlife, 76 Fed. Reg. 25590 (May 11, 2011).
3. Babbitt v. Sweet Home Chapter of Communities for a Great Or., 515 U.S. 687, 698, 25 ELR 21194 (1995) (quoting Tennessee Valley Auth. v. Hill, 437 U.S. 153, 180, 8 ELR 20513 (1978)).
4. David S. Wilcove et al., *What Exactly Is an Endangered Species? An Analysis of the U.S. Endangered Species List*, CONSERVATION BIOLOGY (Mar. 1993), at 88.

species and threatened species depend may be conserved” and “to provide a program for the conservation of such endangered and threatened species.”⁵ To “conserve” such species means “bring[ing] any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary,” i.e., to recover and ultimately remove them from the federal endangered species list.⁶ All federal agencies are commanded to “utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of [listed] species.”⁷ As the Supreme Court observed, “[t]he plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.”⁸

The protections of the ESA were instrumental in saving hundreds of species from extinction or extirpation, including the grizzly bear, the gray wolf, the black-footed ferret, and many other species. Our nation’s symbol, the bald eagle, was removed from the endangered species list in 2007 after its numbers in the continental United States rebounded to 10,000 breeding pairs. Only 10 out of nearly 2,000 imperiled plants and animals protected under the Act have gone extinct in its history—a success rate of more than 99%.⁹ A recent study of ESA-listed species in New England found that none had gone extinct, and 93% were stable or improving since being listed.¹⁰ A peer-reviewed analysis in 2005 concluded that more than 50% of U.S. species listed before 2000 and almost two-thirds of species listed for 13 or more years have stabilized or are increasing.¹¹ Not surprisingly, species whose recovery efforts received significant funding are more likely to be improving.¹²

That the ESA has been successful in preventing extinction is no small achievement, but given the Act’s focus on recovery, for many, true success is measured by the number of species recovered and removed from the protections of the list. Indeed, since inception, only 22 species have been successfully delisted due to recovery.¹³ Recent attempts to downlist or remove gray wolves, grizzly bears, the Preble’s meadow jumping mouse, and the Virginia northern flying squirrel from the list in all or portions of their range were overturned by federal courts.¹⁴ Although

recovery is the ultimate goal of species conservation, criticisms that the ESA is not recovering species must be tempered with reality.

When the ESA was last reauthorized and amended in 1988, there were roughly 500 species on the endangered and threatened species list. By 1994, the list had grown to 909.¹⁵ It reached 1,155 by 1998.¹⁶ At this writing, the total number of listed species in the United States stands at 1,382.¹⁷ Over the next few years, the number of listed species may climb dramatically. On September 9, 2011, a federal judge approved a landmark settlement between the FWS and some environmental groups that require the agency to determine whether to list an additional 757 species, including more than 250 on the federal candidate list, by 2016.¹⁸ On September 26, 2011, the Service announced it had made positive 90-day findings, suggesting listing may be warranted, for another 374 southeastern species.¹⁹ Status reviews for many of these species, as well as any new listing proposals that may follow, will not even begin until after the Service has cleared the backlog of candidate and other species it has agreed to address. All told, another 1,000 species or more could be added to the list by 2020.

Recovering all of these species is an enormous challenge for conservation and the ESA, all the more so because of the degree to which many of these species will have declined prior to listing. The act of listing a species under the ESA is often analogized to bringing a patient into an emergency room. Unlike in a real emergency room, however, none of these species can be easily patched up and sent on their way. Every single one is a serious trauma case brought, too late, to a crowded waiting room that is chronically understaffed and lacks basic resources to stabilize the patient.

Take these striking examples. According to a 1993 study, 39 domestic plant species waited for protection until just 10 or fewer individuals were known to exist.²⁰ One freshwater mussel, *Quadrula fragosa*, was listed with

5. 16 U.S.C. §1531(b).

6. *Id.* §1532(3).

7. *Id.* §1536(a)(1).

8. *Tennessee Valley Auth.*, 437 U.S. at 184.

9. U.S. FWS, Delisting Report, http://ecos.fws.gov/tess_public/DelistingReport.do.

10. KIERAN F. SUCKLING, MEASURING THE SUCCESS OF THE ENDANGERED SPECIES ACT, RECOVERY TRENDS IN THE NORTHEASTERN UNITED STATES (2006), available at <http://www.esasuccess.org/reports/northeast/default.html>.

11. See generally Timothy D. Male & Michael J. Bean, *Measuring Progress in U.S. Endangered Species Conservation*, 8 ECOLOGY LETTERS 986 (2005).

12. *Id.*

13. U.S. FWS, *supra* note 9.

14. *Gray wolves*: *Defenders of Wildlife v. Salazar*, 729 F. Supp. 2d 1207, 40 ELR 20219 (D. Mont. 2010) (Northern Rocky Mountain distinct population segment (DPS) without Wyoming); *Defenders of Wildlife v. Hall*, 565 F. Supp. 2d 1160 (D. Mont. 2008) (Northern Rocky Mountain DPS); *Humane Society of the U.S. v. Kempthorne*, 579 F. Supp. 2d 7, 38 ELR 20259 (D.D.C. 2008) (Western Great Lakes DPS). *Grizzly Bear*: *Greater Yellowstone Coal. Inc. v. Servheen*, 672 F. Supp. 2d 1105, 39 ELR 20214 (D.

Mont. 2009) (Greater Yellowstone DPS); *Greater Yellowstone Coal., Inc. v. Servheen*, Nos. 09-36100 et al., 41 ELR 20347 (9th Cir. Nov. 22, 2011). *Preble’s meadow jumping mouse*: *Center for Native Ecosystems v. Salazar*, 711 F. Supp. 2d 1267 (D. Colo. 2010). *Virginia northern flying squirrel*: *Friends of Blackwater v. Salazar*, 772 F. Supp. 2d 232, 41 ELR 20127 (D.D.C. 2011).

15. U.S. FWS, REPORT TO CONGRESS: ENDANGERED AND THREATENED SPECIES RECOVERY PROGRAM (1995), available at http://www.fws.gov/endangered/esa-library/pdf/1994_USFWS_Recovery_Reports.pdf.

16. U.S. FWS, RECOVERY REPORT TO CONGRESS, FISCAL YEARS 1997-1998 AND 1999-2000 (2003), available at http://www.fws.gov/filedownloads/ftp_DJ-Case/endangered/pdfs/Recovery/97-2000_full_Report.pdf.

17. U.S. FWS, *Species Reports*, http://ecos.fws.gov/tess_public/pub/Boxscore.do.

18. U.S. FWS, *Improving ESA Implementation: Listing Workplan*, http://www.fws.gov/endangered/improving_ESA/listing_workplan.html.

19. News Release, U.S. FWS, U.S. Fish and Wildlife Service Finds 374 Aquatic-Dependent Species May Warrant Endangered Species Act Protection (Sept. 26, 2011), http://us.focuspr.com/Newsroom/Query.aspx?SiteName=fws&Entity=PRAsset&SF_PRAsset_PRAssetID_EQ=128444&XSL=PressRelease&Cache=True (“The review will encompass 13 amphibians, six amphipods, 17 beetles, three birds, four butterflies, six caddisflies, 81 crayfish, 14 dragonflies, 43 fish, one springfly, two isopods, four mammals, one moth, 35 mussels, six non-vascular plants, 12 reptiles, 43 snails, eight stoneflies, and 75 vascular plants.”).

20. Wilcove et al., *supra* note 4, at 92.

a single non-reproducing population remaining.²¹ Species on the candidate list have been found “warranted” for listing but “precluded” by insufficient funding and higher listing priorities. In other words, the Service believes these species to be threatened or endangered but claims to lack the resources to list them, designate critical habitat, and develop a recovery plan for these species. On average, the species on the federal candidate list have been waiting for protection for 17 years. Many have been on the list for over 25 years.²² Some have actually gone extinct waiting for protection.²³ It’s simple: the longer a species waits for protection, the harder and more expensive it will be to recover.

Even after listing, recovery is a long-term process that can take decades to accomplish. In their review of the impact of the ESA in the Northeast, Greenwald and Suckling found that federal recovery plans require an average of 42 years to achieve recovery.²⁴ On average, however, northeastern species have only been protected by the ESA for 24 years.²⁵ The recovery plans in that region predicted 11 species to recover by 2005, but the actual record showed that nine had been downlisted from “endangered” to “threatened” status, delisted, proposed for delisting, or were under consideration for delisting in whole or in part in 2005.²⁶ Given enough time and attention, many species can be brought back from the brink.

In his seminal book *Saving Nature’s Legacy*, Reed Noss makes a critical point about another limitation of the ESA. The emergency-room approach, and the time it takes to stabilize individual populations, may result in insufficient focus on prevention, leading to ever-more imperiled species:

Endangered species programs, although critical as a safety net to catch imperiled species where other actions fail, are obviously reactive rather than proactive. They make no attempt to identify potentially vulnerable species before they begin the slide toward extinction. They usually fail to recognize opportunities for protecting suites of species, such as those associated with an endangered ecosystem type, in a cost-effective way. They pay no attention to levels of organization beyond species. Although the first stated purpose of the [ESA] is “to protect the ecosystems upon which endangered species and threatened species depend,” the agencies have never taken this ecosystem

protection mandate seriously, and Congress has never told them how they might do so.²⁷

Habitat protection on both public and private lands is, of course, essential to any strategy to conserve America’s biodiversity.²⁸ The ESA, however, is but one factor in the preservation of wildlife habitat and does little to prevent the decline of habitat for non-listed species. Recovery of listed species, and prevention of new listings, thus depends heavily on state, local, and private actions, which may be beyond the reach of the ESA. As Steven Yaffee has written: “If biodiversity protection is confined to the ESA, the best-case outcome will be maintenance of an ‘emergency room’ strategy.”²⁹ The record shows the ESA is actually an incredibly successful trauma center in terms of stabilizing and arresting the decline of listed species. But full recovery is another matter entirely.

II. The Elusive Concept of Recovery

The ESA defines an endangered species as one that is “at risk of extinction throughout all or a significant portion of its range.”³⁰ A threatened species is one that is likely to become endangered “within the foreseeable future.”³¹ Scientists frequently speak of recovery as a function of abundance relative to extinction risk.³² The ESA, however, also requires that the species’ distribution over some portion of its range be taken into account. “The ESA’s concept of endangerment is broader than the biological concept of extinction risk in that the ‘esthetic, ecological, educational, historical, recreational, and scientific’ values provided by species are not necessarily furthered by a species’ mere existence, but rather by a species’ presence across much of its former range.”³³ Deciding when a species is recovered thus requires, at a minimum, a determination of both an appropriate population size and geographic range to ensure persistence of the population over time. What time-horizon to use is yet another policy question that must be resolved.

In theory, the FWS uses the “three-R” framework—representation, resiliency, and redundancy—to assess the significant portion of a species’ range for listing and recovery purposes.³⁴ This framework “parallels the ESA in that it links the concepts of geography and viability by combining protection of representative examples of ecosystem types or

21. *Id.*

22. D. NOAH GREENWALD & KIERAN F. SUCKLING, PROGRESS OR EXTINCTION? A SYSTEMATIC REVIEW OF THE U.S. FISH AND WILDLIFE SERVICE’S ENDANGERED SPECIES ACT LISTING PROGRAM 1974-2004, at 3 (2005), available at <http://www.biologicaldiversity.org/publications/papers/esareport-revised.pdf> (“78 percent of the [then 286] species (224) have been on the [candidate] list for 10 or more years, 26 percent (73) have been on the list for 25 or more years”).

23. *Id.* at 1 (“Listing delays contributed to the extinction of 42 species including the Amak Island song sparrow, Virgin Islands screech owl, Texas Henslow sparrow, Breckenridge Mountain salamander and Valdina Farms salamander.”).

24. SUCKLING, *supra* note 10, at 2.

25. *Id.* at 6.

26. *Id.* at 1.

27. REED F. NOSS & ALLEN Y. COOPERRIDER, *SAVING NATURE’S LEGACY: PROTECTING AND RESTORING BIODIVERSITY* 26 (1994).

28. See generally *id.*; PRIVATE PROPERTY AND THE ENDANGERED SPECIES ACT, *SAVING HABITATS, PROTECTING HOMES* (Jason F. Shogren ed., 1998).

29. Steven L. Yaffee, *Collaborative Decision Making, in THE ENDANGERED SPECIES ACT AT THIRTY: RENEWING THE CONSERVATION PROMISE* 208, 212 (Dale D. Goble et al. eds., 2006).

30. 16 U.S.C. §1532(6).

31. 16 U.S.C. §1532(20).

32. See, e.g., J. Michael Scott et al., *Recovery of Imperiled Species Under the Endangered Species Act: The Need for a New Approach*, 7 FRONTIERS ECOLOGY & ENV’T 383-89 (2005).

33. Carlos Carroll et al., *Geography and Recovery Under the U.S. Endangered Species Act*, 24 CONSERVATION BIOLOGY 395-403 (2010).

34. Mark L. Shaffer & Bruce A. Stein, *Safeguarding Our Precious Heritage, in PRECIOUS HERITAGE: THE STATUS OF BIODIVERSITY IN THE UNITED STATES* 301-22 (B.A. Stein et al. eds., 2000).

species populations with two additional factors typically associated with population viability.³⁵

In practice, however, the FWS has been rather inconsistent in setting standards for recovery plans. Population targets are often poorly defined or are set below the level necessary to sustain the species. A 1995 study found that more than 25% of recovery plans for listed species set recovery objectives at or below the species' existing population size or number of populations.³⁶ Indeed, the Service's use of the three Rs to analyze significant portion of the range (SPOR) can vary, sometimes incomprehensibly, from species to species.

At times, it has used the framework to differentiate between core and peripheral populations. For example, the Service found that a portion of the range for the Preble's meadow jumping mouse could be significant if it "contributes substantially to the representation, resiliency or redundancy of the species . . . at a level such that its loss would result in a decrease in the ability to conserve the species."³⁷ In the case of the Preble's mouse, the Service delisted the mouse in Wyoming, while keeping it on the list in Colorado. The Service relied on a 2007 Solicitor's Opinion that interpreted SPOR to allow listings only in the areas deemed significant, as opposed to throughout its range.³⁸ Previously, however, the Service used the three-R framework to help determine what the SPOR was, and if the species was found to be threatened or endangered in that area, it would be listed or delisted throughout its range. After environmental groups challenged the Preble's delisting in court, the U.S. Department of the Interior withdrew the Solicitor's Opinion and restored protections in Wyoming.³⁹

The Service also appears to lack standards for determining how much of a species' historic range should be occupied for recovery under the ESA. For example, the recovery plan for the bald eagle called for restoration throughout its historic range.⁴⁰ By contrast, the Service's target for the grizzly bear in the lower 48 states would declare the species recovered, while still absent from more than 95% of its pre-Columbian range.⁴¹ The recovery plan for gray wolves in the northern Rockies called for the establishment of just 10 breeding pairs each in Idaho, Montana, and Wyoming, for a total of 300 wolves, provided that some genetic connectivity to a broader Canadian population was established.⁴² Given that conservation biologists now believe long-term

sustainability of mammalian species requires a metapopulation of 2,000 to 5,000 individuals over a range broad enough to allow for differentiation,⁴³ it is clear that there is much room for debate over when a species is biologically no longer at risk of extinction and what level of risk is acceptable under the ESA. And this still does not fully take into account ecosystem function or the other values the ESA arguably seeks to protect across a species' range.⁴⁴

A provocative paper by some of the most respected names in ESA policy recently concluded that for many endangered species, "recovery in the sense of full self-sufficiency is an unattainable goal."⁴⁵ Rather than viewing the path from listing to recovery linearly, J. Michael Scott et al. urge a broader conception of recovery as "a continuum of varying levels of human intervention or management."⁴⁶ For example, a species may exist only in captivity (Guam Micronesian kingfisher), or can be sustained in the wild only with continual release of captive-bred specimens (California condor). Others may require continuous or periodic intervention to restore desired ecological conditions (wild salmon and Kirtland's warbler). At the most independent end of the continuum are those whose populations can be maintained through state and private management (American alligator, brown pelican) or which are fully adapted to anthropogenic environments (peregrine falcon). The authors believe that as many as 84% of listed species "will require continuous management action in order to maintain their recovered status."⁴⁷ They call these species "conservation-reliant" species—or species "that can maintain a self-sustaining population in the wild only if ongoing management actions of proven effectiveness are implemented."⁴⁸

If a species requires continual intervention but its habitat is protected and it is reasonably certain that necessary management, e.g., prescribed burns, will occur, should such a species be deemed "recovered"? Should recovery instead be reserved for those species that can clearly survive in the wild without human intervention? What degree of certainty (risk tolerance) is required? Should some species, with stable populations that fall short of recovery targets, remain on the federal endangered species list in perpetuity?

Kent Redford et al. take a similar approach, but their recovery continuum provides a finer tuned scale for assessing when a species has been successfully conserved. In their view, the essential attributes of a "successfully conserved species" are that it: (a) be self-sustaining demographically and ecologically; (b) be genetically robust; (c) have healthy populations; (d) have representative populations distributed across the historical range in ecologically representative settings; (e) have replicate populations within each ecological

35. Carroll et al., *supra* note 33, at 399.

36. Timothy H. Tear et al., *Recovery Plans and the Endangered Species Act: Are Criticisms Supported by Data?*, 9 CONSERVATION BIOLOGY 182-95 (1995).

37. Final Rule to Amend the Listing for the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) to Specify Over What Portion of Its Range the Subspecies Is Threatened, 73 Fed. Reg. 39790 (July 10, 2008).

38. For an excellent discussion of the Solicitor's Opinion and the concept of SPOR, see Sherry A. Enzler & Jeremy T. Bruskotter, *Contested Definitions of Endangered Species: The Controversy Regarding How to Interpret the Phrase "Significant Portion of a Species Range"*, 27 VA. ENVTL. L.J. 1 (2009).

39. Reinstatement of Listing Protections for the Preble's Meadow Jumping Mouse, 76 Fed. Reg. 47490 (Aug. 5, 2011).

40. Scott et al., *supra* note 32.

41. *Id.*

42. U.S. FWS, Northern Rocky Mountain Wolf Recovery Plan (1987), available at <http://www.fws.gov/mountain-prairie/species/mammals/wolf/>.

43. See, e.g., Carroll et al., *supra* note 33, at 400.

44. Congress explicitly found that "these species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." 16 U.S.C. §1531(a)(3).

45. Scott et al., *supra* note 32, at 383.

46. *Id.* at 385.

47. J. Michael Scott et al., *Conservation Reliant Species and the Future of Conservation*, 3 CONSERVATION LETTERS 91-97 (2010).

48. Scott et al., *supra* note 32, at 386.

setting; and (f) be resilient across the range.”⁴⁹ With these attributes in mind, the authors define “successful species conservation as maintaining multiple populations across the range of the species in representative ecological settings, with replicate populations in each setting. These populations should be self-sustaining demographically and ecologically, healthy, and genetically robust—and therefore resilient to climate and other environmental changes.”⁵⁰ For Redford et al., the hope is to recover species to a level that allows them to perform their ecological functions, but like Scott et al., they acknowledge that some species may never exhibit the full range of these attributes.

Having established a definition of “success,” Redford et al. likewise propose to measure the conservation condition of a species based on the degree of human intervention required to ensure its continued survival. The five states are captive-managed, intensively managed, lightly managed, conservation-dependent, and self-sustaining. Rather than maintaining a binary, and somewhat artificial, sense of recovery, it may be helpful to consider species conservation as a continuum of management need. Indeed, climate and habitat changes are likely to require “intensive demographic, health, and genetic management” for an increasing number of species.⁵¹

Even assuming a species successfully rebounds and does not require ongoing human intervention to sustain it in the wild, the question of how and when to delist the species still remains. Under the ESA, listing and delisting decisions are supposed to be made on the basis of the best available science,⁵² but that is not the end of the story. Before a species may be delisted, the ESA requires that the same five factors that, if present, warranted listing in the first instance be now found lacking. These factors are not solely biological, but require judgment of risk and evaluations of policy:

- Is there a present or threatened destruction, modification, or curtailment of species’ habitat or range?
- Is the species subject to overutilization for commercial, recreational, scientific, or educational purposes?
- Is disease or predation a factor?
- Are there inadequate existing regulatory mechanisms in place outside the ESA (taking into account the efforts by states and other organizations to protect the species or habitat)?
- Are other natural or man-made factors affecting its continued existence?⁵³

Science informs these questions, but in most cases does not settle them. The gray wolf is a case in point. One of the thorniest problems with delisting the gray wolf is the

question of how much of the species’ former range should be occupied prior to delisting. The gray wolf was listed throughout the lower 48 states, but rebounded only in the Great Lakes and northern Rockies. In 2003, seeking increased flexibility to manage the species, the Service proposed reclassifying the wolf into two separate eastern and western distinct population segments (DPSs) and downlisting both from endangered to threatened. Environmentalists successfully challenged this action on the grounds that the Service had done little to recover wolves throughout the remainder of the range.⁵⁴ The Service responded by drawing new DPSs just around the northern Rockies and Great Lakes populations. Here, too, the effort floundered in court. In the northern Rockies, environmentalists convinced a federal court that the population did not actually meet the criteria established by the Service in the species’ recovery plan, and demonstrated that at least one of the state’s management plan for wolves was inadequate.⁵⁵ A key question in both the northern Rockies and Great Lakes cases was whether the Service can delist a species piecemeal by population or by state just in the places where it has rebounded? And what impact does the removal of protections in core areas have on recovery in the rest of the species’ listed range? These issues remain legally unsettled.

As science has evolved, the precise meaning of the ESA’s conservation standard has become less clear. After 38 years, we do not really know how to define and standardize such critical statutory terms as “significant portion of its range,” “adverse modification,” and “recovery.”⁵⁶ Recent litigation over species delisting can be seen as a manifestation of these ambiguities.⁵⁷

III. A New Recovery Agenda

The future success of endangered species conservation requires increasing the ability to save and recover the species currently listed under the ESA and the many hundreds more that are likely to join the list in the coming years. Inadequate funding for listing and recovery planning has long hindered the efforts of federal and state governments to conserve species. For more than 30 years, the FWS’ budget has not remotely increased proportionate to the number of species listed. Given present budget realities, new funding to address critical species needs and respond to new petitions is unlikely. Indeed, funding for the FWS is likely to decrease in fiscal year 2012, even as workloads increase. Federal agencies must do more with less, while

49. Kent H. Redford et al., *What Does It Mean to Successfully Conserve a (Vertebrate) Species?*, 61 (1) *BIOSCIENCE* 39–48 (Jan. 2011).

50. *Id.* at 45.

51. *Id.* at 46.

52. 16 U.S.C. §1533(b)(1)(A).

53. 16 U.S.C. §1533(a)(1).

54. *Defenders of Wildlife v. Norton*, 354 F. Supp. 2d 1156, 35 ELR 20033 (D. Or. 2005) (Western DPS); *National Wildlife Federation v. Norton*, 386 F. Supp. 2d 553 (D. Vt. 2005) (Eastern DPS).

55. *Defenders of Wildlife v. Hall*, 565 F. Supp. 2d 1160 (D. Mont. 2008).

56. By contrast, New Zealand has recently established fairly clear goals around recovery by specifying the relevant level of risk and time frame, as follows: Long-term recovery is defined as “where there is a 95% probability of species persistence within the next 50 years or three generations (whichever is longer), given that all human-induced threats likely to occur within 300 years are adequately mitigated.” New Zealand Dep’t of Conservation, *Natural Heritage Intermediate Outcomes and Objectives—Definitions for Objective 1.2* (2011).

57. See *supra* note 14.

retaining the Act's functionality and increasing public support for the ESA's goals.

To that end, federal wildlife agencies must find ways to streamline listing determinations and designation of critical habitat. Over time, institutional caution, driven in part by litigation and politics, has created a highly redundant and inefficient process. Federal wildlife agencies must also do a better job setting recovery standards and managing public expectations. Confusion over what recovery means and whether numerical attainment of recovery goals requires delisting has caused much controversy in recent years, leading to litigation and public opposition to species conservation. The scientific criteria used and the nonscientific values inherent in recovery planning must be transparent to stakeholders and the public and be more consistently applied.

Although the prospect of throwing any species off the Ark is fraught with moral and ethical issues, federal agencies may have to more explicitly and transparently prioritize conservation efforts to maximize the number of species that can be preserved with limited resources. A disproportionate amount of funding has gone to popular vertebrate species at the expense of many others. Increased focus, for example, on umbrella, keystone, or indicator species may provide ancillary benefits by helping to conserve other species and shared habitats within the same ecosystem. Alternatively, some countries, such as New Zealand and Tanzania in particular, have developed explicit prioritization schemes to evaluate the likely benefit of management actions over time.⁵⁸ This potentially enables wildlife managers to steer resources to where it will do the most good for the greatest number of species. A more transparent and explicit prioritization scheme could also bring more focus and attention to those species that will not be supported. The legislature then has a clear choice—provide more funding or consign actual, identifiable species to extinction. While the merits of such an approach in the United States can be debated, the fact is that the FWS has no systematic and transparent process for deciding how it spends recovery funds, thus hampering its ability to articulate a basis for additional resources.

Attention must also be paid to the role that habitat conservation planning, incidental take permitting, and ESA §7 consultations play in impeding species recovery. Incidental take permits issued under ESA §10 require impacts to be minimized and mitigated to the maximum extent practicable, but they inevitably result in a loss of species. Likewise, ESA §7 allows impacts to a species as long as the federal action under review is not itself likely to jeopardize the survival of the species or adversely modify its critical habitat. On the one hand, these permitting programs could be causing death by a thousand cuts. While no one project may cause jeopardy to a species, cumulatively, the impacts can be grave and are not adequately addressed. On

the other hand, these provisions are a necessary compromise to maintain political and public support for the ESA. Society must continually assess its commitment to saving threatened and endangered species when doing so may conflict with other socioeconomic objectives.⁵⁹

Finally, for more than one-half of listed species, 80% of their habitat is found on private lands.⁶⁰ Cooperative efforts with states and private landowners is therefore essential for preserving species. This is critical not just for listed species, but for relatively abundant species that are now declining. Redford et al. advise:

A focus only on species near extinction will cause conservationists to overlook a wide array of important conservation issues—just as health care practiced only at the door of the hospital emergency room will never slow the tide of patients in need of critical care. Conservationists need the equivalent of preventative health care, derived from a positive vision of a fully conserved species.⁶¹

Perhaps with this vision in hand, we can find new ways to engage the public in species conservation and address inefficiencies that create resentment to the ESA. Streamlined permitting, landowner incentives, and other programs—to the extent they do not undermine the goals of the ESA—are part of the puzzle and may be necessary to retain public support for species protection.

IV. Conclusion

In today's contentious political arena, it is hard to imagine that Congress passed the ESA in 1973 with only a handful of votes in opposition. President Richard M. Nixon's statement on signing the bill into law aptly captures the sentiment of the time:

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 scholars, scientists, and nature lovers alike, and it forms a vital part of the heritage we all share as Americans.⁶²

The framers of the ESA clearly understood that even the most insignificant species contained a potential treasure-trove of value, but one wonders if the law's authors anticipated the magnitude of the challenge that would face conservationists as the ESA's 40th birthday approaches.

59. While congressional delisting of the gray wolf was unprecedented, it was not the first time Congress stepped in to settle an ESA dispute adversely to the species. In the landmark case of *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 8 ELR 20513 (1978), the Supreme Court blocked the nearly completed Tellico dam project to protect the endangered snail darter. In September 1979, by a vote of 48-40, Congress directed that the dam be completed, and President Jimmy Carter approved the measure exempting the dam from the ESA.

60. U.S. FWS, OUR ENDANGERED SPECIES PROGRAM AND HOW IT WORKS FOR LANDOWNERS 1 (2007), available at <http://www.fws.gov/endangered/esa-library/pdf/landowners.pdf>.

61. Redford et al., *supra* note 49, at 46.

62. Richard Nixon, Statement on Signing the Endangered Species Act of 1973, Dec. 28, 1973, online by Gerhard Peters & John T. Woolley, The American Presidency Project, <http://www.presidency.ucsb.edu/ws/?pid=4090>.

58. Lianna N. Joseph et al., *Improving Methods for Allocating Resources Among Threatened Species: The Case for a New National Approach in New Zealand*, 14 PAC. CONSERVATION BIOLOGY (2008).

Alas, while public opinion polls continue to show broad support for conservation, the political consensus on endangered species protection has unraveled. To be sure, the Act has never been without controversy, but today elected officials are quick to oppose ESA protections, especially if there is any hint that conservation measures might interfere with economic development.⁶³ As the biodiversity crisis worsens and more species are added to the list, human economic aspirations may increasingly collide with wildlife conservation. Calls for “reform” of the ESA, if not outright repeal, will likely increase as well.

Perhaps, it is not the ESA that needs reform, but our expectations. Recovery of a given species may take generations of management. For others, complete recovery and delisting may be impossible. “Conservation-reliant” species may require continual active management. Others will be lost despite our best efforts. Development marches on, and habitat loss continues apace. Climate change threatens a

“no-analog” future.⁶⁴ But the greatest threat today for the nation’s biodiversity heritage is that in a time of recession, job loss, and polarized politics, the nation will abandon the noble aim embodied by the ESA. Let us recall the words of Aldo Leopold: “We shall never achieve harmony with the land, any more than we shall achieve absolute justice or liberty for people. In these higher aspirations, the important thing is not to achieve but to strive.”⁶⁵

The new challenge for conservationists will be to save more species with fewer resources in a time of inadequate public concern. Going forward, the true measure of the ESA will not be merely the number of species removed from the endangered species list, but the strength of the nation’s commitment to biodiversity protection. Absent our best efforts, the loss of America’s wildlife heritage will be, as Edward O. Wilson warned, “the folly our descendants are least likely to forgive us.”⁶⁶

63. See, e.g., Letter from Rep. Steve Pearce et al., to Rep. Howell Rogers et al., Apr. 8, 2011, available at http://www.eenews.net/assets/2011/04/21/document_pm_02.pdf (threatening to block funding for listing the lesser prairie chicken and sand dune lizard).

64. See J.B. Ruhl, *Climate Change and the Endangered Species Act: Building Bridges to the No-Analog Future*, 88 BOSTON UNIV. L. REV. 1 (2008).

65. Aldo Leopold, *The Round River*, in A SAND COUNTY ALMANAC WITH ESSAYS ON CONSERVATION FROM ROUND RIVER 188 (Oxford Univ. Press 1966).

66. EDWARD O. WILSON, BIOPHILIA 121 (1984).