The Road to Recovery: A New Way of Thinking about the Endangered Species Act

Federico Cheever
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INTRODUCTION

The struggle to preserve “biological diversity”1 is among the most significant of environmental causes. All human life depends on natu-
ral systems supported by the richness of nonhuman life.\textsuperscript{2} We are fundamentally ignorant of the functioning of most of those systems.\textsuperscript{3} This combination of dependence and ignorance forces us to conclude that we are foolhardy to drive elements of those natural systems—species of plants and animals, the genetic codes they contain, and the ecosystems of which they are part—into oblivion in order to build our prisons, dams, highways, and housing tracts.\textsuperscript{4} Indeed, we may be subject to some moral obligation to preserve these natural systems.\textsuperscript{5}

For the past twenty years, the hopes of those who seek to protect biological diversity have been hitched to the Endangered Species Act of 1973.\textsuperscript{6} Although it does not protect biological diversity as such,\textsuperscript{7} the Endangered Species Act is one of the world's most powerful species preservation laws and has proved a potent tool for stopping, or at least delaying, projects that create a significant, readily identifiable

\begin{itemize}
  \item \textsuperscript{2} E.O. Wilson informs us that the disappearance of insects and other land-dwelling arthropods would result in the extinction of humanity within a few months. See \textit{Edward O. Wilson, The Diversity of Life} 133 (1992) [hereinafter \textit{E.O. Wilson}]. Aside from aesthetic and ecological value, biological diversity has an economic value, specifically in the areas of pharmaceuticals and agriculture. A weedy-looking plant, recently discovered in Mexico, may be worth $6.82 billion annually because it is a perennial ancestor of corn. See generally id. at 281-305; Bryan Norton, \textit{Commodity, Amenity and Morality: The Limits of Quantification in Valuing Biodiversity}, in \textit{Biodiversity} 200, 202 (E.O. Wilson ed., 1988) [hereinafter \textit{Biodiversity}]. One obstacle to determining the value to us is ignorance of the function of species in the biosphere. \textit{Id.} at 203. In one sense, "[t]he value of biodiversity is the value of everything there is." \textit{Id.} at 205. "It is the summed value of all the GNPs of all countries from now until the end of the world." \textit{Id.}
  \item \textsuperscript{3} See generally \textit{E.O. Wilson, supra} note 2, at 131-63. With the help of other systematists, I recently estimated the number of known species of organisms, including all plants, animals, and microorganisms, to be 1.4 million. This figure could easily be off by a hundred thousand, so poorly defined are species in some groups of organisms and so chaotically organized is the literature on diversity in general. More to the point, evolutionary biologists are generally agreed that this estimate is less than a tenth of the number that actually live on earth. \textit{Id.} at 132-33.
  \item \textsuperscript{4} Aldo Leopold said it best: The last word in ignorance is the man who says of an animal or plant: "What good is it?" If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? \textit{Aldo Leopold, Round River, in A Sand County Almanac} 190 (1970).
  \item \textsuperscript{5} See generally \textit{Roderick F. Nash, The Rights of Nature} (1989).
  \item \textsuperscript{7} The Endangered Species Act only protects species designated as endangered or threatened. See discussion \textit{infra} section I.B.1. It does not protect relatively healthy species that are being overexploited or whose habitat is being overexploited, nor does it provide a basis for establishing a workable system for the preservation of biological diversity. For a discussion of such a system, see \textit{Noss & Cooperrider, supra} note 1, at 100-77. See also Jason M. Patlis, \textit{Biodiversity, Ecosystems and Species: Where Does The Endangered Species Act Fit In?}, 8 TUL. ENVTL. L.J. 33 (1994).
\end{itemize}
threat to biological diversity. As applied, however, the Endangered Species Act has failed proponents of biological diversity in two significant ways. The current political controversy about the Endangered Species Act\(^8\) feeds on these failures.

First, although the Endangered Species Act has made a difference, experience suggests it has been an inadequate tool for preserving biological diversity. The Endangered Species Act prevents species from disappearing entirely. To date, however, it has done relatively little to bring species back from the brink of extinction and ensure their continued survival. As of March 1995, 1,526 species of plants and animals have been designated as “endangered” or “threatened” under the Endangered Species Act.\(^9\) Since the Act’s passage in 1973, only a few species have reached the point at which they were sufficiently numerous and widespread to be “delisted”—removed from threatened or endangered status because they no longer required the protection of the Act. During the same period, the new science of conservation biology\(^10\) has shown that we can only hope to preserve species over time by maintaining or restoring viable populations of species members adequately distributed in healthy ecosystems. Maintaining a handful of species members merely delays extinction.

Second, and perhaps more significant, the Act has proved an inadequate educational tool. Rather than convincing the American people of the need to preserve biological diversity, the Act has apparently convinced many that endangered species preservation is just an-
other onerous form of federal regulation. Although much of the criticism of the Act in the press and in Congress is inspired by economic interests affected by species protection, there can be no denying that anti-endangered-species rhetoric has influenced people who have no economic interest in the destruction of biological diversity.

Why has the Endangered Species Act failed in these ways? Unlike most of our environmental laws, it is relatively brief and clear. Its functioning and purpose can be understood by nonspecialists. While Endangered Species Act regulations fill about 350 pages in the Code of Federal Regulations, the Endangered Species Act requires nothing like the regulatory superstructure associated with other environmental laws. How is it that this clearly drafted law with the high-minded purpose of the conservation of species and the ecosystems on which they depend has neither ensured the long-term survival of those species and ecosystems nor convinced the American people that these species and ecosystems are worth protecting?

In this article, I will suggest that the problem is not with the text or intent of the Endangered Species Act itself, but with the way it has been used and perceived during the last two decades. Litigants, courts, and legal scholars have emphasized the enforcement of the Act’s specific prohibitions at the expense of the Act’s larger purpose. I will argue that one legal key to creating a more politically acceptable and biologically effective Endangered Species Act lies in emphasizing the Act’s concept of "recovery."

This concept of recovery grows out of section 4(f) of the Endangered Species Act, the recovery planning section. That section im-

14. 16 U.S.C. § 1533(f) (1995) reads as follows:
(f) Recovery plans.
(1) The Secretary shall develop and implement plans (hereinafter in this subsection referred to as “recovery plans”) for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote the conservation of the species. The Secretary, in developing and implementing recovery plans, shall, to the maximum extent practicable—
poses a duty on the federal agencies primarily responsible for protecting threatened and endangered species: the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS).\footnote{16} Under the recovery planning section, USFWS and NMFS must develop and implement recovery plans—plans designed to show a path by which the numbers and habitats of endangered species may recover to the point where they no longer require the protection of the Endangered Species Act.

The recovery planning section of the Endangered Species Act is fundamentally different from the better known sections of the Act: section 7,\footnote{17} which prohibits the federal government from funding, authorizing, or carrying out any action that might jeopardize the continued existence of any endangered or threatened species, or destroying or adversely modifying designated critical habitat, and section 9,\footnote{18} which prohibits any person from “taking” any member of any endangered species of wildlife. Sections 7 and 9 prohibit actions, by the federal government or by private parties, that may drive species toward the brink of extinction. The recovery planning section, on the other hand, requires actions that might lead those species away from that brink.

The concept of recovery I will champion in this article draws meaning from the recovery planning section but is broader in scope

\begin{itemize}
  \item[(A)] give priority to those endangered species or threatened species, without regard to taxonomic classification, that are most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity;
  \item[(B)] incorporate in each plan—
    \begin{itemize}
      \item[(i)] a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species;
      \item[(ii)] objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and
      \item[(iii)] estimates of the time required and the cost to carry out those measures needed to achieve the plan’s goal and to achieve intermediate steps toward that goal.
    \end{itemize}
  \end{itemize}

(2) The Secretary, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified persons. Recovery teams appointed pursuant to this subsection shall not be subject to the Federal Advisory Committee Act.

16. The Endangered Species Act divides the responsibility for the designation and protection of endangered and threatened species between the Secretary of the Interior and the Secretary of Commerce. 16 U.S.C. § 1532(15), § 1533(a)(2) (1995). The Secretary of the Interior has delegated authority under the Act to the United States Fish and Wildlife Service (USFWS). The Secretary of Commerce has delegated authority to the National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA). Agency regulations specifically enumerate which species each agency must protect. See 50 C.F.R. 222.23(a), 227.4. In general terms, USFWS is responsible for all terrestrial and freshwater aquatic species while NMFS is responsible for oceanic and anadromous species.

than the mandates the recovery planning section imposes. I will suggest that litigants and courts should pay more attention to implementing the recovery planning section. More significant, I will suggest that the concept of recovery has begun to and should continue to inform the interpretation of sections 7 and 9. In other words, the concept of recovery should be the lens through which we view all of the Act's mandates.

A greater emphasis on recovery, applied both through the recovery planning section and other provisions of the Endangered Species Act, could address both of the Act's inadequacies identified above. First, a greater emphasis on recovery would allow the Act to do more than simply prevent species from going extinct. It would encourage action to increase the numbers and distribution of protected species, providing them with the population and distribution they require to survive in the long term. Second, emphasizing recovery could help convince the public of the value of biological diversity protection by placing enforcement of all of the Act's provisions in a "problem-solving" context.19 This change in emphasis may help both regulators and members of the regulated community to take a broader view of efforts to protect threatened and endangered species by linking those efforts to a goal—a species population and distribution sufficient to warrant delisting. This change might prevent some of them from seeing the Act's requirements as a series of disjointed prohibitions against otherwise worthy endeavors.

A new emphasis on the concept of recovery does not, however, require de-emphasizing the Endangered Species Act's other provisions. Rather, a recovery-oriented approach to the Act should encourage a more unified view of the whole, a view in which all the Act's provisions appear as tools to further the Act's stated purpose, the preservation of species and ecosystems.

Although USFWS and NMFS have been preparing recovery plans for years,20 to date there has been no extensive analysis of the legal significance of recovery plans and the related concept of recovery.

19. A number of legal scholars have pointed out the advantages of problem-solving as an approach to legal disputes, particularly in the negotiating context. See, e.g., Carrie Menkel-Meadow, Toward Another View of Legal Negotiation: The Structure of Problem Solving, 31 UCLA L. REV. 754 (1984). The "problem solving" approach offers parties opportunities to consider more, potentially positive aspects of their dispute. Id. at 821 (discussing creative aspects of problem-solving negotiation). In the complex biological world of species preservation, the potential advantages of a "problem-solving" approach are enormous. See, e.g., DEFENDERS OF WILDLIFE, BUILDING ECONOMIC INCENTIVES INTO THE ENDANGERED SPECIES ACT (1993). For examples of problem-solving approaches in the recovery-planning context, see infra part IV.B.

20. See discussion infra part II.A. As of fiscal 1992, recovery-oriented activities consumed thirty-one percent of the USFWS Threatened and Endangered Species Program budget. FISH AND WILDLIFE SERVICE, U.S. DEP'T OF THE INTERIOR, ENDANGERED AND
James Kilbourne, perhaps the federal government's chief Endangered Species Act litigator, has called the recovery planning process "one of the key focal points of . . . efforts . . . to conserve and recover listed species," but his comprehensive study of the Endangered Species Act devotes less than two pages to discussing it. Other legal commentaries have been equally brief. The recent controversy surrounding Endangered Species Act recovery actions such as the reintroduction of wolves to Yellowstone National Park and Central Idaho, and initiatives to protect salmon in the Pacific Northwest, demonstrates the need for a more serious assessment of the legal dimensions of the process.

In this article, I hope to provide some of the information necessary for consideration of a new, recovery-oriented approach to the Endangered Species Act. I make no attempt to map precisely the appropriate role for the concept of recovery in Endangered Species Act jurisprudence. I suggest only that it should be much greater than it has been. First, I will consider, from a lawyer's point of view, how the Endangered Species Act fails to protect biological diversity, and what a recovery-oriented approach can do to change that (Part I). I will then discuss the legislative and regulatory history of the concept of recovery (Part II). I will also discuss the "evidentiary" function the concept of recovery is already playing in Endangered Species Act jurisprudence, and the "interpretive" function the concept of recovery is beginning to play in recent Endangered Species Act cases (Part III). I will then discuss the troublesome question of whether and to what degree recovery plans should be enforceable (Part IV) and, finally,

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21. Biologists and social scientists, on the other hand, have shown significant interest in the recovery process. See generally THREATENED SPECIES RECOVERY PROGRAM 9 (1992) [hereinafter 1992 RECOVERY PROGRAM REPORT].


26. I use the word jurisprudence intentionally. This article deals only with the appropriate role of the concept of recovery in law. It does not consider a related and thornier question: how one should develop and implement an effective recovery plan. For an exploration of that question, see generally Clark et al., supra note 21.
close with some observations on the legal virtues associated with a new recovery-oriented approach to the Endangered Species Act (Part V).27

Whether we can actually use the concept of recovery as the basis for an effective species protection regime under the Endangered Species Act is an open question. The Endangered Species Act is under attack in the halls of Congress28 and in state capitols across the country.29 Political opposition to the relatively small costs currently imposed on society to keep species from going extinct30 makes the idea

27. Much has been written and said recently about ecosystem-oriented approaches to the preservation of biological diversity. See Denise Henne, Taking an Ecosystem Approach, in Fish and Wildlife Service, U.S. Dep't of the Interior, Endangered Species Bulletin 6-10 (Jan./Feb. 1995); Julie B. Bloch, Preserving Biological Diversity in the United States: The Case for Moving to an Ecosystems Approach to Protect the Nation's Biological Wealth, 10 Pace Envtl. L. Rev. 175 (1992); Jon Welner, Natural Communities Conservation Planning: An Ecosystem Approach to Protecting Endangered Species, 47 Stan. L. Rev. 319 (1995). A new emphasis on recovery would complement and support ecosystem-based conservation efforts. Recovery may prove a more workable concept in court because it does not depend on changing scientific definitions of ecosystems, and because a considerable body of law already exists giving legal form to the concept of recovery.

28. As of November 1995, Republicans in both the U.S. Senate and U.S. House of Representatives have introduced legislation intended to significantly alter the Endangered Species Act. See S.768, 104th Cong. 1st Sess. (introduced by Sen. Slade Gorton, May 9, 1995); H.R. 2275, 104th Cong., 1st Sess. (introduced by Reps. Don Young and Richard Pombo, September 7, 1995). The following observation by Representative Helen Chenoweth illustrates the level of discourse in Congress on endangered species issues:

Rep. Helen Chenoweth, R-Idaho, says she doesn’t see why wildlife species must always be preserved across their entire range. So what if the Salmon River lacks salmon, she asks. Isn’t that frozen fillet from Alaska proof enough that salmon still thrive?


29. Governor Fife Symington of Arizona attacked the Endangered Species Act when United States District Judge Carl Muecke halted logging in 11 national forests in Arizona and New Mexico, shutting down sawmills:

I don't think any of us ever imagined in the freest country in the world that we could conjure up some circumstances where one individual would have the power, with the stroke of a pen, to shut down national forests and destroy a way of life and 4,000 jobs.

Steve Yozwiak & Pamela Mason, Irate Loggers Assail Judge from Convoy: 500 Protest Protections for Owl, Arizona Republic, Sept. 1, 1995, at B1. Governor Symington’s rhetoric on the subject was questioned by some commentators:

Arizona Gov. Fife Symington, whipping up public ire over a federal court order barring logging in the state’s national forests, recently told citizens in his state that this would mean nobody could cut a Christmas tree. Not so fast, said the U.S. Forest Service, noting that nothing in the court order, which is designed to protect the habitat of the Mexican spotted owl, prevents the cutting of Christmas trees on federal lands. The ruling applied only to commercial logging.


30. A new study suggests that the economic cost is extremely small. Stephen M. Meyer, Endangered Species Listing and State Economic Performance (Mar. 1995) (unpublished study, Massachusetts Institute of Technology, Project on Environmental Politics and
of imposing additional costs to recover those species almost implausible.

But no matter how politically difficult, a recovery-oriented approach to species protection is a goal worth striving for. The promise of recovery planning as a tool for bringing species, and perhaps the Endangered Species Act itself,\textsuperscript{31} back from the edge of extinction is tremendously significant. The lessons to be drawn from it are more significant still. As the human population of the planet continues to grow and the effects of human society on the environment continue to escalate, we have reached a point at which merely limiting the damage we do to the biological fabric of the planet is no longer enough. We must plan for the long-term viability of the natural systems on which we depend, and where necessary, actively assist in their maintenance. A recovery-oriented approach to species preservation, carried out with imagination, vigorously, and in good faith, will tell us a great deal about our ability to carry out such measure.

I

THE INADEQUACIES OF THE ENDANGERED SPECIES ACT AND HOW RECOVERY PLANNING CAN ADDRESS THEM

Commentators on\textsuperscript{32} and critics\textsuperscript{33} of the Endangered Species Act have emphasized its failure to bring species back to the point at which they no longer require federal protection. The criticism is valid and the fault is significant, but it is not a fault in the Endangered Species Act. It is a fault in the way we have come to perceive the Act through the lens of litigation. Twenty years of court cases have perpetuated the mistaken belief that the fate of protected species rises and falls with discrete, identifiable, and enjoinable projects, and that the prohibitions of the Act are more significant than its stated purpose. In this section, I will argue that a new emphasis on the concept of recovery can help us reconceive the Act in a way that better addresses the dynamics of extinction and reestablishes its role as a problem-solving law.


\textsuperscript{33} See Sugg, supra note 11.
A. The Endangered Species Act and the Dynamics of Extinction

1. Reading the Numbers

The Endangered Species Bulletin (formerly the Endangered Species Technical Bulletin), published by the United States Fish and Wildlife Service, regularly contains a "box score" of the number of species listed as threatened and endangered under the Endangered Species Act. The numbers are large and growing. The September 1976 box score showed a total of 597 endangered and 11 threatened species of plants and animals. The March 1995 box score showed a total of 759 endangered species in the United States alone and another 521 in foreign countries. The March 1995 box score showed 202 threatened species in the United States and 44 in foreign countries.

In May 1992, the United States General Accounting Office, an investigative branch of Congress, prepared a quantitative report on the record of the Endangered Species Act during its first two decades. According to the report, 16 species were removed from the lists of threatened or endangered species between 1973 and 1991. Of those, four were removed because the original data warranting listing had been in error. Seven, including the Dusky Seaside Sparrow and Santa Barbara Song Sparrow, were removed because they had gone extinct despite the Act's protection. Only five, including the Brown Pelican (Southeast population), had been delisted because they had recovered. Since that time, one additional species has been delisted as recovered, another has been proposed for delisting, and a third has been delisted because of discovery of additional populations. A number of other species, including the Bald Eagle, are on their way to recovery. However, the number of recovered species remains less than one percent of the species that have been added to the lists during roughly the same period of time (918).

These figures suggest two conclusions, one positive and one negative. First, they suggest that the Endangered Species Act has done...
well at preventing species from going extinct over a twenty-year period. Many hundreds of species are close enough to extinction to require protection, but only a handful have disappeared completely. Second, the figures suggest that the Endangered Species Act has been ineffective in recovering species to the point at which they can be delisted. Again, many hundreds of species are protected and only a handful have recovered. This is old news to anyone familiar with the application of the Endangered Species Act. It becomes bad news when coupled with the insights of conservation biology.  

Conservation biology shows us the dark side of the listing figures and provides the most powerful argument in favor of a recovery-oriented approach to the Endangered Species Act. Conservation biologists inform us that no species can survive on the brink of extinction indefinitely; that the continued existence of any species is a question of probabilities; and that the probabilities associated with many threatened and endangered species make their extinction simply a matter of time.

2. The “One Threat Model” and the “Probabilities Model”

Traditionally, lawyers and policymakers think about protected species problems in terms of a “one threat model” exemplified in early Endangered Species Act case law. In the typical case, a species entitled to protected status is threatened by a new project such as a dam or a highway. A federal court must determine whether that project is sufficiently detrimental to the protected species to contravene the substantive standards in section 7 or 9 of the Endangered Species Act. If so, the project must be stopped or modified.

Although consistent with the language of the Act, and persistent in the thinking of lawyers and policymakers, this model rarely reflects reality. It has been stretched to cover ongoing conduct detrimental to protected species: the maintenance of feral sheep and goats in endangered species habitat and the continuation of lead-shot hunting. It

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42. See supra note 10 for a definition of conservation biology.
43. In his introduction to Viable Populations for Conservation Biology, Michael Soulé traces the growing realization that a breeding pair of a species is not sufficient to perpetuate a population and the beginning of the scientific quest to determine how many members of a species are necessary to ensure a reasonable probability of long-term persistence and adaptation of species. VIABLE POPULATIONS FOR CONSERVATION BIOLOGY 1-9 (Michael E. Soulé ed., 1987). For more on the probabilities model proposed by conservation biologists, see infra part I.A.2.
46. Palila v. Hawaii Dep’t of Land and Natural Resources, 639 F.2d 495 (9th Cir. 1981); Palila v. Hawaii Dep’t of Land and Natural Resources, 852 F.2d 1106 (9th Cir. 1988).
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has been applied indiscriminately to species rendered precariously rare by natural conditions,\textsuperscript{48} and once abundant species driven to the brink of extinction by the threat from which plaintiffs seek relief in the administrative or judicial process.\textsuperscript{49} In each case, the model artificially isolates a single threat from a pattern of circumstances and conduct.

By isolating a single threat, the one threat model creates an illusion of security. When the threatening project is stopped or modified so that it no longer violates section 7 or 9 of the Act, plaintiffs who perceive the problem within the framework of the one threat model will break out the champagne and move on to the next lawsuit, leaving the species still balancing on the brink of extinction.

Conservation biology offers a different model of species preservation problems: the "probabilities model." The conceptual basis for this model is that the survival of any species over time is a matter of chance. A specific detrimental action or project may affect the probability of a species' survival or even drive it to extinction, but the significance of the project can only be understood in terms of the size and distribution of the population it affects.\textsuperscript{50} Since bad luck comes to every species whether or not it is protected by the Endangered Species Act, the only way to increase the chance that a species will survive its share of bad luck is to help it maintain or regain a sufficient population and distribution.\textsuperscript{51}

Government data shows that the fate of species depends on a variety of factors, not a single threat. Pursuant to the 1988 amendments to the Endangered Species Act,\textsuperscript{52} USFWS recently submitted its sec-

\textsuperscript{48} For example, it has been applied to the Mount Graham Red Squirrels. See Mt. Graham Red Squirrel v. Yeutter, 930 F.2d 703 (9th Cir. 1991); Mt. Graham Red Squirrel v. Madigan, 954 F.2d 1441 (9th Cir. 1992); Mt. Graham Red Squirrel v. Espy, 986 F.2d 1568 (9th Cir. 1993).

\textsuperscript{49} For example, the Red-Cockaded Woodpecker and Northern Spotted Owl have both been driven to near extinction by logging. See Sierra Club v. Lyng, 694 F. Supp. 1260 (E.D. Tex. 1988), aff'd in part and rev'd in part, Sierra Club v. Yeutter, 926 F.2d 429 (5th Cir. 1991); Seattle Audubon Soc'y v. Evans, 771 F. Supp. 1081 (W.D. Wash. 1991), aff'd, 952 F.2d 297 (9th Cir. 1991).

\textsuperscript{50} For example, the resurgence of cholera and tuberculosis in the past decade theoretically affects the survival prospects of the human species. However, because our species is so numerous and ubiquitous, the effect on species prospects will be negligible despite the many individual human tragedies that will result. On the other hand, a similar resurgence of life-threatening disease among the handful of remaining California Condors would dramatically affect the probabilities of the survival of that species. One commentator notes that "[i]f the species is to survive 200 years, management must ameliorate the prevailing catastrophe scenario or more than one population must be maintained." Mark Shaffer, Minimum Viable Populations: Coping with Uncertainty, in Viable Populations For Conservation 69, 76 (Michael E. Soulé ed., 1987).


ond biannual comprehensive report on endangered and threatened species recovery efforts. The report asserts that two percent of listed species are extinct and thirty-three percent are declining. Of the five declining species of mammals and birds for which the report provides any information, all are declining as the result of long-term patterns of conduct generally associated with habitat loss, and not as the result of a single identifiable threat like a road or dam.

A famous tale of extinction illustrates the problem. The now-extinct Heath Hen, once extremely common in New England, is among the species routinely listed as a victim of the European settlement of North America. A fact not so often reported is that efforts were made to preserve the Heath Hen: a reserve was created, and the population was stabilized. The reserve was small, however, and contained the only population of the species. When disease and other catastrophes struck, they destroyed the viable breeding population. The Heath Hen eventually became extinct. No doubt, the defenders of the Heath Hen celebrated when the reserve was created and the population stabilized. With hindsight we know that their efforts were doomed to fail because they did not “recover” the species sufficiently to allow it to sustain itself through the troubles that followed. One hundred years from now, how many species now protected by law will have gone extinct for similar reasons?

B. The Structure of the Law

How is it that the Endangered Species Act, intended to conserve species and ecosystems, seems to promote survival but not recovery? To understand how this effect takes place and why it is not inevitable, one must understand the structure of the Endangered Species Act.

The Endangered Species Act, as we know it, became law in 1973. Its primary purpose is and has always been “to provide a means whereby the ecosystems upon which endangered species and

54. Id. at 19.
55. See, e.g., Red-Cockaded Woodpecker, id. at 53, 208 (declining as the result of loss of small, isolated populations, hardwood midstory encroachment in previously “open” pine stands, loss of nesting and foraging habitat from southern pine beetle infestation, and short-rotation forest management); San Clemente Loggerhead Shrike, id. at 64 (declining as a result of habitat loss and degradation from decades of overgrazing by introduced feral goats, pigs, and deer); Florida Scrub Jay, id. at 82 (declining as a result of conversion of habitat to agricultural, residential, and commercial use); West Indian Manatee, id. at 89, 268 (declining as a result of boat-related mortality and habitat loss and degradation); Hawaiian Crow (’Alala), id. at 95 (declining as a result of habitat loss and introduced species and diseases).
56. GRUMBINE, supra note 10, at 36-37.
threatened species depend may be conserved.”58 The term “ecosystem”—the purported object of the Act’s stated function—is not defined in the Act. The term “conserve” is defined—as the “methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the chapter are no longer necessary.”59 For the past twenty years, however, those charged with enforcing the Act in court have pursued the Act’s stated goal of conservation in a roundabout way, emphasizing survival of species over recovery and prohibition over progress.

I. Section 4: Listing

The Act primarily protects “listed” species. Section 4 of the Act requires the federal designation or “listing” of both endangered and threatened species of plants and animals. An endangered species is any species “in danger of extinction through all or a significant portion of its range.”60 A threatened species is any species “which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”61

The Act also occasionally62 protects the “critical habitat” of threatened and endangered species. The “critical habitat” includes (1) geographical area occupied by a species that is essential to its “conservation” and requiring special management considerations or protections, or (2) specific areas outside the area occupied by the species at the time it is listed if essential to the conservation of the species.63 The agency charged with conserving the species, USFWS or NMFS, may decide to exclude certain areas from critical habitat if, after considering the “economic impact and any other relevant impact,” it con-

58. 16 U.S.C. 1531(b) (1995) reads as follows:

Purposes. The purposes of this chapter 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 takes such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.

See also 119 Cong. Rec. 42,912-13 (1973) (remarks of Rep. Dingell). Examination of the legislative history of the Endangered Species Act demonstrates that the purpose of the Act was to protect the “incalculable” value of biological diversity by conserving both species and the ecosystems on which they depend. See H.R. REP. NO. 412, 93d Cong., 1st Sess. 4-5 (1973).

59. 16 U.S.C. § 1532(3) (1985). As one scholar put it:

Ultimately, the Endangered Species Act attempts to bring populations of listed species to healthy levels, so that they no longer need special protection.

ROHLF, supra note 23, at 28.


62. See infra note 275 and accompanying text.

cludes that the benefits of excluding an area from critical habitat outweigh the benefits of including it.64

Although these definitions suggest that species and habitat should be entitled to protection as a result of their biological status alone, the actual trigger for protection is an administrative listing process. After completing its own, often lengthy,65 internal information-gathering process, USFWS or NMFS publishes a proposed rule for listing of a species as threatened or endangered, solicits comments, and then promulgates a final rule listing the species or designating the critical habitat.

The agencies charged with the task of listing must consider five criteria set forth in section 4(a)(1) of the Act: (1) the present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; or (5) other natural or man-made factors affecting continued existence.66 The criteria are difficult to apply, especially when the Act protects species as diverse as Fountain Dart-

64. The Secretary shall designate critical habitat, and make revisions thereto, . . . on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines, that the benefits of such exclusion outweigh the benefits of specifying such areas as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.


66. In addition to these five criteria, efforts made by state governments to protect species should be considered. Congress forbids consideration of the economic effect of listing as part of the listing decision. 50 C.F.R. § 424.11(b) (1994).
ers, limited by natural factors to two springs in Texas,\textsuperscript{67} and Grizzly Bears, exterminated from ninety-eight percent of their historical range in the contiguous forty-eight states.\textsuperscript{68}

2. \textit{Section 7: Jeopardy and the Duty To Conserve}

Section 7(a)(2) of the Endangered Species Act requires that all federal agencies shall, "in consultation with" USFWS or NMFS, "insure" that actions they authorize, fund or carry out "[are] not likely to jeopardize the continued existence" of any threatened or endangered species.\textsuperscript{69} Litigation made this provision the heart of the Endangered Species Act, stopping, at least temporarily, such prominent federal projects as the Tellico Dam in Tennessee,\textsuperscript{70} a 5.7 mile section of Interstate 10 in Mississippi,\textsuperscript{71} the Grayrocks Dam in Wyoming,\textsuperscript{72} highway and flood control projects in California,\textsuperscript{73} and timbering on public lands in the Pacific Northwest.\textsuperscript{74}

The interagency consultation process is the key to enforcement of the jeopardy prohibition. When a federal agency ("the action agency") plans to fund, to authorize, or to carry out an action, it must ask USFWS or NMFS for information about protected species which may be present in the area.\textsuperscript{75} If USFWS or NMFS advises the action agency that protected species may exist in the area, then the action agency must prepare a "biological assessment" to determine whether protected species are likely to be affected.\textsuperscript{76} Generally, a "may affect" determination at the end of the biological assessment process requires the action agency to initiate consultation with USFWS or NMFS.\textsuperscript{77}

\textsuperscript{67} Sierra Club v. Lujan, 1993 WL 151,353 (W.D. Tex. 1993).
\textsuperscript{70} See Tennessee Valley Auth. v. Hill, 437 U.S. 153, 193-95 (1978). Enforcement of the Endangered Species Act delayed completion of a federal dam project on the Little Tennessee River. Completion of the dam eradicated the only known population of Snail Darters. The dam was finally completed and the fish population eradicated after congressional action exempted the project from the Endangered Species Act.
\textsuperscript{71} National Wildlife Fed'n v. Coleman, 529 F.2d 359, 375 (5th Cir. 1976) (delaying completion of Interstate 10 through Mississippi Sandhill Crane habitat).
\textsuperscript{73} Sierra Club v. Marsh, 816 F.2d 1376 (9th Cir. 1987) (delaying work on flood control channels and freeway interchanges near San Diego, California to protect Light-Footed Clapper Rail and California Least Tern).
\textsuperscript{76} Id.; see also 50 C.F.R. § 402.12 (1994).
\textsuperscript{77} 50 C.F.R. § 402.14 (1994). The regulations also indicate that formal consultation is not necessary when the action agency determines the action is not likely to "adversely
USFWS or NMFS then prepares a “biological opinion” indicating whether or not the proposed action will jeopardize the continued existence of the protected species. Joint 1986 USFWS and NMFS regulations define “jeopardize the continued existence of” to mean “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 . . . .” If USFWS or NMFS determines that the proposed action will result in jeopardy, the agency “shall suggest those reasonable and prudent alternatives which [it] believes can be taken” to avoid jeopardy.

A 1992 General Accounting Office study of consultations undertaken between 1987 and 1991 indicated that the reasonable and prudent alternatives process has become the primary mechanism for resolving identified conflicts between federally authorized projects and the survival of protected species. Of the 1,869 consultations undertaken during the five-year period, 181 resulted in “jeopardy opinions” identifying conflicts. In 158 of those 181 cases, the agencies offered at least one reasonable and prudent alternative allowing the activity to go forward without violation of section 7(a)(2). Still, section 7 is better known for the handful of projects it has stopped than for the hundreds it has allowed to go forward.

Section 7(a)(2) also protects designated critical habitat from “destruction or adverse modification” through the same consultation process. Joint 1986 USFWS/NMFS regulations define “destruction and adverse modification” to include only “a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.”

Despite the emphasis of the regulations on potential injury to both “survival” and “recovery,” the USFWS has always been willing to admit its frequent inability to distinguish between the two concepts in particular fact situations.

In addition to its jeopardy provisions, section 7 imposes a “duty to conserve” on all federal agencies. Section 7(a)(1) states that “all . . . Federal agencies shall, in consultation with and with the assistance of the Secretary [of the Interior or Commerce], utilize their authori-

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79. 50 C.F.R. § 402.02 (1994).
82. 50 C.F.R. § 402.02 (1994) (emphasis added).
83. See discussion infra part IV.B.
ties in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered and threatened species."

The duty to conserve is the most sweeping and among the most elusive of Endangered Species Act duties. Environmental plaintiffs have asserted the duty to conserve as a basis for modifying federal agency action. They have established that the duty does exist and have occasionally succeeded in convincing courts that the duty to conserve constrains agency action. On balance, however, more courts have rebuffed these claims. The law regarding the duty to conserve remains sparse and unsettled because the duty is difficult to define. The agencies have explicitly declined to define the extent of the "duty to conserve."

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84. (Emphasis added.) The original one-paragraph section 7 provided:

All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purpose of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded or carried out by them do not jeopardize the continued existence of such endangered species or threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.

85 Stat. 892 (1973). After the United States Supreme Court's holding in Tennessee Valley Authority v. Hill, 437 U.S. 153 (1978), created the 1978 furor about the value of protecting species, Congress revamped section 7 and severed the "duty to conserve" language from the now better-known "jeopardy" and "critical habitat" language. Section 7(a)(1) now reads:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this chapter. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species....


85. See Carson-Truckee Water Conservancy Dist. v. Watt, 549 F. Supp. 704 (D. Nev. 1982), aff'd, 741 F.2d 257 (9th Cir. 1984) (requiring Bureau of Reclamation to provide more water to endangered fish than was necessary to maintain bare survival); Defenders of Wildlife v. Andrus, 428 F. Supp. 167 (D.D.C. 1977) (invalidating USFWS regulations allowing duck hunting at times at which it created a risk to protected species).


87. Several commentors noted that, although § 402.01 acknowledges the language of section 7(a)(1) of the Act, no guidance is provided to enable Federal agencies to meet their conservation responsibilities under the Act. Claiming that the rules are silent as to Federal agency management programs required for the recovery of listed species, one commentor advised the Service to add a statement in the rule that would insure that Federal agencies address recovery as well as detrimental effects through consultation. According to another commentor, this
agencies abandon their statutorily mandated missions in furtherance of species conservation. Between these two ends of the continuum, the legal terrain is unclear. On a day to day basis, the duty to conserve is relevant for the formulation of discretionary “conservation recommendations” as part of the section 7 jeopardy consultation process.88

3. **Section 9: The Taking Prohibition**

   Section 9(a)(1)89 makes it unlawful for “any person” to “take” any endangered species of fish or wildlife. To “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”90 Section 9(a)(1) protects a smaller group of species than section 7(a)(2)—all endangered fish and wildlife and, under regulations issued pursuant to section 9(a)(1),91 most threatened fish and wildlife—from a broader range of threats, including threats to individual species members and threats from non-federal parties. The potential power of section 9 as a species protection mechanism did not become apparent until the late 1980s, when a number of cases demonstrated its ability to reach a variety of threats beyond the scope of section 7(a)(2).92

   Despite the recent Supreme Court decision in *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*,93 the degree to which section 9(a)(1) protects essential habitat for species is still a

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88. 50 C.F.R. § 402.140) (1994) provides that USFWS or NMFS “may provide with the biological opinion a statement containing discretionary conservation recommendations. Conservation recommendations are advisory and are not intended to carry any binding legal force” (emphasis added). The regulation makes both the provision of conservation recommendations and compliance with them discretionary.


subject of great dispute. Before *Sweet Home*, the Fifth and Ninth Circuits had interpreted the taking prohibition and the USFWS regulations implementing it to include habitat modification. On the other hand, the District of Columbia Circuit had invalidated USFWS regulations including habitat modification within the definition of “take.” In *Sweet Home*, the Supreme Court reversed the District of Columbia Circuit holding, upholding the authority of USFWS to promulgate regulations including “habitat takings” within the definition of “harm” in the definition of “take.” However, Justice O’Connor’s concurrence called into question the scope of the original Ninth Circuit holding in *Palila v. Hawaii Department of Land and Natural Resources* interpreting the meaning of habitat taking.

4. The Exemption from the Section 7 Jeopardy Prohibition

The section 7(a)(2) prohibition against federal action likely to jeopardize the continued existence of a protected species is subject to one limited exception: a Cabinet-level “Endangered Species Committee” may be convened under section 7(e). If, after hearings, the committee determines that the benefits of the action likely to jeopardize a species “clearly outweigh the benefits of alternative courses of action consistent with conserving the species,” and that “the action is of regional or national significance,” then it may allow the action to go forward regardless of the jeopardy finding. The exemption process has been used to completion three times since it was created by the 1978 amendments to the Endangered Species Act.

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97. *Id.* at 2418. The *Sweet Home* opinion is discussed at part IV.A., *infra*.
98. 16 U.S.C. § 1536(e) (1985). The Endangered Species Committee, often called the “God Committee” or “God Squad,” includes six members of the Cabinet and additional members from affected states. Cabinet members include the Secretaries of the Interior, Agriculture, and Army, the Chairman of the Council of Economic Advisors, and the administrators of EPA and NOAA.
100. Congress created the Endangered Species Committee in response to the United States Supreme Court holding in *Tennessee Valley Authority v. Hill* preventing completion of the Tellico Dam to protect the endangered Snail Darter. Proponents of the Tellico Dam sought to exempt it from Section 7 of the Endangered Species Act through the Endangered Species Act Committee process. However, the Committee did not grant an exemption. Endangered Species Committee, 44 Fed. Reg. 3547 (1979). The Committee granted an exemption earlier that year for the Grayrocks Dam in Wyoming (affecting Whooping Crane habitat in Nebraska). See Council on Environmental Quality, 58 Fed Reg. 68,635 (1991). The Endangered Species Act Committee came into play again in 1992
The Exemptions from the Section 9 Taking Prohibition

In 1982, during the second major Endangered Species Act amendment and reauthorization process, Congress created two significant exceptions to the section 9(a)(1) taking prohibition. The first, embodied in sections 7(b)(4) and 7(o)(2), authorizes USFWS and NMFS to include “incidental take statements” as part of biological opinions rendered for federal action agencies through the section 7 consultation process. These “statements” allow a federal agency or applicant subject to section 7(a)(2), planning to engage in an activity not likely to jeopardize the continued existence of a species, to “take” members of that species if the taking is not the purpose of the action and is, therefore, “incidental” to the action.

If, after consultation, USFWS or NMFS concludes “that the action subject to consultation will not jeopardize the species,” and that the “incidental taking” is not likely to jeopardize the species, then USFWS or NMFS shall issue a statement which (1) specifies the impact of the incidental taking on the species; (2) specifies “reasonable and prudent measures” to minimize that impact; and (3) sets forth “terms and conditions” to implement the reasonable and prudent measures. Section 7(o)(2) provides that any taking in compliance with a section 7(b)(4) incidental take statement “shall not be considered to be a prohibited taking of the species concerned.”

Second, section 10(a) of the Endangered Species Act allows USFWS and NMFS to issue “incidental take permits” to any party, public or private, whose actions might otherwise violate section 9(a)(1). To get a section 10(a) permit, an applicant must submit a “conservation plan” to the federal agency charged with protecting the species, either USFWS or NMFS. The plan must specify the impact likely to result from the taking, steps the applicant will take to minimize that impact, alternative actions considered, and any other measures USFWS or NMFS considers “necessary or appropriate.” Once the applicant submits the plan to USFWS or NMFS, the agency, after


102. Incidental take includes any taking, otherwise prohibited by section 9(a)(1), that is “incidental to, and not the purpose of, the . . . activity.” 50 C.F.R. § 17.3 (1995). Accordingly, the ritual killing of a Florida Panther can never be “incidental,” but the biological destruction accompanying the detonation of a hydrogen bomb may be.

103. 16 U.S.C. § 1536(b)(4) (1995). In 1986, USFWS and NMFS jointly promulgated regulations to implement the section 7(b)(4)/7(o)(2) exception. The regulations provide that the “reasonable and prudent measures” required in the incidental take statement to minimize takings “cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes.” 50 C.F.R. § 402.14(i) (1989).


soliciting and reviewing public comment, will issue an incidental take permit if it finds that the taking will be incidental, the applicant will minimize impacts on the species, the applicant can fund the plan, and the taking “will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.” The legislative history of section 10(a) suggests that to “not appreciably reduce the likelihood of the survival of the species in the wild” is the most important criterion in determining the validity of a conservation plan, and that this standard is simply another formulation of the section 7(a)(2) jeopardy standard. The section 10(a) exemption process has inspired a variety of habitat conservation planning initiatives, some of which have been granted 10(a) incidental take permits, but many of which have not.

The regulatory “bottom line” for both the 7(b)(4) and 10(a) exemption processes is that exceptions to the taking prohibition may be granted under certain circumstances, but only if the exemptions are not likely to jeopardize the continued existence of the species. In this way, USFWS and NMFS apply the section 7 jeopardy standard to both federal and non-federal parties.

6. The Wranglers and the Herd

A homey metaphor may assist in comprehending the relationship between designated species and the provisions of the Endangered Species Act designed to protect them. One may conceive of the population of administratively listed species as a herd of sick and injured animals (each animal representing an entire species) crossing the apocalyptic landscape created by human destruction of the natural environment and subject to threats by a variety of human predators. This herd of beasts moving across the landscape is under the protection of an eccentric set of “wranglers” representing the protections created by the provisions of the Endangered Species Act.

110. Certainly, the Act also protects designated critical habitat. However, no metaphor is perfect, and demanding that the reader conceive of some of the animals in our herd as “habitats” seems to stretch this one beyond its limits.
111. I am not the first to liken the extinction crisis to the apocalypse. See Stephen Jay Gould, Four Antelopes of the Apocalypse, NATURAL HISTORY, May 1993, at 16.
112. I use the term “wrangler,” to denote professional managers of any sort of animal. (I rejected terms like “handler” and “keeper” on the ground that they carried too much
The wrangler who represents the section 4 listing process gathers new animals into the herd when they are sufficiently sick or injured to require protection. As she does, she brands each either “endangered” or “threatened.” Ideally, her only concern is whether the animals she encounters meet the scientific criteria required for each brand. However, she has more work than she can reasonably handle, and has identified many animals apparently deserving the protection of the herd which she has not yet been able to brand. Once an animal is branded and placed in the herd, it is no longer the concern of the section 4 wrangler.

The wrangler who represents section 7 protects the entire herd—both threatened and endangered species. However, he only protects them from a specific type of threat—actions authorized, funded, or carried out by federal agencies—and he only protects them if the injury they suffer is potentially life-threatening, that is, likely to jeopardize the continued existence of the entire species. A non-federal actor might annihilate the herd and it would be of no concern to our section 7 wrangler. Federal actors or federally authorized actors may injure the herd members, prevent their return to health or harass them, and so long as the action does not significantly increase the chance of extinction it too would be of no concern to our section 7 wrangler.

The wrangler who represents section 9 will only protect some members of the herd, endangered species of fish and wildlife (threatened species of fish and wildlife may be protected by regulation and generally are), but will protect them against all threats, federally authorized or not, and protect them against all sorts of injury, whether it will jeopardize the continued existence of the species or not. Although potentially the most energetic of the wranglers, she has often been ignored until recently.

The section 7 wrangler is relatively incorruptible. He will discharge his duty to prevent jeopardy from federal actions unless expressly told not to do so by his superiors on the “God Committee.” This is a rare occurrence indeed.

The section 9 wrangler is more open to persuasion, and may agree to stop protecting her charges against a certain threat if the predator in question obtains leave under one of two exemption processes created by the Endangered Species Act—section 7(b)(4),

positive baggage and terms like “shepherd” and “cowboy” on the ground that they were species-specific.)

113. For discussion of the “listing bottleneck,” see Houck, supra note 23, at 292-96; GENERAL ACCOUNTING OFFICE, ENDANGERED SPECIES, supra note 65.
115. See Cheever, supra note 92, at 151-64.
116. See supra note 100 and accompanying text.
under which a federal actor or federally authorized actor may obtain an exemption from the takings prohibition, or section 10(a), under which any actor may get an exemption from the taking prohibition. However, the section 9 wrangler's flexibility goes only so far. She will not allow you to get her into trouble with the section 7 wrangler by jeopardizing the continued existence of any species. Her caution is sufficiently great to lead her to reject exemptions from the taking prohibition by federal or non-federal actors.

These three wranglers and their herd move across the landscape. As more species on or near the brink of extinction appear, they are branded "endangered" or "threatened" and added to the herd. The herd gets larger. As time goes by, a few branded animals die despite the wranglers' best efforts (no one is perfect), and a few recover from their wounds and injuries without assistance, but most continue on in the herd.

7. The Role of Recovery Planning: The Fourth Wrangler

Section 4(f) of the Endangered Species Act requires USFWS or NMFS to "develop and implement" documents called "recovery plans" for "the conservation and survival of endangered species and threatened species" unless the agency finds that "such a plan will not promote the conservation of the species." To the "maximum extent practicable" each plan should include "a description of such site-specific management actions as may be necessary to achieve the plan's goal," "objective measurable criteria which, when met, would result in a determination . . . that the species be removed from the list," and "estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal."

The recovery planning section can be thought of as a fourth wrangler, charged with nursing the members of the herd back to health, thereby reducing the size of the herd and rendering protected species less susceptible to threats beyond the control of the section 7 and 9 wranglers. Indeed, all the wranglers, sitting around their evening fire, would agree that their ultimate goal is to nurse all the members of the herd back to health. For this reason, they might recognize that the recovery wrangler has a special status and should coordinate the actions of the company when disputes arise among them or when the extent of their specific duties is ambiguous.

Recovery planning could give the agencies charged with administering the Endangered Species Act more flexible authority to take ac-

tions to enhance the prospects of protected species without dealing with the immediate, inflexible, and sometimes politically charged threat from a planned project or program that may violate section 7 or 9. These benefits might also extend to other federal agencies with activities affected by species protection. As one commentator, discussing agency behavior under the Endangered Species Act, noted:

[F]ederal agencies ought to recognize that their interests lie in participating in [recovery] plan development. If the plans are binding, the agencies need to ensure that their discretion is explicitly preserved in the plan . . . . If the plans are not binding, agencies should still find participation on recovery teams worthwhile to shape conservation activities that will occur on their geographic or functional turf.

However, to date, this fourth member of the company has had little or no power to assist the herd or boss the other wranglers. Although the Endangered Species Act states that recovery or conservation of protected species and the ecosystems on which they depend is the central purpose of the Act, and USFWS informs us that “[r]ecovery planning under section 4(f) of the Act is the ‘umbrella’ that eventually guides all [Endangered Species Act] activities and promotes a species’ conservation and eventual delisting,” the recovery planning section and the concept of recovery it embodies have played an insignificant role in the legal protection of endangered and threatened species. The same agency that declares recovery planning the umbrella that eventually guides all activities also tells us that recovery plans are “guidance documents” and not “decision-making” documents. Although recovery plans are required by law to identify specific recovery actions and a specific time frame for implementing them, the agencies and courts agree that these “implementation schedules” are unenforceable. In 1993, researchers at the Univer-

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123. See discussion *infra* part II.A.
127. See discussion *infra* part V.A.1. To get the full flavor of the baffling nature of recovery planning—apparently all-important in protecting species, and apparently insignificant in regulating activities that may harm species—consider the following USFWS language:
sity of Idaho announced findings indicating that recovery plans for many species prescribed "management for extinction" rather than management for recovery by setting recovery goals so low that they could not significantly increase the chance of species survival. Not surprisingly, the size of the metaphorical herd continues to grow, and the health of its members does not often improve.

C. How our Current Perception of the Endangered Species Act Frustrates Preservation and What the Recovery Concept Can Do About It

1. The Problem: When Prohibition Overshadows Purpose

Any effective process for the preservation of biological diversity will require substantive mandates constraining human actions harmful to species in danger of extinction or the ecosystems on which they depend. Voluntary approaches to species preservation have been tried and have failed. Along with its goal of conserving/recovering species and ecosystems, the Endangered Species Act contains strong substantive mandates. During the application of the Act over twenty years, however, the Act’s prohibitions have eclipsed its purpose.

In his 1982 book, Prohibitive Policy: Implementing the Federal Endangered Species Act, Steven Yaffee presented the Act as an archetype of "prohibitive policy"—"one of the most extreme forms of government intervention." In their popular environmental law

Recovery plans developed under section 4(f) of the Act guide much of the Service’s recovery activities and promote conservation and eventual delisting of species. Recovery plans address the steps needed to recover a species throughout its range and provide a mechanism for implementation. Recovery plans provide guidance, which may include population goals, and usually include identification of areas in need of protection or special management. A recovery plan is not a regulatory document, but a plan may identify recommendations for implementing actions. Biologically sound plans offer opportunities for resolving conflicts between development interests and endangered species conservation and provide a basis for present and future management decisions.


130. Steven L. Yaffee, Prohibitive Policy: Implementing the Federal Endangered Species Act 1 (1982). Yaffee discusses the political nature of prohibitive policy in detail and correctly points out complexities in prohibitive species preservation policy: Prohibitive policy is also appropriate when the risks of allowing the prohibited activity are very large. If you are extremely risk averse and feel that by allowing an activity to take place there is a possibility of incurring disastrously high costs, prohibitive policy is an appropriate way to protect yourself. Interest groups
casebook, Zygmunt Plater, Robert Abrams, and William Goldfarb present the Endangered Species Act as their example of a "substan-
tive roadblock . . . [a] stark prohibition statute." 131

The relative prominence of the Act's prohibitive mandates in the
eyes of scholars, courts, and the public prevents it from educating peo-
ple about the need for species preservation. When discussion focuses
on whether section 9 prohibits logging in the Pacific Northwest or sec-
tion 7 prevents construction of a federal dam, the underlying justifica-
tion for the Endangered Species Act—that prudence dictates that we
preserve the biological diversity on which we depend 132—is obscured.

As one scholar notes, "[t]he real challenge . . . is to convince the
public to elevate biodiversity conservation to a position of primacy
within public land and resource law." 133 The current characterizations
and mischaracterizations of the Endangered Species Act illustrate that
the perception of law plays a significant role in the political discourse
surrounding the Act. 134 The perception of the Endangered Species
Act as a prohibitive statute prevents the Act from demonstrating the
value of biological diversity.

The prominence of prohibitions in the interpretation of the En-
dangered Species Act is clear from the first cases in the 1970s. In
1975, in National Wildlife Federation v. Coleman, 135 the Fifth Circuit
reversed a district court decision to allow construction of Interstate 10
through the habitat of the endangered Mississippi Sandhill Crane. At
the time there were about forty endangered cranes left. 136 The court
held that the substantive prohibition in section 7 of the Endangered
Species Act prohibited construction of the highway absent steps to
"insure" that the highway would not jeopardize the remaining
cranes. 137 The court stated:

[Section] 7 imposes on all federal agencies the mandatory obligation to
insure that any action authorized, funded, or carried out by them does

that advocated a prohibitive law to protect endangered species based their argu-
ments in part on an estimate of risk and uncertainty: "We do not know what
might happen in the future if we lose a species but there might be high costs."
The endangered species issue is tricky. Many humans will agree that the potential
costs of losing one species are not terribly high but the aggregate loss of many
species may indeed be costly . . . . Preservationists apply their aggregate risk
estimate to the individual species level because decisions are made at that level.

Id. at 159.
131. ZYG MUNT J. B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE,
132. See supra notes 2-5 and accompanying text.
133. Robert B. Keiter, Conservation Biology and the Law: Assessing the Challenges
134. See supra note 28.
135. 529 F.2d 359 (5th Cir. 1976).
136. Id. at 362.
137. Id. at 373.
not jeopardize the existence of an endangered species or destroy critical habitat of such species. . . . Although the FEIS [Final Environmental Impact Statement] and the administrative record indicates that the appellees have recognized and considered the danger the highway poses to the crane, they have failed to take the necessary steps "to insure" that the highway will not jeopardize the crane or modify its habitat.138

Neither the parties nor the court appeared to consider how the handful of cranes would survive with or without the highway.

Just three years later, the United States Supreme Court set the rhetorical tone for the next fifteen years of Endangered Species Act law in the famous case of Tennessee Valley v. Hill. The Court's holding—that the Act prohibited closure of the almost complete Tellico Dam if that closure would jeopardize the continued existence of the endangered Snail Darter—was extremely important, but what made the case extraordinary was the Court's apparent fascination with the absolute nature of section 7's prohibition. In a passage that continues to be cited to this day, the Court said:

One would be hard pressed to find a statutory provision whose terms were any plainer than those of § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies "to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence" of an endangered species. . . . This language admits to no exception.139

The Court focused on the Act's prohibitions and not its purpose. The long-term fate of the Snail Darter and its ecosystem were of little concern.

The emphasis on prohibition has continued in more recent case law. In 1994 and 1995, the U.S. District Courts for the Districts of Oregon and Idaho and the Ninth Circuit Court of Appeals enjoined a broad range of human activity in Wallowa-Whitman, Umatilla, Boise, Challis, Nez Perce, Payette, Salmon, and Sawtooth National Forests in Oregon and Idaho to protect endangered salmon.140 The injunctions resulted from the United States Forest Service's failure to consult with NMFS about the effect of those activities contemplated in the Forest Service land and resource management plans for the national forests, and lasted until consultation with NMFS was completed.141 The case analyses contain no significant discussion of the future of the protected species.

138. Id. at 373 (emphasis added).
141. 30 F.3d at 1054-56.
Perhaps the ultimate rhetorical elevation of prohibition over purpose appears in the U.S. District Court opinion in *Sierra Club v. Lyng*. In that case, Judge Robert Parker of the U.S. District Court for the Eastern District of Texas found that Forest Service timber management on the Texas National Forests violated both sections 7 and 9 of the Endangered Species Act by “taking” and “jeopardizing” the endangered Red-Cockaded Woodpecker. The court entered an injunction significantly limiting timber practices on those forests, prohibiting all even-aged timber cutting within 1200 meters of any woodpecker colony site. However, at the same time, Judge Parker opined:

Picoides borealis, commonly known as the red-cockaded woodpecker, is a small undistinguished woodpecker indigenous to the southern United States. The evolutionary niche it has carved out places it at odds with modern man and man's industrialized society. The red-cockaded woodpecker is not well adapted to the real world as it exists today on the Texas national forests. The fact that its survival depends on a very specialized habitat bodes ill for the future of this bird. The voluminous evidence, both written and oral, introduced in the trial of this case leaves this Court with the firm impression that we are presiding over the last rites of a cohabitant of the blue planet.

The combination of the court's extensive injunction and its pessimistic assessment of the future of the species epitomizes the elevation of the Endangered Species Act's prohibitions over its purpose.

*Coleman, Hill,* and the cases that followed them were hailed as victories by environmentalists. They established the Endangered Species Act as a powerful law for environmental preservation. In another sense, however, they were pyrrhic victories. Interstate 10 was completed, the Tellico Dam was closed, and, perhaps as significantly, the case law drew the rhetorical battlelines further and further from the original purpose of the Endangered Species Act.

2. Part of the Solution: Recovery Planning as Problem-Solving

So long as the Endangered Species Act mandates anything, there will be a tendency for litigants and courts to focus on those mandates that are most clearly enforceable (the consultation provision of section 7 and the takings prohibition of section 9), and to pass over con-

143. Id. at 1278.
144. Id. at 1265.
sideration of the Act's larger purpose. However, the current emphasis on the Act's prohibitions at the expense of its purpose can be alleviated in part through a new emphasis on the concept of recovery and, specifically, the recovery planning process.

The recovery planning section, section 4(f), requires the development and implementation of recovery plans. While the quality and specificity of recovery plans vary a great deal, the statute requires that each have an "objective" (preferably, the delisting of the species), and that each set forth a series of tasks that, if implemented, should achieve that objective over a stated period of time.\textsuperscript{146} Recovery plans are, by their nature, problem-solving documents: they identify a goal and outline methods for reaching that goal.\textsuperscript{147} Recovery plans thus avoid the single-minded focus on discrete threats that characterizes litigation under sections 7 and 9, and they connect back to the Endangered Species Act's larger goal of conserving species and ecosystems.

The recovery planning section is the only section in the Endangered Species Act which can be used to counteract the flawed "one threat model." Merely preventing species from disappearing as a result of a particular project or program addresses only one part of a larger problem. To afford species a decent chance of long-term survival, regulators must develop a program to "recover" species to the point at which they are sufficiently numerous and widespread to survive one of the catastrophic events that are an inevitable part of life on this planet.\textsuperscript{148}

In his 1991 article \textit{Six Biological Reasons Why the Endangered Species Act Doesn't Work—And What to Do About It},\textsuperscript{149} Daniel Rohlf identified six problems with the biological effect of the Act. This list provides a set of standards to consider the potential of a recovery-oriented approach. First, Rohlf points out that the Act protects individual species rather than overall biological diversity.\textsuperscript{150} A more recovery-oriented approach to species preservation would require more general protection of biological diversity by focusing protection on the broader habitat needs of a recovering species population. Second, Rohlf points out that the Act lacks clearly defined thresholds to delineate endangered, threatened, and recovered species.\textsuperscript{151} If we understand the listing process as the threshold to a process leading to recovery, these distinctions become temporary and, to a degree, less important. Third, Rohlf points out that the Act does not adequately

\begin{itemize}
\item \textsuperscript{146} See infra part II.C.
\item \textsuperscript{147} See supra note 19.
\item \textsuperscript{148} See Shaffer, supra note 50.
\item \textsuperscript{149} See Rohlf, supra note 32.
\item \textsuperscript{150} Id. at 275.
\item \textsuperscript{151} Id.
\end{itemize}
protect multiple populations of the same species. The recovery planning process requires the development of recovery objectives which should include the establishment or maintenance of a number of populations of the protected species. The reintroduction of a second population of California Sea Otters on San Nicolas Island, using individuals from the main population off the Central California coast, is an example. Fourth, Rohlf points out that many biological determinations under the Act are not adequately documented. This is not a problem recovery orientation can resolve. Fifth, Rohlf observes that the Act does not protect habitat reserves sufficient to sustain "recovered" populations. A recovery-oriented approach to the Act would focus more effort on creating and maintaining a recovered population and, therefore, more effort on preserving the habitat necessary to do so. Finally, Rohlf observes that the Act's enforcement tends to discount uncertain or non-intermediate effects. A recovery-oriented approach to the Act would stretch the current "one threat" planning horizon, encouraging consideration of long-term and uncertain prospects.

Not all recovery plans fulfill their potential; many launch immediately into descriptions of the character and habits of subject species, and proposed activities to assist them, without significant statements about the broader context of species conservation under the Endangered Species Act. However, the best of them display a positive spirit at odds with Judge Parker's dark ruminations in *Sierra Club v. Lyng*. The 1987 Northern Rocky Mountain Wolf Recovery Plan, which provided for the reintroduction of wolves into Yellowstone and Idaho, begins:

> [T]he purposes of the Endangered Species Act are to provide a program for the conservation of such endangered and threatened species as well as a means whereby the ecosystems upon which such species depend may be conserved. . . . The Northern Rocky Mountain Wolf Recovery Plan outlines steps for recovery of gray wolf (*canis lupus*) populations in portions of their former range in the Northern Rocky Mountains of the United States. . . . This plan emphasizes gray wolf recovery through natural processes (dispersal southward from western Canada) where possible. Where this is not possible because of distance from "seed" populations, translocation is the only known way to

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152. *Id.* at 277.
155. *Id.* at 278.
156. See discussion of critical habitat, *infra* part IV.C.
establish a population. Either philosophy necessitates conservation of suitable habitat in appropriate recovery areas.\textsuperscript{158}

Despite its limitations, this language forces the reader to think about wolves rather than law. It incorporates both the broad purposes of the Act and its specific application to wolves, and in so doing suggests a new perspective for viewing the Endangered Species Act: one that is goal-driven rather than prohibition-driven.

Of course, recovery planning is no cure-all. Many species are not "recoverable" to the point of delisting in the foreseeable future, often because irreversible habitat destruction has so constricted the potential living space for the species that the goal of a viable population is more aspirational than realistic. Moreover, the recovery planning section explicitly grants USFWS and NMFS the power to forgo the recovery process. The law requires the agencies to "develop and implement" recovery plans "unless [they] find[ ] that such a plan will not promote the conservation of the species."\textsuperscript{159} As of March 1995, the agencies have prepared recovery plans for 504 of 961 listed domestic species.\textsuperscript{160} Even if USFWS and NMFS prepare ambitious recovery plans, however, there is no guarantee they will be carried out.

Despite these limitations, recovery planning can serve an important role in conserving a species even when delisting is not a realistic goal. The Red Wolf Recovery Plan admits that delisting the species will not be feasible in the foreseeable future.\textsuperscript{161} However, under the recovery plan, the once extinct-in-the-wild species has been reintroduced to the American southeast and its chances for survival have significantly increased.\textsuperscript{162}

Recovery plans offer a new perspective on endangered species protection: one that connects implementation of the Endangered Species Act to its purpose in a way that makes the Act more intelligible, effective, and perhaps politically acceptable. Such a perspective will have value only if implemented. Over the next few sections, I will show that Congress, USFWS and NMFS, and courts have all become increasingly interested in recovery plans over the past few years.

\textsuperscript{160} FISH AND WILDLIFE SERVICE, U.S. DEP'T OF THE INTERIOR, ENDANGERED SPECIES BULLETIN, BOX SCORE 24 (Mar./Apr. 1995), supra note 35 (as of March 1995, there were 445 approved recovery plans. Some recovery plans cover more than one species, and a few species have separate plans covering different parts of their ranges).
\textsuperscript{162} Id.
In considering the concept of recovery and recovery planning, and directing the role it should perform in our thinking about the Endangered Species Act, we do not work on an empty stage. Since its inception, recovery planning has played a variety of roles in the development of Endangered Species Act law. This past constrains any future performance. This section sets forth the legislative process for the current recovery planning provision.

The concept of recovery embodied in the Endangered Species Act today did not arise full-blown from any Congressional enactment. Rather, it is the result of accretion. Recovery planning began as an agency process, made a belated appearance as a legislative mandate, and has continued to grow in complexity and extent. This historical growth of the recovery mandate provides the practical basis for the increased emphasis on recovery I will argue for in succeeding sections.

A. The 1978 Amendments to the Endangered Species Act

The original Endangered Species Act of 1973 contained no reference to recovery planning. Recovery planning first became part of the law in 1978 during the Act's first major amendment process, a process notable for the creation of the Endangered Species Act Committee and heated debate in the wake of the United States Supreme Court's opinion in Tennessee Valley Authority v. Hill. The original recovery planning provision was uncontroversial. It provided:

The Secretary shall develop and implement plans (hereinafter in this subsection referred to as "recovery plans") for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote the conservation of the species. The Secretary, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions and other qualified persons.

The most significant language is in the first sentence: "the Secretary shall develop and implement plans . . . ." The "develop" compo-
nent of the "shall develop and implement" language was not a new mandate imposed by Congress on unwilling agencies, but instead a Congressional ratification of established agency practice.\textsuperscript{166} USFWS and NMFS had already been developing recovery plans on their own initiative, and had approved plans for a significant number of domestic listed species.\textsuperscript{167} Congress added the recovery planning provision at the urging of public interest groups, with the support of USFWS,\textsuperscript{168} to facilitate funding for the process and to make it mandatory rather than discretionary.\textsuperscript{169} The last sentence of the new recovery planning provision, authorizing the agencies to "procure the services" of persons outside the agency to assist in the preparation of recovery plans,

\begin{footnotesize}
\begin{enumerate}

The recovery planning concept may also have been adopted from the international wildlife preservation community. A resolution passed at the 13th North American Wildlife Conference in 1948 stated that the International Union for the Protection of Nature should set up a "Survival Service" for "the assembling, evaluation and dissemination of information on, and the study of, all species of fauna and flora that appear to be threatened with extinction, in order to assist governments and appropriate agencies in assuring their survival." Sir Peter Scott, et al., \textit{Red Data Books: The Historical Background, in The Road To Extinction} 1-2 (Richard Fitter & Maisie Fitter eds., 1987).

\item Statement of Lynn A. Greenwalt, \textit{supra} note 166. "One of the most important steps after the listing process is to establish a team of experts from the Federal, State and private sectors to draft coordinated plans for restoration of endangered and threatened species . . . . There are presently 59 recovery teams with the responsibility for developing recovery plans for 73 priority species." \textit{Id.}

Information submitted to Congress indicated that recovery plans had been approved by the Director of USFWS for the following species:
- California Condor
- Hawaiian Waterbirds
- Columbian White-Tailed Deer
- Santa Cruz Long-Toed Salamander
- Warm Springs Pupfish
- Unarmored Threespine Stickleback
- Kirtland's Warbler
- Blue Pike
- Mississippi Sandhill Crane
- Indiana Bat


\item Telephone Interview with Milton Kaufman, President, Monitor International (June 8, 1995) (who championed the cause of recovery planning during the 1978 amendments process).

\item H.R. REP. No. 95-1804, 95th Cong., 2d Sess. 28 (1978) ("Although recovery plans are implicit in the Endangered Species Act, the act does not specifically mandate recovery plans. As a result, recovery plans have been given a low priority within the Endangered Species Act budget."); H.R. REP. No. 95-1625, 95th Cong., 2d Sess. 19 (1978).
\end{enumerate}
\end{footnotesize}
ratified the process of establishing "recovery teams" of both agency and non-agency experts.\textsuperscript{170}

The import of the "implement" component of the "shall develop and implement" language was unclear in 1978 and remains unclear today.\textsuperscript{171} However, the legislative history of the 1978 amendment did not demonstrate Congressional intent that recovery planning become one of the foci of species protection. USFWS testimony suggested that plans might only be necessary for those species "not able to recover solely from the automatic protection benefits accorded by sections 7 and 9."\textsuperscript{172} It seems unlikely that, in 1978, Congress or the agencies perceived mandatory implementation of recovery plans as a new pillar of species protection.

Neither the 1978 amendments nor the original Endangered Species Act defined the word "recovery," although the term has subsequently been defined by regulation.\textsuperscript{173} However, for practical purposes recovery is defined by reference to another term, "conservation," included in the new recovery planning provision.\textsuperscript{174} The original 1973 Act defined "conservation" as the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."\textsuperscript{175}

The term "conservation" serves a variety of purposes in the Endangered Species Act. Congress wove "conservation" into its statement of the overarching intent of the Act:

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 . . . .\textsuperscript{176}

\textsuperscript{170} The Recovery Team/Recovery Plan status table attached to the statement of Assistant Secretary Herbst shows that USFWS had been approving the constitution of recovery teams since at least 1974 (Marva Red Squirrel Recovery Team), and that 59 recovery teams had been approved. Endangered Species Act Authorization: Hearings Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment, Comm. on Merchant Marine and Fisheries, 95th Cong., 2nd Sess. 112, 128-33 (1978) (statement of Robert L. Herbst, Assistant Secretary for Fish and Wildlife and Parks, Dep't of the Interior).

\textsuperscript{171} See infra discussion part V.A.2.

\textsuperscript{172} Statement of Lynn Greenwalt, supra note 166, at 8.

\textsuperscript{173} See infra part II.B.

\textsuperscript{174} Arguably, the word "survival" should play an equally large role in defining the goals of recovery. It does not for two reasons. First, "conservation"—returning a species to health—must insure survival and therefore logically incorporates the term. Second, neither the Endangered Species Act nor the USFWS regulations promulgated under it define survival. USFWS has declined to adopt a regulatory definition of survival. 51 Fed. Reg. 19,926 at 19,934 (1986).

\textsuperscript{175} 87 Stat. 885 (1973).

\textsuperscript{176} Id. (emphasis added).
The definition of "conservation" also provides the substantive element for the "duty to conserve" imposed on all federal agencies under section 7.\textsuperscript{177} Finally, the definition implicitly establishes a goal of delisting species, which will be incorporated in regulatory definitions of recovery.

\textbf{B. 1986 Regulatory Definition}

The simple recovery planning mandate embodied in the 1978 amendment gained some additional definition and complexity through administrative action. Initially in 1978, and again in 1986, USFWS and NMFS jointly promulgated regulations defining "recovery."\textsuperscript{178} The regulations provide:

"Recovery" means improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the Act.\textsuperscript{179}

These regulations define "recovery" in terms of "delisting" and throw the reader back on the amorphous standards for the listing of species in section 4(a)(1).\textsuperscript{180} In response to comments, the 1986 regulations offer more guidance:

[T]he Service has modified the definition of "recovery" to make it clear that recovery is not attained until the threats to the species as analyzed under section 4(a)(1) of the Act have been removed. The protective measures provided for listed species under the Act are no longer needed if endangered or threatened status is no longer applicable to a species under section 4(a)(1).\textsuperscript{181}

Although these regulations did little more than make explicit a definition of recovery implicit in the statutory definition of conservation, they are evidence of the growing legal importance of recovery planning. In addition, the new regulations made clear that recovery of populations sufficient for delisting was the avowed goal of the recovery planning process.

\begin{itemize}
\item \textsuperscript{177} See supra part I.B.2.
\item \textsuperscript{178} 51 Fed. Reg. 19,926 (1986).
\item \textsuperscript{179} 50 C.F.R. § 402.02 (1994). This definition elaborated slightly on a 1978 pre-recovery planning section definition of recovery included in an earlier set of joint USFWS/ NMFS regulations:
\item \textsuperscript{180} See discussion supra part I.A.1.
\item \textsuperscript{181} Interagency Cooperation—Endangered Species Act of 1973, as Amended; Final Rule, 51 Fed. Reg. 19,926 at 19,935 (1986).
\end{itemize}
C. 1988 Amendments to the Endangered Species Act

In 1988, Congress showed new interest in recovery planning. The otherwise unremarkable 1988 reauthorization of the Endangered Species Act added new procedural requirements for recovery planning that significantly expanded the recovery mandate. While the general obligation to "develop and implement" plans remained unchanged, Congress directed USFWS and NMFS to "give priority to those endangered species or threatened species that are most likely to benefit from such plans, particularly those species that are, or may be, in conflict with construction or other development projects or other forms of economic activity."

Further, Congress required that each plan contain:
(i) a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;
(ii) objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list; and
(iii) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

Finally, Congress required the agencies to "provide public notice and an opportunity for public review and comment" on each "new or revised" recovery plan, and required the agencies to "consider" all information presented during the public comment period.

These changes, along with their legislative history and associated documents, memorialized two streams of thought about recovery planning and the recovery planning process: a general sense that recovery planning is a good idea, and a general sense that the agencies charged with doing it were not doing it adequately. Everyone from the Director of USFWS to representatives of the Environmental Defense Fund and the Colorado Water Congress agreed that recovery planning was beneficial. The list of benefits ascribed to recovery planning included "assisting state and federal agencies in planning

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183. Id. at 2307.
184. Id.
185. Id.
188. Id. at 135 (statement of Tom Pitts, Project Coordinator for Colorado Water Congress Special Project on Threatened and Endangered Species).
land management activities, prioritizing tasks, and justifying certain annual appropriations"; "identifying important research needs for state and federal agencies"; "stabilizing populations of threatened and endangered species considered to be 'threshold' before they become critically endangered"; "providing authoritative and sometimes unique scientific source documents for use by researchers"; and authorizing experimental reintroduction of species. Statements made by USFWS Director Frank Dunkle and NOAA Assistant Administrator William Evans, recounting programmatic initiatives relating to reintroduction of the Red Wolf, requiring turtle excluders in shrimp nets in the Gulf of Mexico, and limiting human activity in the habitat of the Hawaiian monk seal suggest that the agencies charged with protecting species felt that the recovery planning provision gave them flexible authority to take actions prospectively rather than reacting to specific violations or potential violations of the other provisions of the Act.

Congressional dissatisfaction centered around the agencies' failure to prepare recovery plans for one-third of domestic species, and a perceived agency bias in favor of more charismatic higher forms of life as opposed to more modest species that might benefit dramatically from relatively low-cost recovery activities. The Senate version of the reauthorization bill required USFWS and NMFS to report to Con-

189. Id. at 159 (statement of Christopher Meyer, National Wildlife Federation).
190. Id.
191. Id.
192. Id.
194. Id. at 123 and 4-6.

Certainly, the costs of recovery actions for some species, such as the California condor and whooping crane, are much greater than for other species such as the small whorled pogonia. However, relatively small investments of resources for the small whorled pogonia and many other species have the potential of yielding large returns. For example, the cost of writing a recovery plan for the small whorled pogonia is estimated by the Fish and Wildlife Service to be about $1000. Currently, so little is known about the distribution and population size of the plant species that the major recovery activities that need to be implemented are simply monitoring and conducting habitat inventories to determine the extent of its range. If, through these inventories, significant numbers of new populations can be found, it may be possible to reclassify the species as threatened or remove it from the list altogether.

Id. This discussion illustrates the very flexible nature of the concept of recovery planning activities and anticipates much of the reasoning behind Secretary of the Interior Babbitt's Biological Service. See generally NATIONAL RESEARCH COUNCIL, A BIOLOGICAL SURVEY FOR THE NATION (1993).
gress annually on their process in preparing and implementing recovery plans. The conference committee on the bill reduced that requirement to once every two years.\textsuperscript{197}

The congressional analysis was confirmed in a report issued by the United States General Accounting Office (GAO).\textsuperscript{198} Although the GAO report was not distributed until after the 1988 amendments had been signed into law, it echoed and verified many of the concerns expressed in the legislative history, including agency bias for recovery planning for species with high public appeal (as opposed to species that could benefit significantly from recovery planning),\textsuperscript{199} and agency failure to prepare recovery plans for a large number of domestic species.\textsuperscript{200} The GAO report also identified repeated agency failure to implement recovery tasks required by approved recovery plans and an agency failure to track recovery efforts.\textsuperscript{201} The GAO report contained eighteen case studies of species, sixteen of which were the subject of approved recovery plans. GAO estimates that “[o]nly about half of the tasks identified in the approved plans had been initiated even though the plans had been approved for an average of 4 years.”\textsuperscript{202}

The recovery implementation gap identified in the 1988 GAO report demonstrated a failure to comply with the “shall . . . implement” language in the statute, and illustrated a danger in the recovery planning structure often obscured by the generally shared positive attitude towards the idea of recovery planning. Preparing a recovery plan now presents an implementing agency with a list of tasks to complete to promote recovery. However, Congress did nothing in the 1988 amendments to allow third parties to force the agency to undertake those tasks on any particular timeline.\textsuperscript{203}

\textbf{D. 1989 USFWS Guidelines for Planning and Coordinating Recovery of Endangered and Threatened Species}

Neither the Endangered Species Act nor agency regulations set forth specific requirements for recovery plan development and implementation. However, both USFWS and NMFS periodically prepare guidance documents to assist in recovery planning. In 1989, USFWS published detailed guidelines for recovery planning that reflected recovery planning's new prominence after the 1988 amendments to the

\begin{itemize}
\item \textsuperscript{197} H.R. REP. No. 928, 100th Cong, 2d Sess. 21, 1988 U.S.C.C.A.N. 2738, 2739.
\item \textsuperscript{198} \textit{UNITED STATES GENERAL ACCOUNTING OFFICE, MANAGEMENT IMPROVEMENTS COULD ENHANCE RECOVERY PROGRAM} (Dec. 1988).
\item \textsuperscript{199} \textit{Id.} at 23-25.
\item \textsuperscript{200} \textit{Id.} at 23-25.
\item \textsuperscript{201} \textit{Id.} at 25-26.
\item \textsuperscript{202} \textit{Id.} at 4.
\item \textsuperscript{203} \textit{See} discussion \textit{infra} part V.
\end{itemize}
Endangered Species Act and responded to the GAO's criticism. The new guidelines demonstrate that USFWS was of two minds about the future of the recovery planning process. While wishing to make recovery planning a more significant part of efforts to protect species, USFWS also wished to limit the potential of the process to force or constrain agency action.

The guidelines define recovery as follows:

Recovery is the process by which the decline of an endangered or threatened species is arrested or reversed, and threats to its survival are neutralized, so that its long-term survival in nature can be ensured. The goal of this process is the maintenance of secure, self-sustaining wild populations of species with the minimum necessary investment of resources.

This is a strong statement about the goal of the recovery planning process—"ensuring" long-term survival of a species in the wild. This goal appears to conform with the regulatory definition of recovery: "improvement in the status of listed species to the point at which listing is no longer appropriate."

The guidelines also make clear that the measurable "objective" of the recovery plan is central to its effectiveness:

The brevity and apparent simplicity of the recovery objective section is quite deceptive. Quantifying recovery criteria calls for creative thought, and developing the criteria may require educated guesswork. This may be difficult for scientists accustomed to basing their statements on hard data rather than conjecture. However, Plan authors should keep in mind that concise and measurable criteria are necessary; they represent the central pillar of the Recovery Plan.

Yet, the guidelines indicate that "recovery"—ensuring long-term survival or warranting delisting—need not be the objective of the recovery plan. In advising drafters of recovery plans as to appropriate objectives, the guidelines state: "choose among delisting, downlisting or indefinite protection of existing populations. Be ambitious, but do not set an unobtainable objective." The guidelines indicate that minimum viable population concepts "may prove useful" in developing recovery objectives, but do not require the objective to include a demonstrably viable population.

205. Id. at 2.
206. 50 C.F.R. § 402.02 (1994).
208. Id. at I-5.
209. Id. at I-14.
The guidelines recognize the importance of implementing recovery plans, noting that "[a] Recovery Plan benefits a species only if it is implemented," and indicating that the "implementation schedule" is "the most important section, the 'nuts and bolts' of the Recovery Plan," but the guidelines provide no mechanism to ensure that implementation actions are carried out.

In 1992, NMFS published its guidelines for recovery planning. Although structured in ways similar to the USFWS guidelines, the NMFS guidelines indicate that "recovery" is the "overall objective" of all recovery plans.

III
THE USES OF RECOVERY

Soon after the addition of the Recovery Planning Section to the Endangered Species Act in 1978, the recovery planning process and the concept of recovery began to play a role in legal actions enforcing the Act, a role distinct from any actual recovery planning. Recovery plans and the deliberations of recovery teams have influenced courts and agencies in two distinct ways. First, recovery plans have proved a convenient source of evidence for courts to use in reasoning their way through the complex biological problems presented in endangered species litigation. Second, the concept of recovery has played a role in courts' interpretation of the Act's other provisions, filling out the meaning of important terms when their application to particular fact situations is not clear.

A. The Recovery Perspective: The Evidentiary Function

One of the most important uses of the recovery planning process is as a source of evidence: the requirement that USFWS and NMFS develop recovery plans has generated a great deal of information about endangered species in a form accessible to judges. Not surprisingly, courts have turned to recovery plans for background information on the cases that come before them. Judges have also looked to the recovery planning process for guidance because of its perceived reliability and have shown significant deference to the judgments of recovery teams.

The Palila is a finch-billed member of the Hawaiian Honey-Creeper family of birds. It was listed as an endangered species in 1967 under a predecessor to the 1973 Endangered Species Act. The Palila recovery team, including wildlife biologists for the Hawaii Department of Land and Natural Resources and an independent biologist for the University of Hawaii, had been appointed by USFWS prior to the passage of the 1978 amendments. The Palila Recovery Plan had been approved by USFWS in January 1978.

The only remaining population of the Palila lives in a remnant of mamane-naio forest on the slopes of Mauna Kea on the island of Hawaii. The Palila depends on that mamane forest for food, shelter, and nest sites. In 1979, the Palila shared that habitat with a population of feral sheep and goats maintained by the Hawaii Department of Land and Natural Resources for sport hunting. The sheep and goats browsed on the seedlings and shoots of the mamane trees, preventing them from growing into the mature trees the Palila requires for shelter. The Palila “itself,” the Sierra Club, and the Audubon Society sued to obtain an order to force the removal of the sheep and goats.

Judge Samuel King of the United States District Court for the District of Hawaii held that the maintenance of the feral sheep and goats in the Palila habitat was a “taking” of the Palila within the meaning of section 9(a)(1) of the Act. In reaching its conclusion, the court twice relied explicitly on the findings of the Palila recovery team and recovery plan in resolving the dispute about the complex interaction between the Palila, the forest, and the feral sheep and goats. First, the court turned to the recovery plan for information on the Palila’s survival prospects:

Defendants argue that no one can state for certain that the Palila cannot survive without the mamane. However, all the evidence presented points to the fact that the Palila cannot survive without the forest . . . .

213. 471 F. Supp. 985 (D. Haw. 1979) [hereinafter Palila], aff’d, 639 F.2d 495 (9th Cir. 1981).
214. Under the Endangered Species Preservation Act of 1966, the Secretary of the Interior was to publish the names of “native fish and wildlife found to be threatened with extinction . . . .” LITTEL, supra note 23, at 15-16.
216. Id.
217. Id. at 989-90.
218. The plaintiff’s complaint listed the Palila as a party, and stated “[p]laintiff Palila has no voice of its own, and it therefore brings this action by its next friends, plaintiffs Sierra Club, National Audubon Society, Hawaii Audubon Society and Alan C. Ziegler.” Complaint for Declaratory and Injunctive Relief, Palila v. Hawaii Dep’t of Land and Natural Resources, Civil No. 78-0030 (filed Jan. 27, 1978) at par. 5.
Second, the court relied on the recovery plan to determine what the Palila needed to survive:

There are doubtless other factors . . . which prevent the regeneration of the mamane forest . . . . However, the Palila Recovery Team is convinced that stopping destruction of the forest by feral sheep and goats would solve 90 percent of the problem.220

On appeal, the Ninth Circuit affirmed the Palila holding.221 Again, the court relied on the Palila Recovery Plan:

A Palila Recovery Team was established pursuant to the Act to study the bird and devise a plan to save it from extinction . . . . The product of the team’s work, the Palila Recovery Plan, was officially approved by the U.S. Fish and Wildlife Service and led to the establishment of the bird’s critical habitat. The plan concluded that the eradication of the sheep and goats was necessary to achieve the regeneration of the forest and restoration of the Palila.222

The recovery planning process played a similar role in Hogan v. Brown, a 1981 case from the United States District Court for the District of Arkansas. In challenging the condemnation of land for the purpose of establishing a national wildlife refuge, plaintiffs asserted that the national wildlife refuge plan would have an adverse effect on endangered Red-Cockaded Woodpeckers. The court dismissed the claim on the ground that the plan called for an 80-year timber rotation to provide old trees for the bird and that this exceeded the requirements of the Red-Cockaded Woodpecker Recovery Plan.223 The court thereby side-stepped the issue of the actual biological requirements of the species—a subject which would become the central issue in later cases involving the Red-Cockaded Woodpecker.224 As in the

220. Id. at 990 n.13.
221. Palila v. Hawaii Dep’t of Land and Natural Resources, 639 F.2d 495 (9th Cir. 1981).
222. Id. at 496.
223. 507 F. Supp. 191, 201 (W.D. Ark. 1981) (“The contention has been made that this project will have an adverse effect on the red-cockaded woodpecker . . . . To further assure conservation of the red-cockaded woodpecker, the Felsenthal [national wildlife refuge] timber management plan provides for an 80-year rotation in the pine stands in 10,000 acres. Furthermore, the hardwood growth under the pines will be controlled. These measures not only meet but exceed the recommendations of the red-cockaded woodpecker recovery team.”).
224. See Sierra Club v. Lyng, 694 F. Supp. 1260 (E.D. Tex. 1988), aff’d in part, vacated in part, Sierra Club v. Yeutter, 926 F.2d 429 (5th Cir. 1991). In Sierra Club v. Yeutter, much controversy revolved around the defendants’ failure to comply with the Forest Service Wildlife Habitat Management Handbook chapter for the Red-Cockaded Woodpecker. Those habitat management guidelines were based on the standards in the recovery plan discussed in Hogan. See Region 8 Forest Service Timber Purchasers v. Alcock, 993 F.2d 800, 803 (11th Cir. 1993) (“The Endangered Species Act requires the Forest Service, in consultation with the Fish and Wildlife Service, to ensure that its actions are not likely to jeopardize the continued existence of any endangered species . . . . To discharge this obligation, in 1985 the Forest Service completed a Woodpecker Chapter for its Wildlife Habitat
first *Palila* cases, the recovery planning process generated documents perceived as reliable by the court.\(^{225}\)

In 1985, the Palila once again “wing[ed] its way into the federal court as a plaintiff in its own right,”\(^{226}\) and for a second time, the Palila recovery planning process played an important evidentiary function. While the feral sheep and goats which had been causing problems in 1979 had been removed under an earlier court order, non-native Mouflon Sheep were now eating Palila habitat. After a hearing on the effects of Mouflon Sheep on Palila habitat,\(^ {227}\) the court held that the Mouflon Sheep, like the feral sheep and goats before them, were harming the Palila.\(^ {228}\) As with the first round of Palila cases, the finding of the recovery team and recovery plan played a significant evidentiary function: three of plaintiffs’ six witnesses at the evidentiary hearing were members of the Palila recovery team.\(^ {229}\) The court relied on the Palila Revised Recovery Plan for information on the Palila population\(^ {230}\) and, despite the fact that the population levels were “somewhat” higher than they had been in 1979, accepted conclu-

\(^{225}\) Not coincidentally, both of these cases involved situations in which no section 7(a)(2) consultation had taken place and therefore the government had produced no biological opinion on which a court could rely. Section 7(b) of the post-1978 Endangered Species Act requires a written opinion from USFWS or NMFS as to the effect of the project under consultation on protected species. This written document, although not binding on the action agency, becomes the scientific statement of the government’s position in the case. See, e.g., Pacific Rivers Council v. Thomas, 30 F.3d 1050 (9th Cir. 1994) (enjoining agency action in the absence of a biological opinion), *cert. denied*, 115 S. Ct. 1793 (1995); Sierra Club v. Yeutter, 926 F.2d 429 (5th Cir. 1991) (government argues insufficient deference given to biological opinion). The three significant pre-1978 section 7 cases, Sierra Club v. Froehlke, 392 F. Supp. 130 (E.D. Mo. 1975), *aff’d*, 534 F.2d 1289 (8th Cir. 1976); National Wildlife Fed’n v. Coleman, 400 F. Supp. 705 (S.D. Miss. 1975), *rev’d*, 529 F.2d 359 (5th Cir.), *cert. denied*, 429 U.S. 979 (1976); Tennessee Valley Auth. v. Hill, 419 F. Supp. 753 (E.D. Tenn. 1976), *rev’d*, 549 F.2d 1064 (6th Cir. 1977), *aff’d*, 437 U.S. 153 (1978), held hearings on these biological issues. Interestingly, the courts in *Coleman* and *Froehlke* make no reference to recovery plans or recovery teams despite the fact that USFWS testimony to Congress in 1979 suggests that such teams were active while those cases were being litigated.

\(^{226}\) Palila v. Hawaii Dep’t of Land and Natural Resources, 852 F.2d 1106, 1107 (9th Cir. 1988).

\(^{227}\) Palila v. Hawaii Dep’t of Land and Natural Resources, 649 F. Supp. 1070, 1072 n.3.

\(^{228}\) The mouflon sheep had also been present in Palila habitat at the time environmentalists filed the first Palila case 1978. In 1978, a study was underway to determine the effect of Mouflon Sheep on Palila habitat. In deference to the author of that study, plaintiffs in the first Palila case specifically excluded Mouflon Sheep from their prayers for relief. 649 F. Supp. at 1071-72.

\(^{229}\) *Id.* at 1072 at n.3.

\(^{230}\) *Id.* at 1073 n.7.
sions of the recovery experts that the population was static or declining.231

Courts have continued to rely on recovery plans as evidence in more recent Endangered Species Act cases. In the Spotted Owl litigation of the early 1990s, recovery planning played only a marginal role.232 However, the recovery planning process played a more significant role in two cases involving protection of the Grizzly Bear population remaining in the Northern Rocky Mountains.

Like the Red-Cockaded Woodpecker, the Northern Spotted Owl is an old-growth-dependent species, an inhabitant of the "ancient forests" of the Pacific Northwest and a victim of the reduction of those forests to tree farms. Despite significant evidence of extinction risk in the 1980s, USFWS did not list the Northern Spotted Owl as a threatened species until effectively ordered to do so by a federal district court.233 Accordingly, the recovery planning process came into play relatively late in the controversy. In May 1991, when Judge Dwyer of the United States District Court for the Western District of Washington issued his historic injunction prohibiting additional timber sales in Northern Spotted Owl habitat on national forest land, the Northern Spotted Owl Recovery Team had not yet produced a plan.234 In April 1992, the Northern Spotted Owl Recovery Team produced a draft recovery plan calling for the preservation of 7.5 million acres of owl habitat.235 Then-Secretary of the Interior Manuel Lujan almost immediately disowned the recommendation as too protective.236

The Forest Service adopted an environmental impact statement for logging on national forest land in January 1992. The statement incorporated the recommendations of the May 1990 Interagency Scientific Committee ("ISC") in an attempt to allow timber sales to con-

231. Id. at 1073.

232. For an excellent discussion of the spotted owl controversy up to 1992, see Alyson C. Flournoy, Beyond the "Spotted Owl Problem": Learning From the Old-Growth Controversy, 17 Harv. Envtl. L. Rev. 261 (1993).

233. Northern Spotted Owl v. Hodel, 716 F. Supp. 479, 483 (W.D. Wash. 1988) (after holding the USFWS decision not to list the owl arbitrary and capricious, the court ordered that "[i]n deference to the Service's expertise and its role under the Endangered Species Act, the Court remands this matter to the Service, which has 90 days from the date of this order to provide an analysis for its decision that listing the northern spotted owl as threatened or endangered is not currently warranted."). The owl was finally listed as threatened in 1990. 55 Fed. Reg. 26,114 (1990).


continue. The Seattle Audubon Society challenged the ISC recommendations in court and effectively used research prepared for the Northern Spotted Owl Recovery Team to show that the 1990 ISC report was significantly out of date in its assessment of Northern Spotted Owl demography.237

The Endangered Species Act has protected the Grizzly Bear since 1975, when USFWS listed the populations in the lower 48 states as threatened.238 The Grizzly Bear once roamed across most of the western United States. Between 1804 and 1806, during their travels to the Pacific and back, Lewis and Clark and their party encountered and shot a large number of grizzlies.239 The real threat the bears posed to humans and their livestock led to the bear’s systematic extermination across the American West.240 By 1975, the bear only persisted in a handful of isolated populations, the largest in the northern continental divide ecosystem including Glacier National Park and surrounding Indian reservations and national forests (including the Flathead National Forest), the second largest in Yellowstone National Park and its environs.241

In Resources Limited v. Robertson, the Ninth Circuit ordered the Forest Service to reconsult with USFWS on the effect of the national forest plan for Flathead National Forest on the Grizzly Bear.242 The Forest Service had consulted earlier and received a “no jeopardy” biological opinion under Section 7(a)(2). However, that opinion had


238. 50 C.F.R. 17.11 (1994).


The government trapper who took the grizzly knew he had made Escudilla safe for cows. He did not know he had toppled the spire off an edifice a-building since the morning stars sang together. The bureau chief who sent the trapper was a biologist versed in the architecture of evolution, but he did not know that spires might be as important as cows. He did not foresee that within two decades the cow country would become tourist country, and as such have greater need of bears than of beefsteaks.

The Congressmen who voted money to clear the ranges of bears were sons of pioneers. They acclaimed the superior virtues of the frontiersman, but they strove with might and main to make an end of the frontier.

We forest officers, who acquiesced in the extinguishment of the bear, knew a local rancher who had plowed up a dagger engraved with the name of one of Coronado’s captains. We spoke harshly of the Spaniards who, in their zeal for gold and converts, had needlessly extinguished the native Indians. It did not occur to us that we, too, were the captains of an invasion too sure of its own righteousness.


242. 35 F.3d 1300 (9th Cir. 1994).
been contingent on the Forest Service's adoption of specific "Grizzly Guidelines." The Forest Service argued that it was not required to adhere to the guidelines because the guidelines provided for the Grizzly's recovery. The court used the language of the Grizzly Bear Recovery Plan to establish that USFWS had required the guidelines to prevent extinction.  

The Grizzly Bear Recovery Plan also played an evidentiary function in supporting a federal district court decision issuing a preliminary injunction against Grizzly Bear hunting authorized by USFWS regulations.

IV

RECOVERY AS A GOAL: THE INTERPRETIVE FUNCTION

It seems logical that the recovery planning process would provide useful evidence for courts presented with complex scientific issues. The other main function of recovery planning is less obvious. In several Endangered Species Act cases, the concept of recovery has provided guidance in interpreting other terms of the Act. The concept of recovery has been incorporated into the legal definitions of "taking," "jeopardy," and "critical habitat," and it has been used as a tool for understanding their application to specific fact situations. The concept of recovery has provided courts with an interpretive key, linking the terms of the Act with its purpose: the conservation of species and the ecosystems on which they depend.

A. The Section 9 Taking Prohibition

The definition of "take" and the scope of section 9's taking prohibition have been hotly contested issues in recent Endangered Species

243. The Forest Service set out management techniques for the grizzly bear in the "Grizzly Guidelines." Though the FWS made its "no jeopardy" conclusion contingent on adherence to the Guidelines, and the Regional Forester was directed to amend the Plan to be consistent with the Guidelines, the Forest Service still argues that the Guidelines are somehow optional because they are not necessary for survival of the grizzly, just for recovery. According to the Grizzly Bear Recovery Plan, application of these Guidelines to the Northern Continental Divide Ecosystem is necessary "to prevent extinction" of the species. Id. at 1304 n.3 (emphasis in original).

244. Fund for Animals v. Turner, No. 91-2201, 1991 WL 206,232 (D.D.C. Sept. 27, 1991). USFWS defended its 1986 hunting regulation on the ground that it was necessary to reduce Grizzly Bear population pressures in the Northern Continental Divide Ecosystem (NCDE). The court used the 1982 Grizzly Bear recovery plan to dismiss this argument: [I]t appears unlikely that the explanations offered by FWS provide a rational basis for concluding that population pressures in the sense intended by Congress existed in the NCDE as of 1986 . . . . [T]he FWS's 1982 recovery plan for the grizzly bear states that there is no evidence to indicate that numbers of grizzly bears in the [NCDE] are increasing. When the added stress of increasing habitat encroachment by increasing numbers of people is considered, the trend may be a decreasing population and the need for action is obvious.

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Act litigation. The recovery concept played a role in setting the terms of that debate. In _Palila v. Hawaii Department of Land and Natural Resources (Palila II)_ , the 1986 decision requiring the removal of Moufflon Sheep from Palila habitat, recovery planning became something more than a device for sorting out causation in complex species protection cases. In that case, the court used the concept of recovery to interpret the section 9 taking prohibition. The court defined the term “harm,” one of the terms incorporated in the definition of “take,” to include harm to recovery prospects:

A finding of “harm” does not require death to individual members of the species; nor does it require a finding that habitat degradation is presently driving the species further toward extinction. *Habitat destruction that prevents the recovery of the species by affecting essential behavioral patterns causes actual injury to the species and effects a taking under section 9 of the [Endangered Species] Act.*

On appeal, the Ninth Circuit affirmed the _Palila II_ holding without reference to recovery plans or teams. The circuit court explicitly avoided the issue of whether harm to recovery prospects constituted a taking.

In 1994 and 1995, the Ninth Circuit was again presented with the question whether habitat destruction that prevents recovery of a species could be a taking for purposes of section 9. Twice more that court declined to rule on the issue. However, in both cases, the court suggested a recovery-oriented outcome.

In _National Wildlife Federation v. Burlington Northern Railroad_ , the Ninth Circuit held that Grizzly Bear mortalities resulting from collisions with Burlington Northern trains constituted prohibited section 9 takings when the bears were on the railroad tracks as a result of Burlington Northern grain spills. The court declined to issue an injunction requiring modification of Burlington Northern operations. In that case plaintiffs, relying on _Palila_ , asserted that the grain spill constituted an ongoing habitat taking. The court rejected the argument, but not without suggesting the possibility that harm to recovery prospects might constitute a taking:

Our holding in _Palila II_ was based on an interpretation of the Secretary’s definition of harm, which reads: “harm” in the definition of “take” in the Act means an act which actually kills or injures wildlife.

245. See infra notes 247-60 and accompanying text.
248. _Palila v. Hawaii Dep’t of Land and Natural Resources_, 852 F.2d 1106 (9th Cir. 1988).
249. Id. at 1110.
250. 23 F.3d 1508 (9th Cir. 1994).
Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairs essential behavioral patterns, including breeding, feeding or sheltering. . . . Thus, in order to reach a similar finding of harm using our Palila II analysis, the NWF would have to show significant impairment of the species' breeding or feeding habits and prove that the habitat degradation prevents, or possibly, retards, recovery of the species.251

In Forest Conservation Council v. Rosboro Lumber Co.,252 the Ninth Circuit reversed a district court decision dismissing a citizen suit seeking to prevent logging in Northern Spotted Owl habitat. The court held that the purpose of the Endangered Species Act authorized citizen suits to prevent prospective harm. Plaintiffs argued that habitat modification preventing recovery constituted "harm" within the meaning of the taking prohibition. The district court rejected that argument. The Ninth Circuit found it unnecessary to rule on the issue, but it provided some interesting clues to its thinking:

The district court ruled that a claim of prospective injury is actionable only if the challenged action threatened the protected species with extinction. The court concluded that habitat modifications that merely retard species recovery are not proscribed by the ESA. Although our case law suggests a contrary view we need not decide this issue because [plaintiff] has proffered sufficient evidence to show that Rosboro's habitat modification would actually injure the Swartz Creek [spotted] owl pair by significantly impairing their essential behavioral patterns. . . . Habitat modifications that significantly impair a protected species' essential behavioral patterns are explicitly proscribed [by section 9].253

Judge King's inclusion of harm to recovery prospects within the definition of "harm" for purposes of establishing a section 9 taking in Palila and the Ninth Circuit's implicit adoption of that analysis recognize a relationship between the substantive, enforceable section 9 taking prohibition and the concept of recovery. However, it is not clear how the Ninth Circuit's recognition of the link between taking and recovery might be limited by the Supreme Court's 1995 decision in Babbitt v. Sweet Home Chapter of Communities for a Great Oregon.254

Sweet Home involved a challenge to a USFWS regulation defining the word "harm" within the definition of "take." USFWS defined harm to include "an act which actually kills or injures wildlife" by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.255 The Court of Appeals for the District of Co-

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251. Id. at 1512-13 (emphasis added) (citations omitted).
252. 50 F.3d 781 (9th Cir. 1995).
253. Id. at 788.
255. 50 C.F.R. § 17.3 (1994).
lumbia invalidated the regulation as beyond the scope of the statute, creating an obvious conflict with the Ninth Circuit, which had interpreted the regulation expansively in the Palila cases.

Although the Sweet Home decision upheld the regulatory definition of harm, the Court did not explicitly consider the link between the concept of recovery and the section 9 taking prohibition. A focus on recovery could have provided an additional basis for the Court's decision, and could have addressed some of the concerns expressed in Justice O'Connor's concurring opinion. The Supreme Court upheld the regulation on the basis of the dictionary definition of "harm," the broad species protection purposes of the Act, and the Act's legislative history. Justice O'Connor, concerned about the potential reach of the language of the regulation, concurred subject to two understandings—that the regulation's application is limited to significant habitat modification that causes actual death to identifiable protected animals, and that its application is limited by principles of proximate causation:

Proximate causation is not a concept susceptible of precise definition . . . . It is easy enough, of course, to identify the extremes. The farmer whose fertilizer is lifted by tornado from tilled fields and deposited miles away in a wildlife refuge cannot, by any stretch of the term, be considered the proximate cause of death or injury to protected species occasioned thereby. At the same time, the landowner who drains a pond on his property, killing endangered fish in the process, would likely satisfy any formulation of the principle . . . . Proximate causation depends to a great extent on considerations of the fairness of imposing liability for remote consequences. The task of determining whether proximate causation exists in the limitless fact patterns sure to arise is best left to lower courts. But I note, at the least, that proximate cause principles inject a foreseeability element into the statute, and hence, the regulation . . . . In my view, then, the "harm" regulation applies where significant habitat modification, by impairing essential behaviors, proximately (foreseeably) causes actual death or injury to identifiable animals that are protected under the Endangered Species Act.

Although Justice O'Connor's desire to find a principle that would limit the reach of the harm regulation is reasonable, her use of proximate cause creates conceptual difficulties because it is difficult to apply to the varied biological requirements of endangered species. On one hand, Justice O'Connor directly attacks the Ninth Circuit's interpretation of the "harm" regulation in the Palila cases because allowing sheep to graze on memane-naio seedlings did not cause foreseeable harm to identifiable birds. One the other hand, she defends the

256. 115 S. Ct. at 2412-17.
257. Id. at 2420 (emphasis added) (citations omitted).
258. Id. at 2418. ("[T]he regulation's application is limited by ordinary principles of proximate causation, which introduce notions of foreseeability. These limitations, in my
application of the harm regulation to disruptions of breeding behavior:

I do not find it as easy as JUSTICE SCALIA [in dissent] does to dismiss the notion that significant impairment of breeding injures living creatures. To raze the last remaining ground on which the piping plover currently breeds, thereby making it impossible for any piping plovers to reproduce, would obviously injure the population (causing the species' extinction in a generation). But by completely preventing breeding, it would also injure the individual living bird, in the same way that sterilizing the creature injures the individual living bird. To "injure" is, among other things, "to impair." 259

Despite this spirited defense, application of the proximate cause approach to breeding disruption does create a problem. Undeniably, the primary injury associated with breeding disruption is injury to the species itself, through reduction in population and distribution, rather than injury to the "identifiable animal" whose breeding behavior is disrupted. 260

The concept of recovery could provide the link between Justice O'Connor's "proximate cause" and the Act's purposes, particularly in the breeding context, by limiting the reach of the taking prohibition only to those breeding disruptions which would affect the recovery prospects of the species. If recovery, or at least significant progress toward recovery, is an essential element in the process of avoiding extinction, then actions that prevent recovery significantly increase the probability of extinction and violate the substantive provisions of the Act intended to prevent extinction.

view, call into question [Palila II], and with it, many of the applications derided by the dissent."

259. Id. at 2419.
260. Cf. id. at 2430 n.5 (Scalia, J. dissenting):

JUSTICE O'CONNOR supposes that an "impairment of breeding" intrinsically injures an animal because "[t]o make it impossible for an animal to reproduce is to impair its most essential physical functions and to render that animal, and its genetic material, biologically obsolete." This imaginative construction does achieve the result of extending "impairment of breeding" to individual animals; but only at the expense of also expanding "injury" to include elements beyond physical harm to individual animals. For surely the only harm to the individual animal from impairment of that "essential function" is not the failure of issue (which harms only the issue), but the psychic harm of perceiving that it will leave this world with no issue (assuming, of course, that the animal in question, perhaps an endangered species of slug, is capable of such painful sentiments). If it includes that psychic harm, then why not the psychic harm of not being able to frolic about—so that the draining of a pond used for an endangered animal's recreation, but in no way essential to its survival, would be prohibited by the Act? That the concurrence is driven to such a dubious redoubt is an argument for, not against, the proposition that "injury" in the regulation includes injury to populations of animals.
B. The Section 7 Jeopardy Prohibition

Judge King's 1986 *Palila* decision linked recovery with the definition of "harm" for purposes of defining a prohibited taking under section 9(a)(1) of the Endangered Species Act. Other cases have linked recovery with the meaning of "jeopardy" under section 7(a)(2). As mentioned above, the 1986 joint USFWS-NMFS consultation regulations defined the term "recovery." They also, despite protests to the contrary, helped link that term with the concept of jeopardy. Over the past nine years, the nature of that link has evolved to the point where, in most cases, an action that prevents "recovery" as defined by the Act is indistinguishable from an action that is likely to "jeopardize" the continued existence of a species as defined by the Act. Accordingly, harm to recovery prospects has become the central consideration in section 7(a)(2) jeopardy consultations.

This makes sense, because once a species is listed, its numbers are so small that survival is unlikely unless the population is recovered.261 As one scholar noted in 1987, discussing the jeopardy prohibition in the section 10(a) Habitat Conservation Planning context:

This distinction [between recovery and survival] must be minor, if it exists at all. A species is designated as endangered or threatened only if its numbers are already so small as to be highly vulnerable to extinction without added pressure. It is difficult to visualize a taking which would appreciably reduce the likelihood of recovery and not also increase the vulnerability of the species sufficiently to reduce the likelihood of survival.262

The June 1986 regulations explicitly recognize this connection. They define "[j]eopardize the continued existence of" as any action that would be expected 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.263 In response to commentators, the 1986 regulations added the word "both" to the definition in order to limit the impact of the inclusion of "recovery."

The proposed definitions of "destruction or adverse modification" and "jeopardize the continued existence of" received a lot of attention

261. See supra part I.A.2.
263. 50 C.F.R. § 402.02 (1994).
264. The preceding, 1978 consultation regulations had also used the term "recovery" in conjunction with the term "survival" in defining the injury necessary for a jeopardy finding. 43 Fed. Reg. 870, 875 (1978). The 1978 regulations were promulgated before the addition of the recovery planning section to the Act and the formalization of the consultation procedure.
from commentors. Both definitions contained, as did the 1978 rule, the phrase "survival and recovery" . . . .

The principal controversy involving the "jeopardy" and "destruction or adverse modification" definitions was that, under the proposed rule, to find that an action is likely to jeopardize a listed species or result in the destruction or adverse modification of critical habitat, the Service must identify detrimental impacts to "both the survival and recovery" of the listed species. The conjunction "and" was used in the 1978 rule's definitions of these phrases, but the word "both" was added by the proposed rule to emphasize that, except in exceptional circumstances, injury to recovery alone would not warrant the issuance of a "jeopardy" biological opinion.265

However, the authors of the joint regulations also admitted that in many cases there would be no real difference between the requirements of "survival" and "recovery":

The purpose of consultation is to identify conflicts between proposed Federal actions and the "jeopardy" standard of section 7(a)(2). The "continued existence" of the species is the key to the jeopardy standard, placing an emphasis on injury to a species' "survival." However, significant impairment of recovery efforts or other adverse effects which rise to the level of "jeopardizing" the "continued existence" of a listed species can also be the basis for issuing a "jeopardy" opinion. The Service acknowledges that, in many cases, the extreme threats faced by some listed species will make the difference between injury to "survival" and to "recovery" virtually zero.266

The authors also admit that the concepts of survival and recovery "are generally considered together in analyzing effects, and it is difficult to draw clear-cut distinctions."267 The responses to comments accompanying the 1986 regulations leave the impression of a spirited but futile attempt to distinguish between two concepts that are both practically and legally linked.

As time passed, and politics changed, USFWS and NMFS became more willing to admit the existence of a direct link between the injury to recovery prospects and injury to survival prospects, or jeopardy. In the January 15, 1992 designation of critical habitat for the Northern Spotted Owl,268 USFWS first used a version of the "probabilities model"-oriented language recognizing the link between survival and recovery:

Survival and recovery, mentioned in both the definition of adverse modification [of critical habitat] and jeopardy, are directly related.

266. Id. at 19,934 (emphasis added).
267. Id. at 19,934.
Survival may be viewed as a linear continuum between recovery and extinction of the species.\textsuperscript{269}

The existence of a link between jeopardy and recovery became more apparent in the 1994 opinion in \textit{Idaho Department of Fish and Game v. National Marine Fisheries Service}.\textsuperscript{270} The State of Idaho sued NMFS and a variety of other federal agencies, challenging federal approval of operation of the Federal Columbia River Power System (FCRPS) for 1993. Idaho asserted that the federal agencies had failed to insure that their activities in operating the power system were not likely to jeopardize the continued existence of the Snake River Sockeye Salmon, listed as endangered in 1991, and the Snake River Spring/Summer Chinook Salmon, listed as threatened in 1992. Intervenors in the suit, various Pacific Northwest power entities, also challenged the government operating plan, but on the ground that it was designed to achieve recovery rather than merely prevent jeopardy.

The portion of the plan that concerned intervenors was a two-part standard NMFS had developed for assessing jeopardy to Snake River salmon. The first part asked whether the proposed action would reduce salmon mortality compared to a base period of 1986-90. The second, more controversial part, asked whether "all proposed Columbia River actions [are] . . . reasonably likely to reduce salmon mortality over the long term such that populations will stabilize?"\textsuperscript{271} The NMFS standard does not assess the effect of the power operating plan in isolation, but instead, as part of a broader pattern of conduct that includes dam operations throughout the Columbia and Snake River Basins.

Intervenors challenged the standard on the ground that it did not draw a sufficient distinction between existing conditions, including dams, and future operations, and that it was designed to "recover" the listed species rather than simply prevent jeopardy. While it does not embrace a "probabilities model" for species survival, it takes a long step in that direction. The court invalidated the standard on the basis of flaws in the choice of the 1986-90 baseline. However, the court did not invalidate the general approach:

Based upon my analysis of the ESA and its legislative history, I expressly reject any attempt to impose bright-line definitions upon the hydrosystem's "existence" vs. "operations" or the terms "survival" vs. "recovery." Where section 7 consultation parameters end and section 4 recovery measures begin is not a proper matter for judicial bright-line decision making and in any event, such a distinction should not be premised upon the nature or quality of an agency activity, but instead,

\begin{itemize}
  \item \textsuperscript{269} Id. at 1822.
  \item \textsuperscript{270} 850 F. Supp. 886 (D. Or. 1994).
  \item \textsuperscript{271} Id. at 892.
\end{itemize}
pursuant to the mandate of the ESA, must focus upon the listed species.272

While announcing the absence of a clear distinction between jeopardy and recovery, the court wrapped this ambiguity within a broader concept of "jeopardy" in order to shelter the agency analysis it defended. Nevertheless, *Idaho Department of Fish and Game* clearly establishes that information about the long-term survival of a species is relevant in assessing whether an agency has violated the section 7(a)(2) jeopardy standard.

As the court noted in conclusion:

I fully recognize that stability and recovery are two distinct legal concepts under the ESA. However, in examining the circumstances that confront listed Snake River salmon—the myriad of both human-induced and natural contributions to mortality, their unique life-cycle and geographic range—the two concepts are in many instances virtually indistinguishable. Where stability ends and recovery begins is a crucial question which must be fully explored by the federal defendants in examining what changes can be made to river operations to avoid what many commentators believe will be the inevitable extinction of these species.273

In these two passages, the court virtually defines section 7 jeopardy in terms of recovery prospects. Certainly, the case establishes that information about the long-term survival of a species is relevant in assessing whether an agency has violated the section 7(a)(2) jeopardy standard. Although it remains to be seen how widely the *Idaho Department of Fish and Game* approach will be adopted, it has already been cited with approval once.274

C. Designation of Critical Habitat

Another part of the Endangered Species Act in which the concept of recovery plays a significant interpretive role is the designation of critical habitat under section 4(b)(2).275 Long dormant, the critical habitat process has recently come to life. Although the Endangered Species Act requires designation of critical habitat "concurrently" with listing of a species (absent two apparently limited exemptions),276

272. *Id.* at 895.
273. *Id.* at 900.
274. *Northwest Resources Information Center v. Northwest Power Planning Council*, 35 F.3d 1371, 1390 (9th Cir. 1994) (interpreting the terms of the Northwest Power Act as it applied to endangered salmon species).
USFWS and NMFS had designated critical habitat for only sixteen percent of listed species by September 1991. The designation of geographic areas promises to give species added protection from federally authorized actions and provide additional notice to parties who may run afoul of Endangered Species Act prohibitions. However, the designation of critical habitat requires a complex environmental and economic analysis. The concept of recovery plays a statutorily mandated role in that process.

The Endangered Species Act’s definition of critical habitat includes “(i) the specific areas within the geographical area occupied by the species at the time it is listed . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed . . . essential for the conservation of the species.”

“Conservation,” so tightly woven into the definition of critical habitat, does not focus on the survival of a species, but instead on its recovery. Therefore, although critical habitat is protected by section 7(a)(2) against adverse modification—a standard closely related to jeopardy to a species and therefore arguably survival-oriented rather than recovery-oriented—the thing protected, “critical habitat,” is defined with recovery in mind. As USFWS put it in its determination of critical habitat for four species of endangered fish on the Colorado River:

In the case of critical habitat, conservation represents the areas required to recover a species to the point of delisting (i.e., the species is recovered and is removed from the list of endangered and threatened species). In this context, critical habitat preserves options for a species’ eventual recovery . . .

The designation of critical habitat will not, by itself, lead to recovery but is one of several measures available to contribute to conservation of a species. Critical habitat helps focus conservation activities by identifying areas that contain essential habitat features . . . regardless

277. Types and Number, supra note 36, at 29.
278. The agency charged with protecting the species, USFWS or NMFS, may decide to exclude certain areas from critical habitat if, after considering the “economic impact and any other relevant impact,” it concludes the benefits of excluding an area from critical habitat outweigh the benefits of including it in critical habitat. 16 U.S.C. 1533(b)(2) (1994).
281. For a discussion of these two standards, see Houck, supra note 23, at 299.
of whether or not the areas are currently occupied by the listed species.282

In the proposed determination of critical habitat for the Delta Smelt, USFWS went even farther in linking critical habitat and recovery:

The Act's definition of critical habitat indicates that the purpose of critical habitat is to contribute to a species' conservation, which, by definition, means recovery. Section 7 prohibitions against the destruction or adverse modification of critical habitat apply to actions that would impair survival and recovery of the listed species, thus providing a regulatory means of ensuring that Federal actions within critical habitat are considered in relation to the goals and recommendations of a recovery plan. As a result of the link between critical habitat and recovery, the prohibition against destruction or adverse modification of critical habitat should protect the critical habitat's ability to contribute fully to a species' recovery. Thus, the adverse modification standard may be reached closer to the recovery end of the survival continuum, whereas the jeopardy standard traditionally has been applied nearer to the extinction end of the continuum.283

If, as USFWS asserts, the determination of critical habitat is more closely connected to recovery than to jeopardy, then recovery is a central consideration in the determination of critical habitat.

V

THE QUEST FOR ENFORCEABLE RECOVERY PLANS

Leaving aside for a moment the idea of "recovery" as the eminence grise of the Endangered Species Act—lurking behind the scenes, informing every decision—we must consider whether the recovery planning process does or should generate enforceable mandates in its own right—whether the requirements of recovery plans developed under the recovery planning section should be enforceable in court.284 The language of section 4(f) is ambiguous and the case law on the question is not definitive, but two general principles can be derived from current authority. First, USFWS and NMFS do have a duty to develop recovery plans in most circumstances. Second, they cannot be compelled to implement the specifics of a given plan. This section surveys the case law on direct enforceability of recovery plans

and discusses ways in which recovery planning requirements can be enforced through indirect means. These indirect means of enforcement offer opportunities not only to render planning requirements enforceable against federal agencies but also against other parties.

A. Direct Enforcement of Recovery Plans and Recovery Duties

Scholars and proponents of species protection have often hoped that the link between recovery planning and the “duty to conserve” might be sufficient to infuse recovery plans with Congressional purpose and make their terms directly enforceable. As one commentator noted:

Recovery plans in many ways possess the ideal characteristics to act as triggers for agencies’ duty to conserve listed species. They are prepared by experts and contain an outline of steps necessary to promote the conservation of listed species. The plans also often identify which federal agencies are responsible for carrying out specific recovery tasks. Defining agencies’ conservation duties by what is set forth in recovery plans would free the courts from sticky problems of attempting to interpret the scope of the ESA’s conservation mandate on a case-by-case basis.

Despite the potential advantage in avoiding sticky problems of case-by-case interpretation, courts generally have not been receptive to the idea of rendering recovery plans directly enforceable. At least three cases, National Wildlife Federation v. National Park Service, National Audubon Society v. Hester, and Defenders of Wildlife v. Lujan reject this idea. However, at least one court, in Sierra Club v. Lujan, has accepted the notion that broadly defined “recovery duties” are enforceable.

The language of the recovery planning section clearly imposes some duty on USFWS and NMFS to “develop” and “implement” recovery plans. Failure to discharge that duty can be a violation of law, as Sierra Club v. Lujan found. On the other hand, the language of the recovery planning section does not require that recovery plans have the force of law or that the duties they impose bind federal agencies or anyone else. If the concept of recovery is relevant for interpreting other provisions of the Endangered Species Act, it must also be relevant for interpreting the “duty to conserve” the Act imposes on federal agencies. While this may not require adherence to every

286. Rohlf, supra note 23, at 98; see also Houck, supra note 23, at 350 (“The case can be made that, since section 7(a)(1) of the ESA requires all federal agencies to ‘conserve’ endangered wildlife species, and that since the ESA defines ‘conservation’ in terms of species recovery, recovery plan elements are powerful limits, if not mandates, for agency action.”).
provision in a recovery implementation schedule, it seems absurd to assert that actions by federal agencies which actively frustrate recovery do not contravene the agencies’ duty to “utilize their authorities in furtherance of the purposes of [the Endangered Species Act] by carrying out programs for the conservation of endangered species and threatened species . . . .”288

Whether the balance between enforceable general duties to prepare recovery plans and unenforceable recovery plan requirements is adequate to conserve endangered species remains an open question. If the concept of recovery becomes an interpretive key in dealing with other provisions of the Endangered Species Act, then the law explicating the relationship between the duty to conserve and the recovery planning process will continue to develop. As it develops, the wisdom or folly of rendering recovery plans directly enforceable, through legislation if necessary, may become more clear.

1. Enforcing Recovery Plan Duties

Despite the desires of some commentators, courts have been inhospitable to rendering recovery planning duties enforceable. In three cases, courts have rejected arguments based, to a greater or lesser degree, on the enforceability of recovery plans.

In the mid-1980s, the National Wildlife Federation and the Wyoming Wildlife Federation challenged a National Park Service decision to keep the Fishing Bridge Campground in Yellowstone National Park open pending the findings of an environmental impact statement.289 The primary cause of Grizzly Bear mortality since the bear’s listing as a threatened species is human/bear contact. Because of the danger Grizzlies pose to humans, bears that become habituated to humans must often be killed.290 The location of the Fishing Bridge Campground in Grizzly Bear habitat increased the risk of bear mortality as a result of encounters between tourists and bears.

In National Wildlife Federation v. National Park Service, plaintiffs marshaled a number of arguments in support of their motion for summary judgment challenging the Park Service decision to keep the campground open. In September 1987, the U.S. States District Court for the District of Wyoming rejected those arguments.291

Plaintiffs asserted that the duty to conserve imposed on the Park Service by section 7(a)(1) required it to use “all methods” to conserve

290. Id. at 386.
291. The court relied on the fact that no bears had died as a result of human/bear interaction during the first year of operation of the campground under an interim management plan intended to reduce human/bear conflict. Id. at 389.
protected species and that this included closing the campground. The court disagreed, relying on the agency’s “discretionary powers as to methods of conservation.” 292

Plaintiffs also offered what the court terms a “related argument” that the Park Service was required to close the campground by the terms of the Grizzly Bear Recovery Plan. The court also rejected this argument.

Plaintiffs further argue that since a Grizzly Bear recovery plan was already developed, the Park Service and the Secretary [of the Interior] cannot later selectively decide which provisions to go forward with. To adopt such a position completely misconstrues congressional intent . . . . [T]he Secretary is required to develop a recovery plan only insofar as he reasonably believes that it would promote conservation. The Court will not attempt to second guess the Secretary’s motives for not following the recovery plan. 293

The court apparently relied on the discretionary power granted to USFWS and NMFS by section 4(f) in requiring the agencies to develop and implement recovery plans “unless [they] find[ ] such a plan will not promote the recovery of the species.” Because a Grizzly Bear recovery plan had already been developed, the court’s reasoning focused implicitly on the discretion of the agencies to forego implementing terms of an approved plan. The court’s analysis is not inconsistent with the language of the statute, which makes no distinction between the discretion associated with the development of recovery plans and the discretion associated with their implementation. However, the court’s reasoning appears to make the terms of recovery plans almost impossible to enforce through legal action, absent egregious conduct by the agencies charged with their implementation. 294

Courts have refused to require implementation of specific terms of recovery plans even when agency actions have directly contradicted recovery plan recommendations. In National Audubon v. Hester, the U.S. District Court for the District of Columbia upheld a USFWS decision to reverse its recovery plan policy of supporting the remaining wild population of California Condors in favor of a captive breeding strategy. 295 In Defenders of Wildlife v. Lujan, 296 the same court al-

292. Id. at 388.
293. Id. at 388-89.
294. Under the court’s reasoning in National Wildlife Federation, a plaintiff seeking to force agency implementation of a recovery plan provision would have to prevail over not one, but two, discretionary standards of review—the discretionary standard the court interprets into section 4(f) of the Endangered Species Act, and the discretionary standard applicable to the vast majority of citizen challenges to federal agency action: the Administrative Procedure Act’s “arbitrary and capricious” standard of review, 5 U.S.C. § 706(2)(a). How these “stacked” standards of review work together has not been discussed by any court of which I am aware.
allowed USFWS to delay its recovery plan schedule for reintroduction of Northern Rocky Mountain Grey Wolves.

USFWS developed a recovery plan for the endangered California Condor in 1979. The Condor is the largest North American bird. While fossil remains of Condors have been found as far east as Florida, during recent times the bird has been confined to coastal mountains along the Pacific. Lewis and Clark reported observing a Condor in Oregon.297 The Condor was last seen in Washington in 1830 and in Oregon in 1913. Once abundant in California, by 1979, its population had dwindled to a handful of birds.298 USFWS listed the Condor as an endangered species in 1967.299

The 1979 recovery plan had two components: extensive tracking and support for the few birds remaining in the wild in the Los Padres National Forest in central California, and a captive breeding program. In December 1985, faced with increased mortality among wild birds, USFWS decided to capture all the surviving wild birds and bring them into the captive breeding program.300 The National Audubon Society sued for an injunction preventing capture of the remaining wild Condors. The Audubon Society obtained a preliminary injunction preventing the capture for the U.S. District Court for the District of Columbia.301 The district court found that USFWS had failed adequately to justify its departure from former policy—including the 1979 recovery plan.302

298. According to the District Court:

There are at the present 26 Condors in existence; five continue to live in the wild, and 21 are held by the Los Angeles Zoo and the San Diego Wild Animal Park. Before the winter of 1984-85, there were 15 birds in the wild, but during that winter six of the birds perished from as yet unknown causes. Later in the spring of 1985, three of the remaining nine Condors were captured. The death of the bird designated AC-3 on January 18, 1986 left a population of only five wild Condors.


302. The Court stated:

In December 1979, a consortium of governmental and private groups joined in a Captive Recovery Program designed to work toward and ensure the preservation and the continued survival in the wild of the California Condor. Included in that group are FWS, Audubon, the California Department of Fish and Game, the United States Forest Service, and the Bureau of Land Management. FWS
The Court of Appeals reversed without mentioning the recovery plan:

We believe the Wildlife Service's decision to capture the remaining wild condors was manifestly defensible . . . . Contrary to the plaintiff's assertion, the decision was not markedly at odds with previous policy. In its October Environmental Assessment, while endorsing the maintenance of a small wild flock, the Service had recognized that there were weighty arguments to the contrary and that the question was close; it noted that "if the condor population appears to continue steadily downward after implementation of this option, we stand ready to reevaluate the taking into captivity of all, or a significant portion of, the remaining [wild] population."303

The Court of Appeals opinion in National Audubon Society v. Hester lacks the explicit analysis of the enforceability of recovery plans set forth in National Wildlife Federation v. National Park Service. However, the message is the same: the terms of recovery plans, by themselves, do not constrain agency action.304

During the 1970s, grey wolves outside Minnesota were listed as endangered.305 The northern Rocky Mountain Grey Wolf is one of a variety of subspecies of Grey Wolf once common on the North American Continent. During the latter 19th century, buffalo hunters and settlers exterminated the buffalo herds and other hoofed animals which had provided prey for the wolves in the Rocky Mountain west. As ranchers introduced domestic livestock, cattle and sheep, into the areas where buffalo had once roamed, the wolves began to prey on livestock. The wolf threat to livestock lead to a systematic program

and Audubon were named as the agencies having lead responsibility for establishing and conducting the California Condor research and recovery programs.

The Recovery Program has long emphasized that three measures are essential to ensuring the continued survival of the species in the wild: (1) captive propagation of birds to be reintroduced into the wild; (2) research relying principally on radio telemetry to study the habits and the habitat of the wild Condor population; and (3) continued efforts to preserve and acquire important habitats.

Until December 1985, FWS viewed as critical to the Recovery Program the continued maintenance of a wild population. On December 16, 1985, FWS executed an abrupt about-face and issued a permit authorizing the capture and removal of all surviving wild California Condors.

Id.

303. 801 F.2d at 408.


305. Under the Endangered Species Act's definition of "species," 16 U.S.C. 1532(16), USFWS may list "distinct vertebrate populations as threatened or endangered even if the species is abundant elsewhere in its range. The Secretary [USFWS] may also list some populations of species as endangered and others as threatened." ROHLF, supra note 23, at 37.
for eradication of wolves. The federal government hired professional trappers and local governments placed bounties on wolves. Wolves were exterminated across the west. In Yellowstone National Park, between 1914 and 1926, a minimum of 136 wolves, including 80 pups, were killed. Resident wolf packs did not persist in Yellowstone after the 1930s.

In 1987, USFWS prepared a recovery plan for the Northern Rocky Mountain Wolf. The Recovery Plan’s implementation schedule called for the reintroduction of wolves into Yellowstone National Park (in which they had been exterminated 60 years before) within two years. However, political opposition delayed reintroduction.

An environmental group, Defenders of Wildlife, sued in an attempt to force implementation of the specific provisions of the Northern Rocky Mountain Wolf Recovery Plan requiring reintroduction of the wolf in Yellowstone National Park. In May 1992, the U.S. District Court for the District of Columbia denied plaintiff’s motion holding:

The Recovery Plan itself has never been an action document. It left open different approaches and contemplated that when an agency or group made specific proposals for achieving a particular objective of the plan, there would be a need for further study.

In Defenders of Wildlife v. Lujan, a federal court again made it clear that the specific terms of a recovery plan were not enforceable in court.

2. Enforcing the Duty to Plan for Recovery

While the specific terms of recovery plans have not been held directly enforceable, the general duty to “develop” and “implement” such plans is, at least arguably, a different matter. USFWS and NMFS may also have some duty to craft recovery plans in accordance with the requirements of the 1988 amendments to the recovery planning section.

306. Wolf persecution and eradication were relentless and conducted with almost hysterical zeal. Wolves were not just shot, trapped and poisoned but burned alive, dragged behind horses, and mutilated... The fact that these events happened within the lives and memories of many western residents strongly affects the social and political climate surrounding wolf recovery efforts today. Edward Bangs and Steven Fritts, Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho, Fish and Wildlife Service, U.S. Dep’t of the Interior, Endangered Species Technical Bulletin 1 (June-Oct. 1993).


308. Id. at 51.


310. Id. at 835 (citation omitted).

311. See supra part II.C.
The case for a general duty to develop recovery plans rests upon the opinion in *Sierra Club v. Lujan*,312 issued in February 1993. This case dealt with threats to the endangered denizens of the Edwards Aquifer in south central Texas. The “Edwards” is an enormous underground lake, 175 miles long and 3600 square miles in extent. Porous rock contains the water of the aquifer. Holes in the rock vary in size. Some are less than one foot across. Others are underground caverns, almost 100 feet from wall to wall.313 Water flows through the aquifer from recharge areas and out through two natural springs—Comal Springs near New Braunfels, Texas and San Marcos Springs near San Marcos, Texas. The Edwards itself is home to a number of unique species including the endangered Texas Blind Salamander.314 Comal Springs is home to one of two wild populations of the endangered Fountain Darter. San Marcos springs and the hydrologically related San Marcos river are home to the threatened San Marcos Salamander, the other population of the endangered Fountain Darter, and two endangered plant species, Texas Wild Rice and the San Marcos Gambusia.315

Wells drilled in the Edwards Aquifer supply water for over one million residents of the region including the citizens of San Antonio, Texas. The Edwards also supplies water for irrigated agriculture, industry, and military bases. Absent human extraction, the volume of the aquifer would be sufficient to keep water running in the Comal and San Marcos Springs even in the driest years. However, escalating human withdrawals from the aquifer have created a significant risk that either one or both springs will dry up in drought years, annihilating the protected species for which they provide habitat. Pumping also creates a risk of “bad water” containing potentially harmful levels of hydrogen sulfide, filling the aquifer and affecting its unique species, including the protected Blind Salamander.316

In May 1991, the Sierra Club sued USFWS,317 alleging that continued withdrawals from the aquifer would result in takings of the endangered fountain darter in violation of section 9; that they were likely to jeopardize the continued existence of the fountain darter in violation of section 7; and that USFWS had failed to carry out its duties in developing and implementing recovery plans relating to the protected species dependent on the aquifer. USFWS had prepared a

313. *Id.* at *3.
314. *Id.* at *4.
San Marcos Springs Recovery Plan but had failed to implement it. USFWS had prepared no other recovery plans related to the Edwards Aquifer ecosystems. On November 17-19, 1992, Judge Lucius Bunton of the District Court for the Western District of Texas held a bench trial on the issues in the case. In its opinion, the district court held that USFWS had violated its mandatory duty to develop and implement recovery plans.

Section 4 of the ESA provides, the Secretary "shall develop and implement" what is known as a "recovery plan" for each endangered species, unless he finds that it "would not promote the conservation" of the species to do so . . . . Section 4 of the ESA commands the Secretary to "develop" and "implement" recovery plans . . . . An abuse of discretion occurs when an agency which Congress mandates "shall develop and implement a recovery plan" refuses to act on the behalf of species the USFWS knows were in "imminent peril" in 1989 and 1990 . . . . The Federal Defendants claim Plaintiffs have "no legal basis" for asserting the Federal Defendants have a nondiscretionary duty under ESA § 4 to identify and communicate the Comal and San Marcos species' springflow requirements . . . . To the contrary, § 4 of the ESA provides that the USFWS shall determine what species are endangered or threatened and list them . . . and "shall develop and implement" what are known as "recovery plans"—plans for the "conservation and survival" of listed species . . . . At least in the circumstances of this case, the ESA § 4 duty to develop and implement a plan is mandatory, not discretionary. The ESA says that he "shall" develop and implement such recovery plans.318

Defendants asserted that the broad discretionary power identified by the district court in National Park Service shielded them from any obligation to develop or implement specific plans, particularly in light of budgetary constraints. Judge Bunton disagreed:

Both the Federal Defendants and the Defendant-Intervenors argue the Secretary has discretion to set priorities and determine whether recovery plans will conserve the species . . . . (citing National Wildlife Fed'n v. National Parks Serv., 669 F. Supp. 384 (D.Wyo. 1987)). National Wildlife Fed'n stands for the proposition that, if there exists sufficiently clear justification arising out of facts developed after completion of a recovery plan, the Secretary can temporarily delay implementation of a recovery plan . . . . The facts in the instant case are markedly different. For eight years, the Federal Defendants failed to implement the existing San Marcos Recovery Plan, and they failed to develop a plan for Comal Springs . . . . The Federal Defendants argue that "particularly in light of the severe budget constraints" their duty to develop and implement a recovery plan should be discretionary. This Court refuses to legislate a new exception reading: . . . the Secretary shall develop and implement a recovery plan unless he

318. 1993 WL 151,353 at *10-*11.
claims, or suspects, that "tight budget constraints" make development or implementation of a recovery plan inconvenient or difficult to reconcile with the needs of other species, in which case he may or may not develop and implement a plan, when and if he pleases.319

The *Sierra Club v. Lujan* analysis of *National Park Service* limits the earlier case to its facts. The holdings in *Hester* and *Defenders of Wildlife v. Lujan* suggest that agency discretion in ignoring or delaying recovery plan implementation is not quite so limited. The facts of *Sierra Club v. Lujan* provide the key for reconciling that case with others rejecting mandatory recovery planning arguments. In *National Park Service, Hester, and Defenders of Wildlife v. Lujan*, the actions of USFWS in departing from planned recovery conduct or delaying recovery conduct were defensible acts of agency discretion. In *Sierra Club v. Lujan*, on the other hand, USFWS had simply failed to take action to discharge its recovery implementation duties. Arguably, therefore, while the duty to "develop" and "implement" recovery plans is enforceable in court, it does not require compliance with every term of a recovery plan.

Another recent case holds that while USFWS and NMFS may have a general duty to develop and implement recovery plans, the content of plans is beyond review. In September 1992, the U. S. District Court for the Southern District of Alabama denied a motion for a preliminary injunction to prevent development in an area north of the designated critical habitat of the endangered Perdido Key Beach Mouse after endangered mice had apparently moved into that area.320 Plaintiffs asserted that the USFWS recovery plan should have required designation of the area in question as critical habitat. The court disagreed on the ground that, although the development of recovery plans might be mandatory, their contents are discretionary.

It is undisputed that the Secretary has already developed a recovery plan. Plaintiff's complaint is that the recovery plan is insufficient because it does not designate the area north of the highway as critical habitat. As noted above, the contents of the plan are discretionary, as evidenced by the language "to the maximum extent practicable."321

The court's language suggests that the addition of specific requirements in the 1988 amendment process did not make the elements of recovery planning any more enforceable.

This conclusion is called into question by *Fund for Animals v. Babbitt*,322 a recent case from the U.S. District Court for the District of Columbia. In 1994, the Fund for Animals, National Audubon Soci-

319. *Id.* at *11.
321. *Id.* at 433.
ety, and other environmental groups brought what was perhaps the first lawsuit to focus primarily on recovery planning issues. Plaintiffs challenged a variety of provisions of the 1993 USFWS Grizzly Bear Recovery Plan under the terms of the 1988 amendments to the Act, which require "site-specific management actions" necessary for the conservation and survival of the species and objective, measurable criteria by which to monitor species' recovery. While plaintiffs prevailed on the question of the adequacy of recovery criteria, other aspects of the court's decision support agency discretion regarding the contents of recovery plans. The court did recognize, however, that the recovery planning provision imposes a duty on USFWS independent of that imposed by any other provision of the Endangered Species Act.


The holdings in Defenders of Wildlife v. Lujan, Hester, and National Park Service make the direct enforcement of recovery implementation schedules unlikely. However, in specific cases, those schedules can be rendered enforceable by linking them with other substantive provisions of the Endangered Species Act. This process has already begun. In Hawaii, elements of the 'Alala (Hawaiian Crow) recovery plan are being rendered enforceable by court-supervised settlement of a section 9 takings claim. In Colorado, elements of the recovery plans for four species of endangered fish are rendered enforceable through linkage with section 7 consultations. In southern California, negotiations involving habitat preservation for the Least Bell's Vireo suggest ways in which recovery plans can be rendered enforceable through the section 10(a) habitat conservation planning process.

1. Implementation by Court Order

The 'Alala, or Hawaiian crow, is a species on the brink of extinction. Endemic to the island of Hawaii, and limited to 'ohi'a and 'ohi'a-koa forests on the slopes of Hualalai and Mauna Loa, introduced disease and predators and destruction of habitat had reduced the species to approximately twenty-four members as of January 1993: ten adults and one juvenile lived in captivity, eleven adults and one juvenile lived in the wild on the McCandless Ranch, and one lone female lived elsewhere in the wild. For a number of years, lack of

cooperation between USFWS and the owners of the McCandless Ranch hampered efforts to protect and recover the species. 325

In 1991, the Hawaii Audubon Society and National Audubon Society sued USFWS to force it to take additional action to conserve and recover the ‘Alala. 326 The parties, including the McCandless Land & Cattle Company, resolved the litigation by executing a final settlement agreement filed and approved by the U. S. District Court for the District of Hawaii and enforceable by that court. Under the terms of the order, USFWS is obligated to implement a “long-term management plan” prepared in 1993 in lieu of a revised recovery plan. The McCandless Land & Cattle Company is obligated to provide access to ‘Alala habitat for USFWS personnel. The “long-term management plan” is, in effect, a recovery plan, and includes both an objective (two or three viable populations of ‘Alala in the wild) and a ten-year implementation schedule identifying specific recovery tasks (including reintroduction of captive birds into the wild). 327

As of June 1995, the prospects for the ‘Alala were looking up. Recovery plan implementation was going forward. In October 1994, seven chicks were released into the wild, increasing the wild population of twelve birds by thirty-five percent. 328 While the final result of the ‘Alala agreement will not be clear for years to come, 329 the idea of rendering recovery tasks enforceable through court orders achieved through settlement or injunction provides a promising avenue for buttressing the direct duty to “develop and implement” recovery plans that was recognized in Sierra Club v. Lujan and limited in Hester, Defenders of Wildlife v. Lujan, and National Park Service.

Indirect enforcement of recovery plans and planning documents through court orders has an obvious advantage over direct enforcement on the Sierra Club v. Lujan model. Court orders can be enforceable against parties other than the agencies specifically subject to the recovery planning section. Direct enforcement of an ‘Alala recovery plan against USFWS would have been of little use to the species absent guaranteed access to species habitat on private land. Court enforced settlement ensures both implementation of recovery planning and the access to private land necessary for that implementation, because it binds both USFWS and the private landowner.

325. Interview with Michael Sherwood, Senior Staff Attorney, Sierra Club Legal Defense Fund, San Francisco (July 6, 1995).
326. The Audubon Society Complaint stated claims under sections 2, 4(f) and 7(a)(1) of the Endangered Species Act. Final Settlement Agreement and Order 2 (July 27, 1993).
328. Telephone Interview with Michael Sherwood, supra note 325.
2. Implementation as a Reasonable and Prudent Alternative

The Colorado River system extends from the headwaters of the Colorado in Rocky Mountain National Park in northeast Colorado to the Gulf of California and includes the Colorado River, the Green River, and numerous tributaries. Historically, the Colorado was an isolated river system running through mountains and desert, separated by the Rocky Mountains from the Platte, Missouri, and Mississippi river system on the east and by the Sierra from the Great Basin to the west. The Colorado river system has seen the evolution of a variety of unique species.

In the twentieth century, dam construction and water diversion have transformed the Colorado river ecosystem. These human activities have so altered the river system that they have driven a number of the system’s unique species to the brink of extinction. Four species of Colorado river fish, the Colorado Squawfish, Humpback Chub, Bonytail Chub, and Razorback Sucker have been listed as endangered. USFWS has prepared recovery plans for three of these species. USFWS only recently, as a result of litigation, listed the Razorback Sucker. No recovery plan has yet been prepared for that species.

Recovery plans for the Colorado Squawfish, Humpback Chub, and Bonytail Chub require protecting sufficient instream flows to provide habitat for the species, restoring degraded habitat, and managing introduced nonnative fish and sport fish that compete with the native fish and prey upon them. In order to carry out these tasks, USFWS has adopted a novel recovery implementation program (RIP) and, more recently, a recovery action plan (RAP). One of the central elements of the recovery implementation strategy is the linkage of recovery program implementation and consultation under section 7. Under the RIP/RAP, “sufficient progress” in recovery implementation may provide a reasonable and prudent alternative for purposes of jeopardy consultation. In other words, projects that require consultation (projects authorized, funded, or carried out by the federal government) can use a healthy recovery process as a shield against the possibility of a jeopardy finding for projects that might affect the listed fish species. If the recovery implementation process is going forward at a reasonable pace, then projects may go forward. If the recovery implementation process is stalled, theoretically projects may be stopped.

John Hamill, a USFWS biologist who directs the Colorado River RIP/RAP project, observed:

The agreement represents a significant departure from the traditional approach to section 7 consultation on water development projects. Instead of relying on project sponsors to offset the impacts of a project, [USFWS] will consider the accomplishments of the Recovery Program. This approach has benefits both for water developers and Endangered fishes.332

Many believe the particulars of the Colorado River RIP/RAP and the pace of implementation progress under it are inadequate.333 However, the strategy of linking the availability of reasonable and prudent alternatives to jeopardy with the recovery process provides another example of a potential avenue for indirect implementation of recovery planning provisions. As with court-ordered implementation, this coupling of section 7 consultation and recovery implementation has the advantage of enforcing recovery requirements against parties other than USFWS and NMFS. However, here the universe of parties bound is not limited to the parties in a lawsuit, but instead includes everyone subject to the section 7 consultation requirement. In the Colorado River system, where the federal government controls the largest dams, federal land borders much of the river, and Clean Water Act section 404 permits are required for most water diversions, this includes most relevant parties.334

The approach also has a significant disadvantage. It effectively subordinates the section 7 consultation process to recovery goals. Undercutting the jeopardy prohibition, which has been one of the keys to the effectiveness of the Endangered Species Act, and replacing it with the potentially more subjective and manipulable concept of progress in implementation creates a significant danger of regulating species out of existence in an attempt to generate support for programs designed to recover them. In the case of the Colorado River system, the RIP/RAP has defused potential conflicts between the Endangered Species Act and state water rights and created a mechanism for species recovery.

3. Implementation Through Habitat Conservation Planning

The Least Bell's Vireo, a small grayish migratory songbird, once inhabited streamside willow woodlands through much of southern California. As a result of development and resulting habitat loss, the


334. In other fact situations, the absence of a consultation requirement for parties unconnected with the federal government might be a problem.
species has been pushed to the edge of extinction. The Vireo was listed as an endangered species in 1986.335

Since 1986, the San Diego Association of Governments has coordinated efforts to protect the species. Between 1986 and the early 1990s, those efforts focused on the development of a series of habitat conservation plans under section 10(a) of the Endangered Species Act. The conservation planning process set habitat conservation targets to provide sufficient living space for five thousand breeding pairs of vireos. The conservation planning process adopted the 5000 pair goal directly from the USFWS Least Bell’s Vireo Recovery Plan.336

The habitat conservation planning initiatives are now on hold.337 However, the coupling of recovery planning with section 10(a) habitat conservation planning offers another avenue for indirect enforcement of specific recovery planning provisions. As with the consultation process discussed above, habitat conservation planning can be used as a vehicle for rendering recovery planning provisions enforceable.

Under section 10(a), habitat conservation plans are the basis for the grant of incidental take permits—exemptions from the taking prohibition in section 9. If the holder of such a permit fails to implement the terms of a habitat conservation plan, then the incidental take permit may be withdrawn, opening the holder’s activities to section 9 enforcement action, civil and criminal. If a habitat conservation plan incorporates specific recovery planning provisions, then those provisions become enforceable against the permit holder. As with the other two forms of indirect enforcement discussed, incorporating recovery plan provisions into HCPs has the advantage of making recovery plans enforceable against parties other than those agencies charged with developing and implementing them.

VI
A NEW WAY OF THINKING ABOUT A TWENTY-YEAR-OLD LAW

Now, with the pieces of the puzzle spread before us, what can we tell about the future of the concept of recovery under the Endangered Species Act and the planning process intended to further it? The future, as always, remains contingent on the political will to protect species and biodiversity. For purposes of this discussion, I will assume

335. BEATLEY, supra note 109, at 109.
336. Id.
337. Interview with Loren Hays, United States Fish and Wildlife Service (June 9, 1995) (HCP’s for Least Bell’s Vireo will not be implemented because the U.S. Army Corps of Engineers’ Clean Water Act § 404 permitting process protects essential Vireo habitat, and therefore significant habitat disruptions will be subject to section 7 consultation).
that willingness continues and, in fact, grows as the values of biological diversity become better known and global biological diversity continues to decline at alarming rates. Accepting this assumption, how should we continue the process of furthering recovery within the structure of the Endangered Species Act?

A. The Recovery Concept as the Key to Interpretation

First, we should accept that impact on recovery prospects plays a central role in interpreting other provisions of the Endangered Species Act: (1) harm to recovery prospects may constitute harm to a species within the meaning of the section 9 taking prohibition; (2) harm to recovery prospects may constitute jeopardy to a species within the meaning of section 7(a)(2); (3) harm to recovery prospects may constitute “adverse modification” of critical habitat within the meaning of section 7(a)(2); and (4) recovery prospects should play a central role in the designation of critical habitat.

If we accept the central interpretive role of the recovery concept in determining what the Endangered Species Act does and does not allow, the Act, as a whole, suddenly begins to make more sense. The various enforcement mechanisms, so long divorced from the Act’s stated purpose of conserving species and the ecosystems on which they depend, become methods of furthering that goal by furthering, or at least not foreclosing, recovery and conservation. If we view the substantive provisions of section 7 and 9 as paths to the ultimate goal of recovery, we will discourage formalistic readings of enforceable provisions of the Act, which construe the words of the Act to the long-term detriment of the species it was intended to protect,338 and encourage interpretation of the Act more in accord with the spirit in which it was enacted.

Emphasizing the central role of recovery would force us to move a few more steps away from the unhelpful “one threat model” of species protection and a little closer to the “probabilities model.” Thinking in terms of recovery prevents us from limiting our focus to the effects of the proposed project or threat and forces us to ponder how the particular enforcement decision will likely affect the probable status of the species in the long run.

Accepting the central role of recovery—coupled with clear, high quality recovery plans—can also help resolve disputes about the wisdom of various Endangered Species Act enforcement initiatives by setting them in a broad context based on solid scientific information. Recovery plans and recovery team testimony already play a significant

role in shaping the perspective of courts facing Endangered Species Act issues. Recognizing the role of recovery in shaping agency and judicial views of the Act's enforcement mechanisms would legitimate this process and, incidently, demonstrate the importance of high quality recovery planning.

Recognizing recovery as an interpretive key to other provisions of the Endangered Species Act does not require us to find every harm to recovery prospects a violation of the Act's more enforceable provisions. Each provision of the law has its intended functions and those functions cannot be stretched beyond reason. However, when a specific factual situation creates a doubt as to whether a specific provision of the Act should be invoked, it is useful to ask whether the application of the provision furthers or frustrates recovery of the species.

B. Recovery Planning as the Key to Coordination

Just as the concept of recovery should become the key to interpreting other provisions of the Endangered Species Act, so should the process of recovery planning coordinate the use of those provisions to conserve species. Currently, recovery plans describe the status of the species to be recovered and identify a recovery objective and a series of recovery tasks, arranged in a schedule, intended to achieve the identified objective. The value of recovery plans would be enhanced if they considered how application of other provisions of the Endangered Species Act could further, or at least not frustrate, recovery.

Recovery plans currently discuss a broad range of topics from the purely scientific to the political and legal. On occasion, they will refer to enforcement of other sections of the Act. However, additional analysis of the role of other provisions of the Act could be fruitful. The process might begin with a relatively simple set of questions: how will section 7(a)(2) consultation further recovery of the species? How will enforcement of the section 9 taking prohibition fur-

339. See discussion supra part III.
ther recovery of the species? How will designation of critical habitat further recovery of the species? How will the issuance of section 7(b)(4) incidental take statements or section 10(a) incidental take permits further recovery of the species?

The National Research Council Committee on Scientific Issues in the Endangered Species Act recently offered what it calls "recovery plan guidance":

We recommend . . . that all recovery planning include an element of "recovery plan guidance" particularly with regard to activities to be reviewed under section 7, 9 and 10 of the ESA. To the extent feasible, the guidance should identify activities that can be assumed to be consistent with the requirements of those sections, activities that can be assumed to be inconsistent with them, and activities that require case by case evaluation.344

Specific consideration of the relationship between the recovery process and other provisions of the Act would strengthen the recovery process by giving it new credibility. A searching analysis of this relationship should demonstrate that recovery objectives are achievable with the regulatory tools available. The various mechanisms for indirectly enforcing recovery planning provisions345 would add to the available range of legal options.

The specific consideration of the relationship between the recovery process and other provisions of the Act would facilitate acceptance of enforcement of other provisions of the Act by linking their enforcement with a long-term positive goal—recovery and eventual delisting of the species. Some people currently opposed to endangered species protection might be swayed by the explanation that the burdens they see imposed upon landowners are part of a well thought out plan to nurse a species back to health. While this argument would not persuade everyone, it would certainly be more compelling than the more generalized arguments we must now use to justify enforcement.

Consideration of the relationship between recovery and other more enforceable provisions of the Act would make the recovery process more controversial. Until recently, recovery teams were left more or less in peace as they prepared their plans, because no one perceived those plans as a threat. Statements about the appropriateness of types and patterns of application and enforcement of the entire Endangered Species Act embodied in recovery plans could render those plans more threatening to potentially regulated parties and public interest groups. While I sympathize with potential future recovery

345. See discussion supra part V.B.
planners saddled with this burden of controversy, their understanding of the dynamics of species recovery makes them by far the best qualified people to make intelligent choices on controversial issues.\textsuperscript{346}

C. A Simplified Example of a Recovery-Oriented Application

A final hypothetical example may assist in illustrating the advantages of recovery-oriented interpretation and coordination of Endangered Species Act provisions. Imagine a hypothetical species of bird. Originally, the species lived and bred on five large islands somewhere within the jurisdiction of the United States. The bird species has been reduced to one small population (200 individuals) on one of the five islands. The decline of the species is the result of browsing by feral goats maintained by a state wildlife agency and the filling of wetlands under federal permit. USFWS lists the species as endangered and prepares a recovery plan. The plan sets a recovery objective: populations of 1000 individuals each on four of the five islands in the bird's original range. This is a sufficient population and distribution to generate a reasonable probability of long-term survival. The recovery plan sets a recovery implementation schedule including the following tasks within the allotted time periods:

1. Monitoring bird populations \hspace{2cm} Ongoing
2. Removal of feral goats \hspace{2cm} Within two years
3. No additional filling of wetlands \hspace{2cm} Within two years
4. Reintroduction of bird populations on four islands from which they have been extirpated \hspace{2cm} Within five years
5. Creation of new wetlands \hspace{2cm} Within ten years

This type of identification of a recovery objective and setting of a recovery implementation schedule are now a common part of the recovery planning process. However, the effectiveness of the recovery planning process in this case would be enhanced by a discussion of (1) whether maintenance of feral goats in bird habitat (on the one inhabited island) prevented recovery of the species and therefore might constitute a violation of the section 9 taking prohibition; (2) whether maintenance of feral goats in habitat required to achieve recovery objectives (on the four uninhabited islands) prevented

\textsuperscript{346} In their perceptive discussion of the recovery planning process, Tim Clark and Ann Harvey speak of "power goals" replacing "task goals" in the recovery planning process, as control of the program becomes more important than protection of the species. Clark & Harvey, Implementing Recovery Policy: Learning as We Go?, in BALANCING ON THE BRINK OF EXTINCTION 147, 152 (Kathryn A. Kohm ed. 1991). This worries me. Arguably, giving the recovery planning process more legal relevance would aggravate this problem by raising the political stakes, creating a greater risk that politics might overcome biology. However, adopting Clark and Harvey's suggestions for improving organizational structure and personnel might limit this danger.
recovery of the species and therefore might constitute a violation of section 9; (3) whether issuance of federal permits for filling additional wetlands on the island on which the bird persists prevents recovery of the species and might constitute jeopardy to the continued existence of the species; (4) whether issuance of federal permits for filling additional wetlands on islands on which the bird has been extirpated would prevent recovery of the species and might constitute jeopardy to the species; (5) how much of which islands should be designated as critical habitat to promote recovery of the species; (6) whether a recovery implementation program based on habitat conservation planning or some generalized reasonable and prudent alternative for section 7 consultations associated with federal permits to fill wetlands might facilitate recovery.

Each of these issues, and others like them, could be discussed in terms of their effect on the recovery prospects of the species. The advisory nature of the recovery planning process, so frustrating to those who have sought to enforce recovery plans, would ensure that it would not directly constrain future agency decisionmaking or judicial review of that decisionmaking. On the other hand, the discussion would draw together in one place the scientific and legal considerations in charting a path back from the edge of extinction.

At some later time, a court faced with litigation challenging the issuance of another permit to fill wetlands or the continued maintenance of feral goats might turn to this discussion for guidance just as the district court in the Palila cases turned to the recovery plan and members of the recovery team in determining what constituted a taking of the species. 347

CONCLUSION

In 1962, Thomas Kuhn used the phrase "paradigm change" to identify those revolutions in the nature of scientific thought when an old way of thinking becomes an inadequate tool for dealing with reality and a new way of thinking must replace it. 348 Such paradigm changes also occur in our understanding of law. 349 The Endangered Species Act is due for such a change. The "prohibitive" perception of the Act 350 has become inadequate for dealing with biological and political reality. The needed change in our thinking can begin if we

347. See discussion, part IV.A.
349. George Coggins notes that "paradigms are like tight ends in football; they seem to shift a lot." George C. Coggins, Eleven Reasons to Disregard This Commentary on the Brave New Era in Western Public Land Law, 65 U. COLO. L. REV. 401, 402 n.10 (1994).
350. See, e.g., YAFFEE, supra note 130.
accept the central role of the concept of recovery in all aspects of the Endangered Species Act.

The Endangered Species Act's power and simplicity have made it effective in protecting biological diversity, while allowing flexibility to protect human economic interests through the reasonable and prudent alternatives process and the various exceptions to the taking prohibition. Like Ptolemaic astronomers, who did an excellent job of predicting the movement of the stars and planets despite the handicaps created by their assumption that the Sun revolved around the Earth, those charged with enforcing the Endangered Species Act have done much to mitigate the effects of their assumption that the Act is fundamentally prohibitive in nature. However, the connection between the enforcement of the Act's substantive provisions and the Act's goal of furthering conservation and recovery of species has been tenuous. The authors of the Act understood that preventing extinction was not enough. They understood that any effective species preservation law must "conserve" or "recover" protected species. A new focus on the concept of recovery and the recovery planning process might strengthen that connection to the benefit of protected species and begin the process of altering the way we think about the Endangered Species Act.

351. See Babbitt, supra note 8, at 356.
352. Kuhn, supra note 348, at 68.