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Playing Noah

John Copeland Nagle*

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Noah didn’t have this problem. Faced with a crisis of truly biblical proportions, he was not afforded any choice about which animals to protect from the coming flood. Instead, *Genesis* reports, God instructed Noah to bring *every* kind of animal onto the ark “to keep the species alive on the face of all the earth.”

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1. *Genesis* 7:1-3 (New King James). All scripture quotations are to the
Noah obeyed, the passengers of the ark survived the flood, and "every beast" returned to inhabit the earth.\(^2\)

The Endangered Species Act (ESA) seems to embody the same idea. The ESA protects all species from extinction. Grizzly bears and kangaroo rats, alligators and salamanders, bald eagles and black-capped vireos—all are entitled to the same protection from government and private action once they are determined to be endangered or threatened with extinction. There are a few exceptions, but generally the ESA does not allow society to decide that one bird is more important than another, or that we will save one animal but not another.

Yet there is a competing biblical metaphor for the ESA. Judges, legislators, professors, and others have described the law as "playing God."\(^3\) The "God Squad" is the popular term for the Endangered Species Committee, the seven federal officials charged by the ESA with determining which federal projects will proceed despite the likely extinctions they will leave in their paths.\(^4\) Other parts of the ESA provide numerous opportunities for enforcement authorities and interested parties to prefer some species over others. And some advocates of amending the ESA explicitly endorse a system that allows us to decide which species will live and which species will die.

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New King James Version unless otherwise indicated.

2. Genesis 7:5-8:19. I describe the story in somewhat greater detail infra text accompanying notes 177-178.


The choice between biblical metaphors lies at the heart of the current debate over the future of the ESA. Once viewed as too popular to criticize, the ESA has become the focal point of intense controversy. On the one hand, critics of the law see it as a threat to private property unrivaled in environmental law. On the other hand, defenders of the ESA insist that its existing provisions are inadequate to the task of protecting biodiversity threatened by rampant habitat destruction. Thus “[e]ndangered species have been used as a whipping post for the left and the right, to no one’s advantage.” Most of the dispute has centered on the ESA’s ban on activities on private property that would harm the habitat of an endangered species, but the prohibition against federal government activities that jeopardize the existence of a species and the very process of listing a species as endangered or threatened have sparked numerous controversies themselves.6

Three recent events illustrate the debate over the ESA and the relevance of the competing biblical metaphors. First, the 104th Congress subjected the ESA to its most intensive critique since a nearly unanimous Congress and President Nixon approved the law in 1973. Early in 1995, a special House task force held a series of hearings in parts of the country where the ESA is often viewed as the enemy of the people.7 Six bills de-


7. The task force held hearings in Belle Chasse, Louisiana; Boerne, Texas; New Bern, North Carolina; Bakersfield, Riverside, and Stockton, California; Vancouver, Washington; and finally in Washington, D.C. To say that the ESA was on the defensive during these hearings would be an understatement. See, e.g., Endangered Species Act: Washington, DC—Part I: Oversight Hearing Before the Task Force on Endangered Species Act of the Comm. on Resources, House of Representatives, 104th Cong. 46 (1995) [hereinafter Washington ESA Hearing Part I] (statement of Rep. Shadegg) (claiming that the ESA “is being used to violate property rights on a massive scale and to threaten our liberty. It is destroying jobs and causing enormous economic dislocation.”); Endangered Species Act—Vancouver, Washington: Hearing Before the Task Force on Endangered Species Act of the Comm. on Resources, House of Representatives, 104th Cong. 65 (1995) [hereinafter Vancouver ESA Hearing] (testimony of Lois Van Hoover) (claiming that “it is time to scrap the ESA and start anew”); Bakersfield ESA Hearing, supra note 4, at 2 (statement of Rep. Pombo) (“Many of my constituents are frustrated and angry about a law that allows government bureaucrats to put the protection of a rat, or fairy shrimp, or any other species, above the lives and safety of human beings.”).
signed to make the law more palatable to those who encounter its requirements followed from those hearings. The outcry from environmentalists, the Clinton Administration, and others doomed each of the bills before they reached the floor of the House or the Senate. The episode repeated itself in 1997, when efforts to exempt flood control projects from the ESA prompted accusations that the same forces were trying once again to gut the Act. Throughout each debate, the rhetoric has betrayed the desires of the speaker. Environmentalists, the Clinton Administration, and other supporters of the Act spoke of bald eagles, grizzly bears, whooping cranes, and alligators. Landowners, western House Republicans, and other critics of the ESA referred to kangaroo rats, fairy shrimp, ambersnails, tiger beetles, and of course, the snail darter.


9. See 143 CONG. REC. H2282 (daily ed. May 7, 1997) (statement of Rep. Slaughter); id. at H2287 (statement of Rep. DeGette); id. at H2284 (statement of Rep. Boehlert); id. at H2300 (statement of Rep. Vento); id. at H2300-01 (statement of Rep. Miller). But see id. at H2290 (statement of Rep. Young) (“We did not repeal the Endangered Species Act, nor did we attempt to. We tried to rewrite it without any help from the minority at all, and this administration has been asked many times, and they sit on their fat never mind.”).

10. The rhetorical force of the kangaroo rat illustration provoked a Fish & Wildlife Service memo instructing that government officials should “always call it a ‘kangaroo rat’, never a ‘K-rat’, or ‘rodent.’” Endangered Species Act: Washington, DC—Part II: Oversight Hearing Before the Task Force on En-
The second event was the publication of *Noah's Choice: The Future of Endangered Species*, the excellent discussion of endangered species and the Endangered Species Act written by Charles Mann and Mark Plummer.\(^{11}\) The book demonstrates, if nothing else, why *The New York Times Magazine*, *Smithsonian*, and *The Atlantic* are more widely read than your favorite law review. Mann and Plummer have written for these publications (and then some), and they succeed in telling the story of endangered species in a way that resembles a mystery novel more than a technical scientific journal. Their book was published one month after the beginning of the 104th Congress, and the proponents of rewriting the ESA often credited *Noah's Choice* as a source of intellectual inspiration.\(^{12}\) Mann and Plummer see the ESA as the embodiment of the "Noah Principle," scientists' term for the human obligation to protect all species from whatever ecological disasters that come their way. Faced with a conflict between protecting endangered species and any other human aspiration, the endangered species always wins. Mann and Plummer argue that it is impossible to protect all endangered species Act of the Comm. on Resources, House of Representatives, 104th Cong. 175 (1995) [hereinafter Washington ESA Hearing Part II] (quoting a 1987 memorandum regarding the anticipated listing of Stephens' kangaroo rat). The kangaroo rat controversy is discussed infra at note 241.


endangered wildlife and plants because we lack the resources and the will to do so. They further contend that continued allegiance to the Noah Principle prevents a real discussion of the choices we must make. Mann and Plummer thus propose an alternative system that would allow society to choose between endangered species and other concerns (e.g., whooping cranes or oil fields), or between one endangered species and another (e.g., whooping cranes or black-capped vireos). In other words, they prefer a law in which we play God instead of Noah. God can choose who lives and who dies; Noah could not.\footnote{13}

Third, and most surprisingly, the 104th Congress heard a series of religious arguments in favor of the protection of biodiversity. Interior Secretary Bruce Babbitt has argued that "religious values remain at the heart of the Endangered Species Act."\footnote{14} He recognizes the utilitarian arguments for preserving species, but he prefers "the moral and spiritual imperative that there may be a higher purpose inherent in creation, one demanding our respect and our stewardship quite apart from whether a particular species is or ever will be of material use to mankind."\footnote{15} Or consider the position of the Evangelical Environmental Network (EEN), an evangelical Protestant group whose recent lobbying and nationwide advertising campaign regarding the ESA gained widespread attention.\footnote{16} The EEN

\footnote{13. See infra at text accompanying notes 225-231 (describing Mann and Plummer's proposal). Mann and Plummer never quite say that we should "play God," but they understand the difference between the biblical metaphors. See MANN \& PLUMMER, supra note 11, at 170 (noting that the Endangered Species Committee "was promptly nicknamed the 'God Committee,' after the only power able to overrule Noah").}

\footnote{14. Bruce Babbitt, Between the Flood and the Rainbow: Our Covenant to Protect the Whole of Creation, 2 ANIMAL L. 1, 8 (1996).}

\footnote{15. Id. at 1, 3, 8; see also Bruce Babbitt, Between the Flood and the Rainbow: Stewards of Creation, 113 CHRISTIAN CENTURY 500, 502 (1996); U.S. Department of the Interior, Statement of Interior Secretary Bruce Babbitt on Evangelical Support of Endangered Species Act (Jan. 31, 1996) (press release), available in LEXIS, News Library, Arcwns File.}

PLAYING NOAH

believes that "[a] species should be preserved because it has been created by God." Thus the EEN "opposes any Congressional action that would weaken, hamper, reduce or end the protection, recovery and preservation of God's creatures, including their habitats, especially as accomplished under the Endangered Species Act." Likewise, the Coalition on Environment and Jewish Life (COEJL) emphasizes that "[e]ndangered species are God's creatures."

In each instance, the story of Noah has served as a justification for the protection of endangered species. Secretary Babbitt has delivered speeches and written articles defending the ESA as an imitation of Noah's example. EEN has relied on the story of Noah as the centerpiece of its campaign supporting the ESA. COEJL has sponsored "Operation Noah" in an effort to defend "God's endangered creatures." Each group defends the ESA as the modern way by which we imitate Noah, much to the dismay of those favoring more sweeping changes in the law.

available in LEXIS, NewsLibrary, Arcnws File; News: Eco-Evangelical Movement Works to Preserve Environment (CNN television broadcast, Feb. 24, 1996), available in LEXIS, NewsLibrary, Arcnws File; All Things Considered: Evangelical Christians Defend Endangered Species Act (National Public Radio broadcast, Jan. 30, 1996), available in LEXIS, NewsLibrary, Arcnws File. EEN's million dollar advertising campaign targeted eighteen states, see ABC World News Tonight, supra, while one thousand churches responded to EEN's call to become "Noah congregations," see Broadway, supra, at C8. I am a member of EEN, but I have had no involvement in its work on the ESA.

20. See, e.g., Babbitt, supra note 14, at 5.
21. See supra note 16 and accompanying text.
The idea of amending the ESA to give more protection to the species we care most about—bald eagles, grizzly bears, and the like—and less protection to species with less appeal is abhorrent to ecologists. Most opponents of the law approach the issue gingerly, and even the most sweeping bills to amend the ESA avoid any direct consideration of the value of particular species. But the effort to treat all species equally faces a dilemma. Choices between species appear inevitable because of the huge number of species and the limited amount of resources available to protect them. Choices between species occur in the implementation of the law, notwithstanding the image of the ESA as prohibiting discrimination between species. Yet the story of Noah suggests that choices among species are impermissible. In other words, when confronted with the task of choosing among species, we have to, we do, but we shouldn't.

Part I of this Article explains why choosing among species is inevitable. The large number of species that are endangered, the limited amount of resources for preserving biodiversity, and the competing demands presented by other societal problems make it impossible to protect every species. Part II describes how the implementation of the ESA acknowledges this inevitability by preferring some species over others in a variety of contexts. Part III examines how plants and animals provide invaluable utilitarian benefits ranging from food to medicine to tourism. Nonetheless, Mann and Plummer and other critics of the existing law are extremely effective in demonstrating that such utilitarian arguments do not justify treating all species equally. Instead, the case for protecting all species must depend on moral, religious or ethical arguments. Part IV considers the implications of Noah's example—and the biblical context in which it occurs—along with the theological, constitutional, moral, and legal arguments against reliance upon Noah as the basis for the ESA. I conclude that Noah

provides a compelling case for protecting all endangered species regardless of whether one believes that a flood actually occurred or whether one finds the scriptures authoritative. That appears to be impossible, though, so Part V contemplates how Noah would have made choices among species if he was forced to do so. My guess is that Noah would have tried to save the most species and the most different kinds of species possible. While Noah avoided making any such choices, the fact that we are already choosing among species today demands that we take greater care in determining how we do so. This approach does not answer many of the hard questions about how we should protect biodiversity or whether the ESA is working, but Noah's example does show that the goals of the ESA remain sound.

I. THE INEVITABILITY OF CHOOSING AMONG SPECIES

The multiple threats to endangered species lead to one conclusion: not all species can be saved. The threshold issue is to define what constitutes a "species." In Noah's Choice, Mann and Plummer chart the evolution of scientific thinking from classifying the animals that were carried on the ark, to the taxonomical work of eighteenth century Swedish botanist Carl Linnaeus, to Darwin's theories, and finally to the current understanding of species as "special groups of organisms that breed together." That technical debate has significant ramifications for the protections of endangered "species." As the definition of "species" becomes more and more precise, the number of species increases, and more animals or plants will be eligible to stake a claim for protection. The scientific debates have spilled over into the law as parties dispute the appropriate classification of a species. As one author recently


put it, "the classification of animals, like that of any group of significant objects, is apt to tell as much about the classifiers as about the classified." With this in mind, some reformers have targeted the ESA's protection of "subspecies" as unjustified. Such a change would have dramatic consequences: the northern spotted owl, for example, is a subspecies of the spotted owl, and would no longer receive the ESA's protection.

Thus defined, the first problem confronting any effort to prevent a species from going extinct is the sheer number of Leatherflower from the list of candidate species because recent studies show no clear differences from another species); Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition to List the Alexander Archipelago Wolf as Threatened and to Designate Critical Habitat, 62 Fed. Reg. 46,709 (1997) (noting that "[t]he taxonomic status of wolves in southeast Alaska . . . is uncertain," and refusing to list the wolf under the ESA for other reasons).


species present in the United States and throughout the world. Mann and Plummer present a staggering number of statistics: 1.8 million species have been discovered, but drawing on the type of scientific research that identified 1200 different kinds of beetles in a single tree, scientists estimate that there may be as many as 100 million different species on the earth today.\textsuperscript{29} Other sources provide similar numbers.\textsuperscript{30} And those numbers do not include subspecies. Furthermore, the total number of species itself is far less important than the number of species that are endangered. Scientists disagree on that number. At one end of the spectrum, Harvard biologist Edward O. Wilson estimates that 27,000 species are becoming extinct each year; at the other end, the World Conservation Monitoring Centre counts only 1237 extinctions since the year 1600.\textsuperscript{31} The uncertainty is compounded by our inability to know when an extinction occurs.\textsuperscript{32}

\textsuperscript{29} See MANN \& PLUMMER, supra note 11, at 8, 249 (citing WILSON, supra note 27, at 132-41, who estimated that there could be anywhere from 10 million to 100 million total species in the world); \textit{id.} at 41 (describing the research of entomologist Terry L. Erwin in a Panamanian forest).


\textsuperscript{31} MANN \& PLUMMER, supra note 11, at 14, 51; see also GREGG EASTEBROOK, A MOMENT ON THE EARTH 556-62 (1995) (questioning the higher estimates of extinction rates); MYERS, supra note 30, at 5 (suggesting that "it is not unrealistic to suppose that . . . at least one species is disappearing each day"); NATIONAL RESEARCH COUNCIL ET AL., supra note 27, at 33-35 (summarizing studies of extinction rates); Stephen Budiansky, \textit{Chaos in Eden, New Scientist}, Oct. 14, 1995, at 33, 34 ("Actual field studies document a global extinction rate of one species per year. The true number is almost certainly much greater, but there is simply no hard evidence of the numbers cited by Wilson.").

Determining the number of species in danger of extinction would assist in planning for the effort to protect such species, but again, that number is less important to the current political debate than the number of species listed as endangered or threatened under the ESA. The protections of the ESA extend to species that are formally listed as "endangered" (i.e., "in danger of extinction throughout all or a significant portion of its range") or "threatened" (i.e., "likely to become endangered... within the foreseeable future"). The list includes 896 endangered species and 230 threatened species. But the list could grow much longer. Over 20,000 species were proposed for listing before the ESA was two years old. The United States Fish & Wildlife Service (FWS) has formally identified 173 species as candidates for listing. Another 10,000 may deserve further consideration.

The huge (albeit uncertain) number of species combined with environmentally destructive human activities and natural events results in many endangered species, which in turn yields a growing list of such species. As the number of listed species grows, the cost of protecting endangered species grows as well. For example, the Karner blue butterfly lives in fields of lupine, a flower that flourished throughout the east and

Borneo River Shark one hundred years after it was last seen alive).

35. See MANN & PLUMMER, supra note 11, at 162.
midwest during the nineteenth century but which has become much less common today. The destruction of the lupine fields has left scattered populations of the Karner blue butterfly in a line of states ranging from New Hampshire to Minnesota. The FWS listed the Karner blue as endangered in 1992.38 Buying the land necessary to protect the Karner blues that live near Albany, New York alone would cost at least $150 million.39 Protecting Karner blues elsewhere, as would be necessary to prevent a catastrophic event from wiping out a single population of the species, would cost "billions of dollars."40

A similar controversy has surrounded two songbirds (the black-capped vireo and the golden-cheeked warbler), the Barton springs salamander, and several cave-dwelling insects in the Hill Country west of Austin, Texas. Efforts have long been underway to establish a system of preserves for those species amidst the rapid urban sprawl of Austin.41 Estimates of the cost of protecting the Hill Country species range from hundreds of millions of dollars (to fully implement the biologists' initial plan) to $86 million (to purchase the land to be set aside

38. See Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Karner Blue Butterfly, 57 Fed. Reg. 59,236 (1992) (to be codified at 50 C.F.R. pt. 17). The FWS, located within the Interior Department, is responsible for animals and plants found on land or fresh water. The National Marine Fisheries Service (NMFS) within the Commerce Department is responsible for marine animals and plants. See, e.g., RICHARD LITTELL, ENDANGERED AND OTHER PROTECTED SPECIES: FEDERAL LAW AND REGULATION 15 & n.6 (1992).


40. Id. at 110. For example, Midwest Steel paid $1.5 million to relocate 1454 lupine plants (and the butterflies they attracted) from the company's Indiana plant to a new site. See id. at 105; see also Mike Beirne, Mill Turns Gardener to Save Endangered Species of Butterfly, AMERICAN METAL MARKET, Apr. 1, 1993, available in 1993 WL 3119901. Mann and Plummer previously wrote about a conflict involving another endangered butterfly in Oregon, see Charles C. Mann & Mark L. Plummer, The Butterfly Problem, ATLANTIC MONTHLY, Jan. 1992, at 47, 47, prompting the FWS to rebut their claims in a published report. See ESA FACTS, supra note 36, at ch. III (indicating that Oregon state law, not the ESA, blocked the proposed golf course described by Mann and Plummer), reprinted in Washington ESA Hearing Part III, supra note 12, at 291.

41. See MANN & PLUMMER, supra note 11, at 176-211. For other descriptions of Austin's experience with the ESA, see Louisiana & Texas ESA Hearings, supra note 7, at 103-52, 222-79; J.B. Ruhl, Regional Habitat Conservation Planning Under the Endangered Species Act: Pushing the Practical and Legal Limits of Species Protection, 44 Sw. L.J. 1393, 1413-23 (1991); Melinda E. Taylor, Promoting Recovery or Hedging a Bet Against Extinction: Austin, Texas's Risky Approach to Ensuring Endangered Species' Survival in the Texas Hill Country, 24 ENVTL. L. 581 (1994).
under a 1990 plan). Those estimates only include the cost of purchasing the land; ongoing maintenance costs and the other costs of establishing a system of preserves would drive the total sum higher. Moreover, the effect of the regulatory demands of the ESA adds over $9000 per acre to the cost of development in the area.

There are many other examples. The recovery plan for endangered salmon will cost hundreds of millions dollars annually. California gnatcatchers live on undeveloped coastal land north of Los Angeles—land worth as much as $200,000 per lot, so that establishing reserves for the gnatcatcher could cost billions of dollars. The San Bernadino County Medical Center Re-
placement Facility spent over $3 million to mitigate its impact on the Delhi Sands Flower-Loving Fly.46 Protecting the Stephens kangaroo rat might cost $50 million.47 And these examples only show the cost of protecting a few species, not protecting all species. In Mann and Plummer's words, "protecting all species would be a fantastically costly enterprise."48

"Fantastically costly" lacks the precision required by an accounting firm, but it provides a fair description of the bottom-line cost of protecting the increasing number of endangered species. The other side of the ledger shows that we have limited resources available for endangered species protection and many competing demands to use our limited resources for other purposes. Mann and Plummer complain of the "scandalous unwillingness of Congress to back this lofty mission with significant budget outlays."49 The appropriations numbers prove their point.

All parts of the enforcement of the ESA are affected by the limited funds available. The FWS does not have nearly enough resources to process all of the candidates proposed for the list. It would have taken the seven agency listing experts 500 years to review all of the 20,000 candidates proposed for the list in the first two years that the ESA was in effect.50 The situation has not improved much since then. Funding for the FWS increased "slightly faster than the pace of listings for native U.S.


47. See Riverside ESA Hearing, supra note 45, at 11 (testimony of Scott Woodward, Building Industry Association of Southern California).

48. MANN & PLUMMER, supra note 11, at 133. The estimates of the cost of protecting the species currently listed as endangered range from $4.6 billion to $9.1 billion. See Ruhl, supra note 8, at 1115 n.35 (citing a 1990 FWS report); H.R. 2275 Hearing, supra note 8, at 371 (fact sheet prepared by the Grassroots ESA Coalition relying on FWS estimates that the cost of recovery alone will be between $7.3 and $9.1 billion, based on the average cost to list, recover and delist a species).

49. MANN & PLUMMER, supra note 11, at 220; see also id. at 232-33 (chastising Congress for "refusing to back necessary increases in the budget for protection," and referring to the FWS's "impossible task of saving everything on a tiny budget").

50. See id. at 162.
species" between 1974 and 1989.\textsuperscript{51} Even by 1993, however, it was estimated that it would take another forty-three years to list just those species already under consideration.\textsuperscript{52} Thus, the agency has cited its "limited budget" as the reason for not listing certain species earlier,\textsuperscript{53} and the courts have agreed that it is "impossible" for the FWS to list all deserving species because of the insufficient funding.\textsuperscript{54} Accordingly, "when the [FWS] undertakes one listing activity, it inevitably forgoes another."\textsuperscript{55}

Likewise, the ESA's provision empowering the government to acquire the habitat of endangered species "is woefully under-funded and shows no signs of changing in that respect."\textsuperscript{56} The

\begin{itemize}
\item \textsuperscript{51} Faith Campbell, \textit{The Appropriations History, in BALANCING ON THE BRINK OF EXTINCTION: THE ENDANGERED SPECIES ACT AND LESSONS FOR THE FUTURE} 134, 135 (Kathryn A. Kohm ed., 1991) [hereinafter KOHM]. The appropriations for the endangered species program of the FWS, the lead agency for most endangered species, increased from less than $5 million in 1974 to over $53 million in 1995, as detailed in \textit{id. tbl. 2 (1974-1989 statistics)}; \textit{ESA FACTS, supra note 36, at ch. 1 (1990-1995 statistics), reprinted in Washington ESA Hearing Part III, supra note 12, at 276}. The figures for the endangered species programs of the Forest Service and the Bureau of Land Management are provided in Campbell, supra, at 135 tbl. 3.
\item \textsuperscript{52} See Oliver A. Houck, \textit{The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce}, 64 U. COLO. L. REV. 277, 292 (1993). Houck adds that "the pace of listing has reflected the pace of funding," and that "Interior has steadfastly resisted additional funding for ESA listing" because it is perceived as a low priority. \textit{id. at 293}.
\item \textsuperscript{54} Sierra Club v. Babbitt, 948 F. Supp. 56,57 (E.D. Cal. 1996) (upholding the FWS's failure to list the peninsular big horn sheep because of limited funds).
\item \textsuperscript{55} \textit{FWS 1997 Priority Guidance, supra note 53, at 64,480}.
\item \textsuperscript{56} Ruhl, \textit{supra note 43, at 585 & n.77} (indicating that the FWS spent $238,457,238 to acquire 349,405 acres of land between 1967 and 1993); see also \textit{id. at 656-57 n.311} (noting that "funding Austin's biodiversity initiative alone would almost match all the federal government's historical endangered species habitat preservation outlays for all species, and even then full funding of the Austin proposal would not satisfy all the habitat preservation goals of the various Austin area endangered species' recovery plans"); Campbell, \textit{supra note 51, at 141-43} (describing the history of funding for land acquisition).
\end{itemize}
cooperative grants from the federal government to help states preserve federally protected species receive one quarter of the appropriations that would be necessary to fund each agreement.\textsuperscript{57} Recovery plans suffer from a similar lack of funding. The 306 existing recovery plans would cost nearly $900 million to complete, but the FWS requested only $84 million in fiscal year 1995 to implement them.\textsuperscript{58} Likewise, each Habitat Conservation Plan (HCP) "requires considerable expense," though usually most of the cost is paid by affected private parties.\textsuperscript{59} The current federal budget for spending on endangered species programs pales in comparison to these needs, and calls for dramatically increased funding are likely to go unheeded. The budget for endangered species programs fluctuated during the 104th Congress, which cut funding one year and then raised it

\textsuperscript{57} See Campbell, supra note 51, at 141. For a description of the role of cooperative agreements between states and the federal government, see THE ENDANGERED SPECIES ACT: A COMMITMENT WORTH KEEPING, supra note 27, at 24-25.

\textsuperscript{58} See Ruhl, supra note 43, at 588 n.87 (citing NATIONAL WILDERNESS INSTITUTE, GOING BROKE? COSTS OF THE ENDANGERED SPECIES ACT AS REVEALED IN ENDANGERED SPECIES RECOVERY PLANS 1 (1994)); see also Campbell, supra note 51, at 140-41 (discussing the lack of funding for recovery plans); Houck, supra note 52, at 346-47 (same). The FWS cautions, however, that the cost estimates contained in recovery plans overstate the true cost of achieving the recovery goal for a species. See U.S. Fish & Wildlife Serv., Division of Endangered Species, Endangered Species Recovery (visited Apr. 13, 1998) <http://www.fws.gov/9endspp/faqrecov.html> ("The recovery plan is best thought of as a menu. To have a healthy meal in a restaurant, one would not total an entire menu to arrive at the cost of one dinner. Not all the tasks in a recovery plan need to be implemented to reach the recovery goal.").

\textsuperscript{59} MICHAEL J. BEAN ET AL., RECONCILING CONFLICTS UNDER THE ENDANGERED SPECIES ACT: THE HABITAT CONSERVATION PLAN EXPERIENCE 15 (1991); see also id. at 33 (noting that one group seeking a HCP "was constrained by the prohibitive cost (potentially $100 million) of a preserve network"); William J. Snape, Biodiversity's Safety Net: Saving Endangered Species, in BIODIVERSITY AND THE LAW 37 (William J. Snape ed., 1996) ("In addition to the costly requirements of biological research and land planning, millions of dollars will be needed to purchase easements or fee simple title to wildlife corridors and reserves."). The 1982 amendments to the ESA authorized HCPs as a means by which a private party can incidentally "take" endangered species, otherwise prohibited by section 9, provided that the party has developed a sufficient plan to protect the species. See 16 U.S.C. § 1539(a)(2) (1994). Few HCPs were approved prior to the 1990's, see BEAN, supra, at 7-10 (describing each HCP), but the Clinton Administration has made the development of HCPs a priority. See Oliver A. Houck, On the Law of Biodiversity and Ecosystem Management, 81 MINN. L. REV. 869, 954-59 (1997) (describing the evolution of HCPs).
the next." When Secretary Babbitt refers to "an era of constrained budgets" and President Clinton announces that "the era of big government is over," even the most favorable scenario will not produce the kind of money needed to preserve all endangered species.

But the problem is not the lack of resources per se. It is conceivable (though still not entirely certain) that we could implement every plan to protect every endangered species if we spent the entire $1.5 trillion annual federal budget on endangered species protection. Obviously we have other priorities. Sometimes those priorities appear frivolous. The 1991 FWS budget for endangered species was matched by the money spent on Domino's pizza in Washington, D.C., that year. In other instances our priorities reflect our affluent society. The endangered species living in the Hill Country west of Austin have conflicted with the building of single-family homes, apartment buildings, fast-food restaurants, convenience stores, gas stations, light industry, supermarkets, and countless other projects. The habitat of the Karner blue butterfly in Albany was replaced by residential subdivisions, a racetrack, the Albany...
bany Country Club, a state office complex, a Niagara Mohawk power substation, four lanes of Interstate Highway 90, the State University of New York at Albany, and the Crossgates Mall. The development of hot springs into commercial resorts has helped nine species of plants become endangered in California. The famous snail darter almost defeated the Tellico Dam.

Protecting endangered species habitat instead of building another 7-Eleven presents an easy choice. But Mann and Plummer worry about the cumulative effects of such decisions:

We do not need one more convenience store. But that doesn't mean we can easily do without all convenience stores. . . . [A]dopt a policy of no more stores and people will be out of work and unable to find the things they need. Then shut down the banks, the golf courses, the shopping malls, the parking lots, and the gas stations and watch the costs to people's hopes and dreams rise to ever more unacceptable heights.

Of course, people live without golf courses and shopping malls in most parts of the world, so the debate about protecting the habitat of endangered species may reduce to a debate about the kind of society in which we want to live. Such decisions must be made by the citizens of Albany, Austin, the Pacific Northwest, and most other areas throughout the United

65. See id. at 83-85, 100-01.


67. See MANN & PLUMMER, supra note 11, at 164-75. Mann and Plummer recognize that there were other reasons for stopping the dam. See id. at 171 (quoting former Interior Secretary and God Squad member Cecil Andrus as saying, "I hate to see the snail darter get the credit for stopping a project that was ill-conceived and uneconomical in the first place"); see also Zygmunt J.B. Plater, In the Wake of the Snail Darter: An Environmental Law Paradigm and Its Consequences, 19 U. MICH. J.L. REFORM 805, 814-18 (1986).


69. Compare CREATION AT RISK? RELIGION, SCIENCE, AND ENVIRONMENTALISM 28 (Michael Cromartie ed., 1995) (assertion by Ronald Sider, president of Evangelicals for Social Action, that "[u]sually the choice is between increased affluence or wiping out species," not between killing humans or killing species), with id. at 31 (response by Ronald Bailey, executive producer of New River Media, that "affluence saves human lives" and "[a]ffluence is a human good almost without limits").
States. More than 200 million people live near a species that is listed as endangered or threatened; so even though endangered species cluster in certain areas, one day many of us may have to choose whether to preserve land for endangered species habitat or to use it for some other purpose.

The hardest cases occur when the preservation of an endangered bird or animal comes at the cost of forgoing some other critical endeavor. Protecting the Oklahoma habitat of the American burying beetle has blocked the construction of a highway connecting a Native American community to the nearest hospital on the other side of the mountains; the beetle may also destroy the coal mining jobs of poor families. The residents of Wilton, New York, must live with mosquitoes during the summer because the easiest way of controlling them would harm the Karner blue butterfly. The butterfly also lives on a camp that the Boy Scouts want to sell to fund programs for urban children, thereby preventing the sale. The

70. See MANN & PLUMMER, supra note 11, at 15.

71. See A.P. Dobson et al., Geographic Distribution of Endangered Species in the United States, 275 SCIENCE 550, 551 (1997) (study concluding that endangered species are concentrated in “hot spots” in California, Florida, Hawaii and a few other states); see also Charles C. Mann & Mark L. Plummer, The Geography of Endangerment, ATLANTIC MONTHLY, Dec. 1993, at 101 (commenting that “protected species are spread unevenly and often unexpectedly,” noting that there are no listed species in the Bronx but seven in nearby Suffolk County on Long Island). For maps indicating the distribution of endangered species and candidates for the endangered species list by state, see Department of the Interior and Related Agencies Appropriations for Fiscal Year 1995: Hearing Before the Subcomm. of the Comm. on Appropriations, U.S. Senate, 103d Cong., 2d Sess. 1363-64 (1994); Barton H. Thompson, Jr., The Endangered Species Act: A Case Study in Takings & Incentives, 49 STAN. L. REV. 305, 311 (1997). A similar concentration of species exists worldwide. See Conservation International, Hotspots Map Offers Solutions to Global Species Extinction Crisis (Feb. 13, 1997) (press release, on file with author) (reporting on a map prepared by Conservation International that shows that 50% of biological diversity is contained within less than 2% of the earth’s land).

72. See MANN & PLUMMER, supra note 11, at 15-24, 237; see also National Ass’n of Home Builders v. Babbitt, 130 F.3d 1041, 1044 (D.C. Cir. 1997) (describing how a planned county hospital had to be relocated to avoid the habitat of the endangered Delhi Sands Flower-Loving Fly).

73. See MANN & PLUMMER, supra note 11, at 95-97, 103-04, 114; see also Riverside ESA Hearing, supra note 45, at 43 (testimony of Carolyn Powers, Tijuana River Valley Task Force) (describing a similar conflict between mosquito controls and the endangered Bell’s vireo); 143 Cong. Rec. S9412 (daily ed. Sept. 16, 1997) (remarks of Sen. Kempthorne) (reporting that a boy in Laramie, Wyoming, contracted encephalitis from a mosquito after the community’s mosquito abatement program was suspended because of the ESA).

74. See MANN & PLUMMER, supra note 11, at 104.
black-capped vireo delayed the redesign of a dangerous Texas highway where two dozen people were killed in recent years. And those are only the choices recorded in *Noah's Choice*. Once we move outside our borders into developing countries that struggle to feed their people, the required choices between endangered wildlife and basic human needs become more frequent and more frightening.

Nor is the conflict limited to the use of any particular piece of land. It is also between using scarce funds to protect endangered species and using those funds for other purposes. Endangered species programs are not the only worthwhile endeavors facing declining government appropriations. Environmental pollution, crime prevention, inadequate education, poverty, and a host of other needs compete with endangered species for money and attention. To cite but one drastic example, one county official has recounted how five of his colleagues left a meeting crying when they could not fund an immunization program for infants at a time when they were required to spend millions for en-

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75. See id. at 197. Mann and Plummer have also described how a plan to fix another dangerous highway depends on anticipated tax revenues from a development that has stalled amidst California gnatcatcher habitat. See Mann & Plummer, *supra* note 45, at 45-47.

76. For others, see Catron County Bd. of Comm'rs, N.M. v. United States Fish & Wildlife Serv., 75 F.3d 1429, 1432-33 (10th Cir. 1996) (claim that reserving water to protect the threatened spikedace and loach minnow would cause flooding of county road, bridges and fairgrounds); Virgin Islands Tree Boa v. Witt, 918 F. Supp. 879, 885-91 (D.V.I. 1996), aff'd mem., 82 F.3d 408, 408 (3d Cir. 1996) (allegation that the construction of emergency housing in the aftermath of Hurricane Marilyn would harm an endangered snake); *Moratorium on the Listing Provisions of the Endangered Species Act: Hearing Before the Subcomm. on Drinking Water, Fisheries, and Wildlife of the Comm. on Environment and Public Works, U.S. Senate, 104th Cong. 11, 78-79 (1995)* [hereinafter ESA Listing Moratorium Hearing] (statement of Sen. Hutchison) (describing a conflict between protecting the Arkansas River shiner and assuring the public water supply for residents of west Texas); *Endangered Species: NMFS Lists California Coho Salmon Under ESA, Governor Wilson Protests*, 1996 Daily Env't Rep., (BNA) 209 (Oct. 29, 1996), available in WESTLAW, BNA-DEN Database (quoting Governor Wilson as complaining that the listing of the coho salmon "could result in a virtual shutdown of logging, mining, ranching and other agricultural activity over large parts of California"). See generally *Texas Shrimp Ass'n v. Daley*, 1997 U.S. Dist. LEXIS 17875 (S.D. Tex. Nov. 7, 1997) ("It is an unfortunate reality in our modern world that the interests of humans and the other creatures of the world sometimes clash. Normally, in these situations, humans win. The ESA, however, was enacted to level this playing field.").

77. See *Harry T. Edwards, Goals in Life Worth Pursuing*, 10 FLA. ST. U. L. REV. 517, 521 (1983) (observing that "the solutions for certain of these problems are the causes of others").
dangered species preservation.\textsuperscript{78} Necessarily, then, any decision to pay more for endangered species means that we pay a little less for everything else. That is the inevitable choice identified in \textit{Noah's Choice}.\textsuperscript{79}

The result is that we can probably save \textit{any} species, but we cannot save \textit{every} species.\textsuperscript{80} The successful efforts to save the American bald eagle demonstrate that we have the ability to preserve a species when we commit the resources necessary to do so. But the bald eagle is only one species. Other birds have gone extinct in the United States despite the ESA, and many

\textsuperscript{78} See \textit{Endangered Species Protection Hearing}, supra note 43, at 61-62 (testimony of Sam Sharp, Supervisor, Imperial County, California).

\textsuperscript{79} See MANN \& PLUMMER, supra note 11, at 25-26 ("Inevitably, the money for [protecting endangered species] would come from other deserving project, frustrating some other human aspiration."); \textit{id.} at 101 (preserving land in Albany for the Karner blue butterfly "would eliminate a sizeable chunk of tax revenues, a big concern to a small city scrambling to pay for schools, libraries, hospitals, and roads"); \textit{id.} at 204 ("By paying for biodiversity, [the residents of the Austin area] would be cutting into their ability to fund other programs in years to come—paying for the future of species instead of the future of schools, in other words."); \textit{id.} at 213 ("[Society cannot] extract money from developers and give it to black-capped vireos that need protection . . . and simultaneously ensure that good housing is available and affordable to everyone. Or good health care, for that matter, or a good education."); see also \textit{id.} at 174 (quoting similar remarks by Senator Jake Garn, Republican of Utah).

\textsuperscript{80} See MANN \& PLUMMER, supra note 11, at 113 (referring to "[t]he practical impossibility of saving everything"); \textit{id.} at 229 (claiming that "the ark is not big enough" for all living things); BRYAN G. NORTON, \textit{WHY PRESERVE NATURAL VARIETY?} 243, 257 (1987) (admitting that the resources available to preserve endangered species cannot save all species); Holly Doremus, \textit{Patching the Ark: Improving Legal Protection of Biological Diversity}, 18 \textit{ECOLOGY L.Q.} 265, 305 \& n.260 (1991) (explaining why we cannot protect every species "at least in the absence of drastic reductions in human population and drastic changes in human lifestyles"); Zygmunt J.B. Plater, \textit{The Embattled Social Utilities of the Endangered Species Act—A Noah Presumption and Caution Against Putting Gasmasks on the Canaries in the Coalmine}, 27 \textit{ENVTL. L.} 845, 864 (1997) ("[T]he potentially large numbers of listable species make it impossible even to consider, never mind reverse, every anthropogenic threat of species extinction."); Elizabeth Royte, \textit{On the Brink: Hawaii's Vanishing Species}, NAT'L GEOGRAPHIC 2, 36 (Sept. 1995) ("[S]cience cannot save every endangered species. There is never enough time, never enough money."); Mark Sagoff, \textit{On the Preservation of Species}, 7 \textit{COLUM. J. ENVTL. L.} 33, 84-35 (1980) (agreeing that "[i]t is impossible, or at least impractical" that we can preserve every species "no matter how inconsequential the benefits or how great the costs"); Martin L. Weitzman, \textit{On Diversity}, 107 \textit{QUARTERLY J. ECON.} 363, 363 (1992) ("We cannot preserve everything . . . Given our limited resources, preservation of diversity in one context can only be accomplished at some real opportunity cost in terms of well-being forgone in other spheres of life . . . .").
more birds (and mammals, and insects, and fish and plants) remain endangered. We lack the resources and the willingness to take the steps that are required to assure the recovery of all of those species. There are even times when the actions necessary to protect one endangered species actually harm another endangered species. If those limits exist, then "we must choose."  

II. THE CURRENT PRACTICE OF CHOOSING AMONG SPECIES

The common image of the ESA is that it prohibits any choices among species. Mann and Plummer, for example, complain that the law prevents any balancing between endangered species and other societal needs. In their view, the ESA dictates that all endangered species must be treated equally, and that all endangered species are more important than everything else.

They exaggerate. To be sure, the protections of the ESA extend to any species that is endangered or threatened by extinction. Yet the ESA itself makes some distinctions among species. Plants and insects receive less protection than mammals, fish, birds, and reptiles. The controversial prohibition on "taking" endangered species applies to fish or wildlife, not to plants. Instead, endangered plants on federal land cannot be removed, maliciously damaged, or destroyed; the protection of endangered plants on other land is subject to the strictures of state law. Insects receive less than complete protection, too.

81. See, e.g., Bradley C. Karkkainen, Biodiversity and Land, 83 CORNELL L. REV. 1, 19 (1997) (explaining how "efforts to protect a single species may sometimes have adverse effects on other species or on ecosystems"); Melanie J. Rowland, Bargaining for Life: Protecting Biodiversity Through Mediated Agreements, 22 ENVTL. L. 503, 508 (1992) (citing a telephone conversation in which Michael Bean of the Environmental Defense Fund described how increasing the water flow in the Everglades will benefit the woodstork even as it harms the Everglades kite).

82. MANN & PLUMMER, supra note 11, at 214 (emphasis in original).

83. See, e.g., id. at 175 (arguing that Congress "decided to fix an inadequate balancing mechanism by jettisoning the notion of balance altogether").


85. See 16 U.S.C. § 1538(a)(2)(B) (1994). Plants do, however, receive the same protection as other species from federal actions that would jeopardize the continued existence of a species. See Ruhl, supra note 8, at 1119.
Subspecies of insects are not protected by the ESA. The Secretary of the Interior may decide not to preserve an endangered insect species that "constitute[s] a pest whose protection under the [ESA] would present an overwhelming and overriding risk to man."

Nor does the ESA protect all animals, birds, or fish. The ESA offers no help to deer and cardinals and dolphins because they are not endangered or threatened with extinction; therefore, a landowner can "take" a deer without threat of federal sanction. More importantly, the ESA protects only those species that have been formally listed as endangered or threatened. No species were listed during most of 1995 and the beginning of 1996 because Congress and President Clinton approved a temporary moratorium on the listing of any additional species. The moratorium serves as a reminder that the ESA operates to protect species only once they are formally listed, no matter how endangered they may be in fact.

Other parts of the ESA establish priorities among species. The FWS's guidelines for listing species and for recovery plans give greatest priority to protecting species in danger of extinction, second priority to maintaining the status quo, and lowest priority to actually promoting the recovery of a species. Fed.

88. Here is the exception: an unlisted species may be protected by the ESA if it closely resembles a listed species. See 16 U.S.C. § 1533(e) (1994). The ESA contains an emergency listing provision that enables the government to respond immediately to evidence that a previously unlisted species is in danger of becoming extinct. See 16 U.S.C. § 1533(b)(7) (1994).
eral funds for state endangered species programs are distrib-
uted in part based on the relative urgency of the threat to the
survival of the species that will benefit from such funds.91 The
protection that a species receives also depends in part on the
likely impact of human economic activities. When establishing
recovery plans, the agency must give priority to species most
likely to benefit from such a plan, particularly if a species con-
flicts with an economic development project.92 When deciding
whether or not to designate critical habitat for a species, the
FWS must determine that the benefits that such a designation
would provide to a species outweigh the social and economic
benefits of not designating any critical habitat.93

None of those criteria make any value judgments about
the intrinsic worth of any particular species. Those provisions
of the ESA may result in some species receiving less protection
than others, but that judgment is made based on the impact on
the species, not the qualities of the species itself. For example,
the critical habitat designation can be influenced by the fact
that all of the habitat lies in prospective residential lots in Or-
ange County, but the ESA does not ask whether such habitat is
for an endangered kangaroo rat or an endangered bald eagle.

The actual implementation of the ESA reveals a different
story. Tulane Professor Oliver Houck has described how each
aspect of the ESA—listing, designating critical habitat, consul-
tations to avoid jeopardizing a species, the God Squad exemp-
tion process, recovery plans, and the prohibition on takings—is
applied in a manner that affords the government broad discre-

tion in enforcing the law. Indeed, Houck concludes that the
ESA “has, in effect, been substantially amended through
regulations and practice, transforming it from an act of specific
requirements into a more discretionary permit system.”94 With
such discretion, the government (and others) can choose among
species. And they do, to the frustration of environmentalists
(who favor strict enforcement of the law) and developers (who
complain that they do not know the rules of the game) alike.

Consider the ways in which we make choices among species
already. First, the FWS must decide the order in which species
will be considered for listing. The limited resources and

(1996).
94. Houck, supra note 52, at 358.
threats of congressional reprisals tempt the agency to list species that are noncontroversial, either because they are popular with the public or because their protection will not require great sacrifices. The first species that the agency listed after Congress passed the ESA in 1973 were three types of Australian kangaroos, none of which would conflict with projects in the United States. The agency strained to avoid listing the snail darter precisely because it feared the fish would undermine public support for the ESA itself. It resisted listing the northern spotted owl as endangered, doing so only after a court order, and then using a threatened (instead of endangered) listing to minimize the impact in some areas. It may have had a similar strategy in mind when it designated the California red-legged frog as threatened in the first addition to the list after the moratorium expired. Frogs have some popular appeal, albeit not as great as grizzly bears and bald eagles, but this particular frog was memorialized by Mark Twain as the Celebrated Jumping Frog of Calaveras County. Likewise, the 1996 listing of seventy-five Hawaiian plants was criticized as "perfectly calculated for an election year" because it would not adversely affect many people. By contrast, very few insects

95. See Mann & Plummer, supra note 11, at 163. For a chart indicating the number of species added to the list each year between 1967 and 1992, see ESA Facts, supra note 36, at ch. 1.

96. See Mann & Plummer, supra note 11, at 166 (quoting the head of the FWS's Office of Endangered Species as saying that "it was inevitable that the outcome would be to weaken the act, and I didn't want to save the snail darter at the expense of the law"); see also Michael J. Bean, Looking Back over the First Fifteen Years, in Korn, supra note 51, at 41 (providing several other examples of the FWS declining to list a species because of political pressure).

97. See Northern Spotted Owl v. Lujan, 758 F. Supp. 621, 629 (W.D. Wash. 1991) (finding the failure to designate critical habitat for the northern spotted owl arbitrary and capricious); Northern Spotted Owl v. Hodel, 716 F. Supp. 479, 483 (W.D. Wash. 1988) (finding the failure to list the northern spotted owl arbitrary and capricious); see also Ruhl, supra note 8, at 1124 (noting that "recently FWS has attempted to manage politically contentious species listing actions by making a threatened status listing followed by a specialized section 4(d) rule").


were listed during the 1980s, probably because there were no invertebrate specialists at the FWS's headquarters in Washington and because field office staff resist such listings. The bigger picture shows that today there are 331 mammals and 274 birds listed as endangered or threatened, but only forty-one insects, twenty-three snails, and nineteen crustaceans.

The FWS enjoys even greater discretion once a species is listed. It must decide whether to designate critical habitat for a species. It must also conclude how much money to devote to developing and implementing a recovery plan for a particular species. Additionally, it must resolve which habitats it can purchase under the section 5 land acquisition program and which habitat conservation plans to encourage and to approve. Lastly, the FWS (or the God Squad) must determine which projects are subject to section 7's prohibition on federal actions that would jeopardize the continued existence of the species.

Experience shows that the agency makes some of those decisions with an eye toward the species that is at stake. Indeed, one writer has indicated that the FWS follows "an informal hierarchy in which mammals are often given priority over birds, birds over cold-blooded vertebrates, and cold-blooded vertebrates over invertebrates—with plants trailing behind them all." Government spending patterns support that claim. A recent study identified a "spending preference to the 'higher' animals in the following order: mammal-bird-fish-reptile-amphibian." Plants do not even make that list. More spe-

that the listing allowed the Clinton Administration to "claim that it has listed eighty-five species since the moratorium was lifted but avoid taking any actions that may burden potential voters in politically important states like California or that may adversely affect private landowners in any number of states." Id. Remember that the ESA's prohibition on habitat destruction by private parties does not apply to endangered plants. See supra text accompanying note 84.

101. See Dennis D. Murphy, Invertebrate Conservation, in KOHM, supra note 51, at 183.

102. See FWS Box Score, supra note 34, at 1-2.

103. Murphy, supra note 101, at 186; see also Doremus, supra note 80, at 311-12 (asserting that the FWS "has responded to political pressures by concentrating their listing and recovery efforts on highly visible, charismatic species, as well as on those close to recovery"); Karkkainen, supra note 81, at 20-21 (describing the ways in which the application of the ESA has generally favored "high-profile 'charismatic' species").


105. See Endangered Species Act Implementation: Oversight Hearing Be-
cifically, federal and state agencies spent at least $10 million between 1989 and 1991 on each of the following ten species: the bald eagle, the northern spotted owl, the Florida scrub jay, the West Indian manatee, the red-cockaded woodpecker, the Florida panther, the grizzly bear, the least Bell's vireo, the American peregrine falcon, and the whooping crane. Over $30 million was spent on the bald eagle alone. Cumulatively, the top ten species account for over half of all spending on endangered species preservation. And almost all of the species in the top ten are large, popular mammals or birds. By contrast, less than $10,000 was spent on such species as the Texas blind salamander, the sand skink, and the Alabama cave fish, even though they are much more genetically distinct or much more in danger of extinction.

The money provided to state endangered species programs pursuant to ESA section 6 shows a similar bias. The FWS recently announced that it had awarded $2.7 million for the acquisition of habitat necessary to satisfy HCPs in four states. The announcement noted the funds would be used to protect the bald eagle, the peregrine falcon, sea turtles, and a number of songbirds. While nearly one hundred other endangered species would be helped by the money distributed to the states, the FWS press release neglected to identify any of those presumably less popular species.

fore the House Comm. on Resources, 104th Cong. 18-20, 119-22 (1996) (testimony of Dr. Faith Campbell recounting the ways in which plants receive a low priority in the implementation of the ESA); 142 CONG. REC. E807 (daily ed. May 15, 1996) (statement of Rep. Forbes) (complaining that "few Federal dollars have been used to protect the habitat of critically imperiled plant species").

106. See Metrick & Weitzman, supra note 104, at 1; see also THE NATURE CONSERVANCY, THE WORKINGS OF THE ENDANGERED SPECIES ACT: A SUMMARY OF OUR FINDINGS 3 (1995) (referring to "the historic overemphasis on recovery programs for charismatic megafauna"); Ruhl, supra note 8, at 1115 n.35 (relying on Metrick and Weitzman's study to conclude that "FWS has been criticized for spending the vast majority of its recovery planning and implementation budget on 10 popular 'calendar species'"); Suzanne Winckler, Stopgap Measures, ATLANTIC MONTHLY, Jan. 1992, at 77 (suggesting that the majority of funding goes to species that "are among the most beautiful on earth").

107. Id.; see also Mann & Plummer, supra note 40, at 59 (noting that in 1990 the government spent $3.8 million on the Florida panther and $500 on the northeastern beach tiger beetle even though both species rated the same priority according to the FWS's formal guidelines).

The same pattern can be seen in the application of the section 7 prohibition on federal projects that would jeopardize the continued existence of a species. Professor Houck's study of ninety-nine instances in which the FWS formally determined that a federal project would jeopardize a species indicates that the species most frequently at risk were as follows:

<table>
<thead>
<tr>
<th>NUMBER OF PROJECTS</th>
<th>SPECIES IN JEOPARDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>West Indian Manatee</td>
</tr>
<tr>
<td>8</td>
<td>Bald eagle</td>
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<tr>
<td>6</td>
<td>Piping plover</td>
</tr>
<tr>
<td>5</td>
<td>American peregrine falcon</td>
</tr>
<tr>
<td>3</td>
<td>Arctic peregrine falcon</td>
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<tr>
<td>3</td>
<td>Gray wolf</td>
</tr>
<tr>
<td>3</td>
<td>Whooping crane</td>
</tr>
<tr>
<td>3</td>
<td>Red cockaded woodpecker</td>
</tr>
</tbody>
</table>

Only five plants, one butterfly, and no other insect were found to be in jeopardy by one of these projects. The bias also shows up in the designation of critical habitat.

Private environmental groups, state and local governments, and other interested parties face the same considerations—though they are under no obligation even to pretend to treat all species equally. The symbol of the World Wildlife Fund is the giant panda, not the kangaroo rat. *Audubon* magazine has referred "ecocelebrities"—like the bald eagle, the whooping crane, and the gray wolf—that dominate the news. One supporter of increased funding for endangered species suggests that "[t]he few high-profile mammals and birds we

109. *See* Houck, *supra* note 52, at 359-70 (appendix summarizing 99 biological opinions finding jeopardy to a listed species). Note that several of the projects involved multiple, unidentified species.

110. *See* James Saltzman, *Evolution and the Application of Critical Habitat Under the Endangered Species Act*, 14 HARV. ENVTL. L. REV. 311, 332 (1990) (table showing that 47% of fish, 39% of reptiles, 33% of amphibians, 29% of crustaceans, 27% of mammals, 14% of plants, 12% of birds, and no snails or clams listed as endangered or threatened had designated critical habitat as of 1988).

have pushed to the very brink of extinction may be able to survive on voluntary contributions." At each point, the money committed to protecting endangered species plays a powerful role in determining how much protection that species gets.

The favoritism for the most popular species is not uniform. The species protected by the first seven HCPs approved by the Interior Department include the mission blue butterfly, the callippe silverspot butterfly, the Coachella Valley fringe-toed lizard, the Stephens' kangaroo rat, the desert tortoise, the San Joaquin kit fox, and the valley elderberry long-horned beetle. The species for which recovery plans have been developed seem almost inversely related to the prominence of the species: recovery plans exist for 78% of endangered and threatened snails but only 12% of endangered or threatened mammals. Likewise, the species covered by the most expensive recovery plans include the blunt-nosed leopard lizard, the swamp pink, and other species unknown to the public at large.

Other factors besides charisma must explain why some species are preferred more than others. The most obvious additional variable is the presence of an economic activity that would be threatened by the protection of an endangered species. This cuts both ways. Developers, economic interests, and many government officials may want to minimize the legal obligations imposed by the ESA. Environmentalists, by contrast, often seize upon the ESA's powerful mandates to block a project that threatens broader environmental values. Besides these economic conflicts, preferences among species may depend upon mere awareness that the species exists and is en-

112. Campbell, supra note 51, at 145; see also James Drozdowski, Note, Saving an Endangered Act: The Case for a Biodiversity Approach to ESA Conservation Efforts, 45 CASE W. RES. L. REV. 553, 574 (1995) (noting that "species that manage to fall within the good graces of a prominent environmental organization tend to receive a greater deal of protection under the ESA").

113. See BEAN ET AL., supra note 59, at 7-9.

114. The complete picture is as follows: recovery plans exist for 80% of arachnids, 78% of snails, 71% of ferns and certain other plants, 69% of clams, 62% of fishes, 58% of flowering plants, 57% of insects, 44% of amphibians, 33% of crustaceans, 27% of reptiles, 28% of birds, 25% of conifers, and 12% of mammals. The calculations are based on the statistics contained in FWS Box Score, supra note 34, at 1-2.

115. See H.R. 2275 Hearing, supra note 8, at 370 (fact sheet on endangered species).
dangered and upon the perceived utilitarian value of the species.

The formal explanation for choices among species lies in the express policy of the FWS itself. The agency "recognizes that it is necessary to assign priorities to listing, delisting, reclassification, and recovery actions in order to make the most appropriate use of the limited resources available to implement the [ESA]." Therefore, in 1983 the FWS issued regulations that detail the priorities to be followed when deciding which species should be listed and which species should receive the greatest assistance. The regulations give greatest priority to the species that are most in danger, as measured by both the magnitude and the immediacy of the threat to the species. A secondary priority accrues to species with the greatest taxonomic distinctiveness—in other words, species that possess the most unique characteristics. The decision as to which recovery plans to implement is also weighted to favor those species

117. See id. The 1983 guidelines responded to a 1979 amendment to the ESA that required some kind a ranking system among species. See Act of Dec. 28, 1979, Pub. L. No. 96-159, 93 Stat. 1225-26 (codified at 16 U.S.C. § 1533(h)(3)); see also FWS 1983 Priority Guidelines, supra note 90, at 43,102-04 (discussing the background of the 1983 guidelines). In December 1996, the FWS adopted guidelines establishing priorities among the various listing responsibilities imposed on the agency by the ESA. See FWS 1997 Priority Guidance, supra note 53. The guidelines give priority in descending order to (1) emergency listing actions, (2) the processing of final decisions on proposed listings, (3) resolving the status of candidate species and the processing of petitions regarding listings, and (4) critical habitat determinations and delistings. See id. at 66,479-80; see also Endangered and Threatened Wildlife and Plants; Extension of Listing Priority Guidance for Fiscal Year 1997, 62 Fed. Reg. 55,268-69 (1997) (extending the effectiveness of the 1997 priority guidance until shortly after the Department of the Interior's fiscal year 1998 appropriations are approved). Most recently, the FWS proposed a new guidance that will remain in effect through fiscal year 1999. See Endangered and Threatened Wildlife and Plants; Proposed Listing Priority: Guidance for Fiscal Years 1998 and 1999, 63 Fed. Reg. 10,931 (1998), available in 1998 WL 90269 (F.R.) [hereinafter FWS 1998 Proposed Priority Guidelines]. That guidance is similar to the existing priorities except that it raises the priority of delisting actions. See id. at 10,934 (explaining that "prompt delisting of recovered species and the reclassification of recovering species (from endangered to threatened status) is necessary to keep the public and other interested parties informed of a species' conservation status").

118. See FWS 1983 Priority Guidelines, supra note 90, at 43,103; accord FWS 1997 Priority Guidance, supra note 53, at 64,477 ("It has been longstanding Service policy that the order in which species should be processed for listing is based primarily on the immediacy and magnitude of the threats they face.").

119. See FWS 1983 Priority Guidelines, supra note 90, at 43,103.
whose preservation would conflict with economic activities, in an effort to resolve such conflicts as soon as possible. The priorities are not absolute, but are instead intended to be applied flexibly.

The formal preferences of the FWS and the apparent practical preference for the most popular species both disprove the claim that the ESA prevents any choices among species. The statute does not specifically direct the government how to allocate its limited resources when deciding which of many deserving species to list, what land to buy, or what enforcement actions to pursue. Thus the inflexible law portrayed by the statute's critics conflicts with the discretion exercised by the government when actually implementing the law. The ESA has permitted choices between species; it has allowed us to play God.

III. THE UTILITARIAN REASONS FOR NOT CHOOSING AMONG SPECIES

Therein lies the paradox: we cannot protect every species, we distinguish among species in practice, but we are unwilling to write the statute to guide such decisions or even to acknowledge that they are being made. Even to suggest that some species are more valuable and deserving of more protection than others is anathema to ecologists. That, however, may be what Congress and the public want. The Congress that enacted the ESA in 1973 was thinking primarily (if not exclusively) of the most charismatic species. Most writers presume greater support for

120. See id. at 43,103-05.

121. See id. at 43,098 ("[T]he priority systems presented must be viewed as guides and should not be looked upon as inflexible frameworks for determining resource allocations."); see also id. at 43,101 (rejecting the suggestion made by the Pacific Legal Foundation that the guidelines should be strictly followed by the FWS).

122. The examples offered during the floor debate on the ESA in 1973 included whales, leopards, alligators, whooping cranes, wolves, falcons, cougars, the California condor, the bald eagle, and similar popular species. See, e.g., SENATE COMM. ON ENVIRONMENT AND PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED IN 1976, 1977, 1978, 1979 AND 1980, 97TH CONG., 2D SESS., at 192, 371, 387, 403 (1982). For other assertions that the 1973 Congress was thinking of the most popular species, see 142 CONG. REC. S6340 (daily ed. May 9, 1995) (statement of Sen. Gorton) (assuming that Congress intended the ESA to "protect our Nation's symbol of freedom, the bald eagle, and the other precious and unique creatures that we identified with as Americans"); Bakersfield ESA Hearing, supra note 4, at 61 (statement of Rep. Pombo) (complaining that "somehow we got from protecting bald eagles and grizzly bears to protecting fairy shrimp
protecting bald eagles than spiders.123 Zygmunt Plater has observed that “[e]ndangered species had the good fortune to be represented by such mediagenic figures as the bald eagle, the polar bear, whales, and whooping cranes, all of which were sentimentally appealing, fairly remote from market considerations affecting most people, and dramatic or beautiful.”124 The studies

and beetles”); Louisiana & Texas ESA Hearings, supra note 7, at 136 (statement of Rep. Chenoweth) (noting that the original purpose for the ESA was “to save the great blue whale and the bald eagle”); (testimony of Wayne Wyatt, Manager, High Plains Underground Water Conservation District) (regretting that he originally supported the ESA thinking that “all we were trying to do was to protect the American Eagle, seals, maybe grizzly bears, some of the real species that were important”); Plater, supra note 80, at 850 (agreeing that “[t]he original images in the minds of members of Congress, as well as the public, probably were indeed . . . protection of 'warm fuzzy' creatures”); Snape, supra note 69, at 84 (noting that “many senators and representatives believed that the act was to be a legislative tool that primarily addressed charismatic megafauna like the bald eagle and American alligator”).

123. See Drozdowski, supra note 112, at 572 (“In general, species that are viewed favorably in the public eye stand the best chance of survival under the present scheme.”); Lawrence H. Goulder & Donald Kennedy, Valuing Ecosystem Services: Philosophical Bases and Empirical Methods, in NATURE'S SERVICES 23, 36 (Gretchen C. Daily ed., 1997) [hereinafter DAILY] (“People seem to care more about eagles and panthers than about mosses and bacteria.”); Alan Randall, Human Preferences, Economics, and the Preservation of Species, in THE PRESERVATION OF SPECIES: THE VALUE OF BIOLOGICAL DIVERSITY 79, 87-88 (Bryan G. Norton ed., 1986) [hereinafter NORTON] (noting human preference for species providing utilitarian benefits and “those which have become the stuff of legends and patriotic symbolism, as well as those which are ‘pretty,’ ‘nice,’ or ‘cute and cuddly’”); Ike C. Sugg, Caught in the Act: Evaluating the Endangered Species Act, Its Effects on Man and Prospects for Reform, 24 CUMB. L. REV. 1, 68 (1993) (“[H]ow would Americans respond to the question ‘Do we have to save them all?, when the vast majority of ‘them’ are insects and other creatures Americans regularly step on without so much as a second thought?” (citation omitted)). But see Roper Center of Connecticut, Public Opinion Online, survey conducted for LOS ANGELES TIMES, Nov. 1989, available in LEXIS, News Library, Arcnews File (poll indicating that of those willing to pay higher taxes in order to save endangered species, 64% would pay more taxes regardless of the species, while 31% would pay more taxes to protect certain species). Mann and Plummer assert that while most Americans would prefer bald eagles to a shopping center, “feelings are much less certain when it comes to canceling a $100 million golf course to save a bug nobody has heard of,” Mann and Plummer, supra note 40, at 48. But a poll asking a very similar question revealed that a butterfly would defeat a golf course by a 53% to 37% margin. See Roper Center of Connecticut, Public Opinion Online, Survey Conducted for TIMES MIRROR MAGAZINES, National Environmental Forum Survey, Mar. 10, 1992, available in LEXIS, News Library, Arcnews File.

124. Plater, supra note 67, at 822; accord Plater, supra note 80, at 851 (describing “the paradigmatic images of the ESA” as “the large brown eyes of a baby seal or tiger or elephant, the fragile finery of an endangered crane, the brave splashing flukes and quavering underwater songs of humpback
of Yale Professor Stephen Kellert have yielded similar conclusions. As two critics of the ESA have written:

[Another] flaw with the ESA is that it does not discriminate between the protection afforded a bear or a beetle. When the average American considers the issue of endangered species, he thinks of eagles and manatees. These are the species that attract support: the warm and cuddly animals, the gentle woodland creatures. However, with the exception of plants, the act gives the same protection to all endangered species. Recognizing how this can create public relations problems, one National Park Service manual says that "from an educational standpoint, popular plants and animals can be used as a spoonful of sugar to make the medicine go down." It's a classic case of bait and switch: financial and political clout are gathered for fuzzy, likable mammals like pandas, but the law is then applied to anything that crawls.

Such complaints have become increasingly common as frustration with the strictures of the ESA led some to ask the 104th Congress why we protect all species alike.

125. See Stephen R. Kellert, Social and Perceptual Factors in the Preservation of Animal Species, in NORTON, supra note 123, at 50 (indicating that the percentage of respondents who would modify an energy project to protect an endangered species ranged from 89% for a bald eagle, 73% for a mountain lion, 71% for an agassiz trout, 70% for an American crocodile, 64% for a silverspot butterfly, 48% for a furbish housewrot, 43% for an Eastern indigo snake, and 34% for a Kauai spider); accord STEPHEN R. KELLERT, THE VALUE OF LIFE: BIOLOGICAL DIVERSITY AND HUMAN SOCIETY 170 (1996) (figure showing same survey results); Stephen R. Kellert, Social and Perceptual Factors in Endangered Species Management, 49 J. WILDLIFE MGMT. 528, 531 (1985) [hereinafter Socioeconomic Factors] (same). Kellert asserts that "people are most inclined to protect endangered species that are large, aesthetically attractive, phylogenetically similar to human beings, and regarded as possessing the capacities for feeling, thought, and pain." Id. at 533; see also id. at 532 (noting lack of concern for most endangered invertebrates); Richard P. Reading & Stephen R. Kellert, Attitudes Toward a Proposed Reintroduction of Black-Footed Ferrets (Mustela nigripes), 7 CONSERVATION BIOLOGY 569, 571 (1993) ("It is far easier to garner support for species with high public appeal, the 'charismatic megafauna,' than for lesser-known, 'lower' life forms." (citation omitted)). For Kellert's thorough examination of how Americans view wildlife, including the different attitudes held by those of different age, sex and ethnicity, see KELLERT, THE VALUE OF LIFE, supra, at 37-63.


127. See Louisiana & Texas ESA Hearings, supra note 7, at 73 (statement of Rep. Metcalf) (asking whether the ESA could be changed to include "significant species that are endangered, instead of all" species); id. at 136-37,
Three bills introduced in 1995 would permit such choices. Senator Gorton, for example, refused to assume that all species are equally important; rather, he asserted that "we need [a government] official to explain to us why the species is important." Thus, his bill (like the other two) would require the Secretary of the Interior to determine the appropriate conservation goal for each individual species. The Secretary would consider a number of factors to make that determination, including the biological significance of the species and all of the direct and indirect economic and social impacts of protecting the species. If those factors do not support efforts to assure

329-30 (testimony of Wayne Wyatt, Manager, High Plains Underground Water Conservation District) (proposing that the ESA be limited to "keystone" species); id. at 149 (statement of Rep. Lamar Smith) ("Under the current way that the Endangered Species Act is interpreted and enforced, aren't we putting cockroaches on the same level as Whooping Cranes and Bald Eagles and isn't that part of the problem? We're not setting priorities, we're not saying what's really important to protect and what's not."); Bakersfield ESA Hearing, supra note 4, at 12 (testimony of Thomas N. Clark, Kern County Water Agency) (asking if there should be a system of prioritization among species that considers "the importance of that particular species or sub-species to the entire environment," suggesting that it is "intellectually dishonest" to try to protect every species, and arguing that "we might in effect accomplish nothing" if we try to protect every species with our limited resources); Washington ESA Hearing Part I, supra note 7, at 30 (statement of Rep. Edwards) (suggesting that a cave dwelling spider should receive less protection than the bald eagle, and criticizing a FWS official who disagreed); id. at 31-32 (statement of Rep. Edwards) (insisting that "most of us would agree that [a fly] is not quite as valuable as a bald eagle that is a symbol for our country"); ESA Listing Moratorium Hearing, supra note 76, at 18 (statement of Sen. Hutchinson) (asserting that "[t]here is a big difference between eagles and condors and grizzly bears and bait fish and concho snakes and kangaroo rats"); see also 142 CONG. REC. S3747 (daily ed. Apr. 22, 1996) (statement of Sen. Coverdell) (noting the finite amount of money available to protect endangered species and asking whether all species are equally valuable). Mann and Plummer make the same argument throughout Noah's Choice. See MANN & PLUMMER, supra note 11, at 215 ("[T]he time has come to question the goal that underlies the act: Save every species, no matter what the cost."); id. at 229 (proposing a biodiversity advisory board that could decide which species are most worth protecting); id. (asserting that "no one is better equipped [than biologists] to decide which species, communities, and ecosystems are more necessary than others"); id. at 233 (acknowledging that "legitimizing trade-offs would of necessity afford different species different levels of protection"); id. at 235 (proposing a national biodiversity trust such that "Noah would have a budget and a bottom line, reflecting indirectly the priorities of people with differing aspirations").


129. See S. 768, 104th Cong., 1st Sess. § 201(a) (1995) (adding new section
the complete recovery of a particular species, then the ESA would not require the recovery of that species. The end result would be that some species would receive greater protection than others.

Such a system would have parallels elsewhere in environmental law. Federal statutes afford some environmental amenities greater protection than others. The list of permissible activities varies greatly in Yosemite National Park and in unreserved public land managed by the Bureau of Land Management. The Clean Water Act allows states to decide that some rivers and lakes must be suitable for swimming while other rivers and lakes need only be suitable for industrial uses. Superfund sites do not need to be cleaned up to the identical level of purity.

The implication of these proposals is that choosing among species may be difficult, but it is not as impossible as many believe. This claim is crucial. If choosing among species is inevitable (as I argued in Part I), and if we choose in practice already (as described in Part II), then perhaps we should openly allow such choices. There are only two arguments against a system that expressly chooses among species. We could continue to hide the choices that we make among species because we are afraid of the consequences of a public admission that we are making such choices. I am skeptical of such concerns about candor, for reasons I explain below.


133. See infra text accompanying notes 314-316.
ment against a system that chooses among species deserves more consideration. If, in fact, there is a good reason for trying to protect every species, then our practice of preferring some species to others becomes problematic. It becomes necessary, then, to analyze the reasons why we care about protecting endangered species. The utilitarian justifications for the preservation of species do not support the equal protection of all species, but there are other, non-utilitarian reasons for treating all species alike.

A. UTILITARIAN JUSTIFICATIONS FOR PROTECTING ALL SPECIES

Congress stated that the ESA is necessary because "species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people."134 These are all utilitarian justifications for protecting endangered species of wildlife and plants. The benefits are impressive:

(1) Food: People eat animals and plants, and not much else (Cheetos excepted). This gives tasty or nutritious animals and plants real economic value. Mann and Plummer cite the white-tailed deer, the example used by William Temple Hornaday nearly a century ago.135 Two million deer, each providing ten dollars of meat, result in a resource worth $20 million dollars per year.136 Today "the constant infusion of genes from wild plant species adds approximately $1 billion per year to U.S. agricultural production."137 Producing food provides jobs for millions of Americans. If an edible species disappears, so does the food and jobs it provides. Thus, some members of the Pacific Northwest's salmon industry are among the ESA's biggest supporters.138

135. See WILLIAM T. HORNADAY, WILD LIFE CONSERVATION IN THEORY AND PRACTICE 103-110 (1914); WILLIAM T. HORNADAY, OUR VANISHING WILD LIFE: ITS EXTERMINATION AND PRESERVATION 236-43 (1913). Hornaday was the chief taxidermist of the Smithsonian Institution and later the first director of the Bronx Zoo. See MANN & PLUMMER, supra note 11, at 119.
136. These are 1914 numbers; on the other hand, Mann and Plummer point out that Hornaday neglected to consider the cost of obtaining that meat. See MANN & PLUMMER, supra note 11, at 266 n.120.
137. Washington ESA Hearing Part II, supra note 10, at 190 (statement of the National Wildlife Federation); see also Norman Myers, Biodiversity's Genetic Library, in DAILY, supra note 123, at 256-59 (describing how wild corn, wild rice, and other rare species can provide food to humans).
138. See H.R. 2275 Hearing, supra note 8, at 74 (statement of Glen Spain, Regional Director, Pacific Coast Federation of Fishermen's Associations)
(2) Medicine: Plants and animals are an important source of drugs and other medical treatments. Numerous exotic plants have yielded life-saving drugs. Scientists are examining numerous plants as they search for a cure for AIDS. Animals, fish, amphibians and insects possess medical value as well. And we are only beginning to study most species to learn if they possess any medical value.

("Every time you extinguish a salmon run in Idaho or Montana or Oregon or Washington, you are extinguishing a job and a source of jobs for the future."); see also Vancouver ESA Hearing, supra note 7, at 32-33, 156-70 (statement of Glen Spain, Regional Director, Pacific Coast Federation of Fishermen's Associations); id. at 171-87 (statement of Liz Hamilton, Executive Director, Northwest Sportfishing Industry Association).

139. See MANN & PLUMMER, supra note 11, at 120-21. ("Bark from the white willow gave us salicin, an ancient version of aspirin; the Grecian fox-glove provided digoxin, a cardiac medication; bear bile is the origin of ursodiol, a gallstone dissolver; deadly nightshade led to atropine, an eye dilator and anti-inflammatory; the velvet bean produced L-dopa, a treatment for Parkinson's disease; and everyone knows the story of penicillin, the bacteria slayer discovered accidentally in a mold."). The species that have proven medical value are discussed in Washington ESA Hearing Part II, supra note 10, at 34-36 (testimony of Dr. Kevin H. Browngoehl, Biodiversity Committee, National Physicians for the Environment); id. at 225 (statement of Dr. Thomas Eisner, Director of the Cornell University Institute for Research in Chemical Ecology); Myers, supra note 137, at 263-65. See generally Medicinal Uses of Plants; Protection for Plants Under the Endangered Species Act: Hearing Before the Subcomm. on Env't and Natural Resources of the House Comm. on Merchant Marine and Fisheries, 103d Cong. (1993) (testimony discussing the efforts to obtain medicine from plants).

140. See Washington ESA Hearing Part II, supra note 10, at 206 app. (statement of the National Wildlife Federation) ("The National Cancer Institute is now studying four plant compounds that provide effective protection against the replication of the HIV-1 and HIV-2 virus, the precursors to AIDS, in laboratory tests."); MANN & PLUMMER, supra note 11, at 128 (recounting some of the possible anti-AIDS drugs).

141. See THE WILDERNESS SOC'Y FOR THE ENDANGERED SPECIES COALITION, supra note 27, at 10 (citing the medical benefits of bats, crustaceans, mollusks, insects, and snakes); Myers, supra note 137, at 265 (describing how frogs can provide antitoxins and pain killers, an octopus produces a substance that relieves hypertension, and insects secrete substances similar to hormones).

142. See Washington ESA Hearing Part II, supra note 10, at 35 (statement of Dr. Kevin H. Browngoehl, Biodiversity Committee, National Physicians for the Environment) ("Only five percent of our flowering plant species have been studied chemically with any thoroughness to look for their medicinal value."); MANN & PLUMMER, supra note 11, at 121-22 ("Biologists frequently liken the world's biodiversity to a library in which the vast majority of books have never been read. . . . Reading the books in the species library once will not be enough . . . . Each generation will profit from reading them over and over again.").
(3) Aesthetics & tourism: People enjoy visiting, photographing, painting, and just looking at wildlife. The aesthetic value of a beautiful animal or plant often produces a tangible economic value in the form of ecotourism. Grizzly bears attract millions of people to Yellowstone and Glacier National Parks annually. Whales bring visitors to California, Hawaii, and New England. Tourists travel to numerous areas to visit bald eagles. These visits produce substantial economic value. The FWS recently reported that the seventy-six million Americans who watched, photographed and fed birds and other wildlife in 1991 spent $18.1 billion on those activities. Another report calculated that birdwatching alone is a $15 billion dollar business annually. These general economic benefits also result from endangered species in particular. Whooping cranes and other wildlife generate $5 million annually to the economy of the area surrounding the Aransas National Wildlife Refuge in Texas. A rancher in the Texas Hill Country earned $14,000 from groups that came to see the endangered golden-cheeked warbler and black-capped vireo. Large numbers of boaters, divers, snorkelers, and swimmers visit the west coast of Florida to see an endangered manatee—indeed, the number has become so large that the FWS recently found it necessary to create a new sanctuary to further protect the manatees from the people who want to see them. The aesthetic appeal of

143. JAMES D. CAUDILL, U.S. FISH AND WILDLIFE SERVICE, 1991 ECONOMIC IMPACTS OF NONCONSUMPTIVE WILDLIFE-RELATED RECREATION 6-7 (1997). The report further noted that the economic impacts extended to nearly $3 billion in tax revenues and the support of 766,000 jobs. See id.


145. See MANN & PLUMMER, supra note 11, at 126-26.

146. See Louisiana & Texas ESA Hearings, supra note 7, at 104 (statement of J. David Bamberger, environmentalist rancher).

many endangered species extends to those who never see such a species in the wild, or who never will.\textsuperscript{148}

(4) Ecological assistance: Animals and plants also provide benefits to the ecosystem as a whole, benefits that indirectly help human society. Mann and Plummer note that species play a vital role in such essentials as maintaining the quality of the atmosphere (forests act as air filters), controlling the climate (vegetation takes in carbon dioxide from the atmosphere), regulating freshwater supplies (trees absorb and release water), generating soil (microorganisms crumble rock), and disposing of wastes (American burying beetles inter dead mice).\textsuperscript{149}

Birds have long been valued for eating troublesome insects and the seeds of unwanted weeds.\textsuperscript{150} The endangered Alabama beach mouse protects coastal housing from hurricanes.\textsuperscript{151} The list of natural services also includes flood and drought control, pollination of crops, protection from ultraviolet rays, and the dispersal of seeds and nutrients.\textsuperscript{152} Perhaps we could secure these benefits from other sources, but we would pay far more than the free use of the natural resources we depend upon now.

(5) The “canary in the mine”: The loss of one species may serve as an early warning that the rest of the ecosystem is in danger. “Endangered species are the ‘miners’ canaries’ for the health of something larger, which we have not yet attempted to protect in a more holistic way.”\textsuperscript{153} Many environmentalists, for

\begin{footnotes}
\item 148. See Goulder & Kennedy, supra note 123, at 25 (identifying non-use values as those “that do not involve any actual direct or indirect physical involvement with the natural thing in question”).
\item 149. MANN & PLUMMER, supra note 11, at 123; see also PAUL & ANNE EHRLICH, EXTINCTION 86-95 (1981) (noting similar benefits); Bakersfield ESA Hearing, supra note 4, at 27 (statement of Arthur D. Unger, Kern-Kaweah Chapter of the Sierra Club) (noting that flies can be used to control wasps).
\item 150. See HORNADAY, OUR VANISHING WILDLIFE, supra note 135, at 213-33.
\item 151. See 143 CONG. REC. E1596 (daily ed. Aug. 1, 1997) (statement of Rep. Miller) (explaining that the Alabama beach mouse “plays an important role in the beach dune ecosystem of the Gulf of Mexico by dispersing the seeds of the sea oat—its principal food source—which, in turn, forms the basis for the formation of dunes and protects them from erosion. The dunes protect inland housing from coastal flooding and hurricanes.”).
\item 152. See Gretchen C. Daily, Introduction: What Are Ecosystem Services?, in DAILY, supra note 123, at 3, 3-4. For an exhaustive account of many of these services, see DAILY, supra note 123, at 93-251 (chapters written by different specialists on ecosystems values related to soil, pollination, pest control and provided by marine ecosystems, freshwater ecosystems, forests, and grasslands).
\end{footnotes}
example, view the decline of the northern spotted owl as a sign of the decline of the old growth forests in which it lives.\textsuperscript{154} The dangers of the pesticide DDT were first learned from the decline of the bald eagle.\textsuperscript{155} We ignore such warnings at our peril.

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There are many other utilitarian services provided by a wide range of plant and animal species.\textsuperscript{156} Collectively, such benefits supply a powerful case for protecting the environment.

B. LIMITS OF UTILITARIAN JUSTIFICATIONS FOR PROTECTING ALL SPECIES

These utilitarian benefits do not, however, prove that we cannot live without any particular species. The justifications for protecting endangered species usually make an unspoken move from why we need to protect endangered species to why we need to protect each endangered species. Here again, \textit{Noah's Choice} is devastatingly effective in undermining the ecological orthodoxy that all species are of equal value. Mann and Plummer begin by turning each justification around to show that it is possible to distinguish the value of different species. People depend upon about "fifteen to twenty" species for most of their food, but even considering that another 3,000 plant species may be a source of food, that still leaves many species with no nutritional value for humans.\textsuperscript{157} Efforts to identify plants and animals with medicinal uses have identified far more "useless" species than helpful ones.\textsuperscript{158} Beauty may be in the eye of the beholder, but if we are willing to designate certain areas like the Grand Canyon or the Everglades

\begin{footnotes}
\footnote{155. See Washington ESA Hearing Part II, supra note 10, at 191 (statement of the National Wildlife Federation).}
\footnote{156. See, e.g., Myers, supra note 137, at 266-70 (explaining how industrial production, scientific research, and biotechnology benefit from various species).}
\footnote{157. See MANN \& PLUMMER, supra note 11, at 129. Mann and Plummer add that "[a]lthough it is important to maintain genetic diversity among these [fifteen to twenty] species, and even wild cousins to help future farmers ward off new pests, saving the vast majority of plant species cannot be justified by appealing to their edibility; similar reasoning applies to animals." \textit{Id}.}
\footnote{158. See id. at 127-29.}
\end{footnotes}
as worthy of special protection because of their unique features, why not make such distinctions among plants and animals? Tourists make such choices daily: whatever abstract arguments can be made about their aesthetic appeal, Yellowstone National Park attracts far more visitors than the Maplewood Municipal Park a few blocks from my home. Plants are necessary to produce organic carbon molecules, but “because so many species produce these molecules in so many different ways, huge numbers would have to vanish before the world experienced a failure of photosynthesis.”\textsuperscript{159} Moreover, scientists are increasingly able to measure the contributions of individual species in stabilizing the ecosystem and other species.\textsuperscript{160} Many of the species discussed at length in Noah’s Choice do not possess any of these utilitarian values.\textsuperscript{161}

Mann and Plummer further contend that what we don’t know about biodiversity could just as easily cut against protecting a species as it could counsel for it. Is the unknown monkey in Amazon rainforest the source of the cure for AIDS, or is it the bearer of the next AIDS virus? If we don’t know, they ask, why should we assume the former instead of the latter? Mann and Plummer go so far to suggest that “treating biodiversity in the way environmental activists would like to treat chemicals would suggest automatically banning species we don’t know about.”\textsuperscript{162} They admit the idea is ludicrous, but they insist that arguments based on ignorance cannot carry the day.

The canary-in-the-mine justification is much harder to dismiss. Mann and Plummer note that the interdependence of ecosystems supports protecting the individual components of

\textsuperscript{159} Id. at 130; see also id. at 129 (the indirect ecological benefits “tend to come from biodiversity in toto, rather than from individual species”); see also id. at 24 (acknowledging that “we will . . . exterminate ourselves” if we exterminate all living things, but arguing that particular individual species seem “expendable”).

\textsuperscript{160} See Claire A. Montgomery et al., The Marginal Cost of Species Preservation: The Northern Spotted Owl, 26 J. ENVTL. ECON. & MGMT. 111, 112 (1994).

\textsuperscript{161} As Mann and Plummer often point out. See MANN & PLUMMER, supra note 11, at 23-27 (suggesting that the American burying beetle is not edible, will not cure the common cold, and does not serve any irreplaceable ecological functions); id. at 91 (observing that the Karner blue butterfly “has no known food or medicinal value”). For similar critiques of the utilitarian value of individual species, see REED F. NOSS & ALLEN Y. COOPERRIDER, SAVING NATURE’S LEGACY: PROTECTING AND RESTORING BIODIVERSITY 19-20 (1994), and Doremus, supra note 80, at 275-81.

\textsuperscript{162} MANN & PLUMMER, supra note 11, at 133; accord Elliott Sober, Philosophical Problems for Environmentalism, in NORTON, supra note 123, at 175-77 (rejecting the ignorance argument).
ecosystems, but they devote less attention to this argument than to the other utilitarian arguments that they canvass. This omission is odd because many others have emphasized the canary-in-the-mine concern during the recent debate over the ESA. The FWS's pamphlet on the ESA spends more time discussing the canary-in-the-mine argument than any other rationale for saving endangered species. Numerous speakers at the 1995 hearings on the ESA relied on the argument. The analogy has been offered in many other forums as well.

163. See MANN & PLUMMER, supra note 11, at 122 (citing an estimate that "the loss of one species of plant eliminates en passant ten to thirty other species"); id. at 130-31 (discussing the idea of the environment as a "web of life"); accord Washington ESA Hearings Part II, supra note 10, at 40, 194 (statement of the National Wildlife Federation) (citing the FWS for the proposition that the loss of one species can lead to the extinction of 30 other species).

164. See Plater, supra note 80, at 864 (indicating that the author explained the canary-in-the-mine argument to Mann and Plummer in an extended telephone interview, and suggesting that they ignored the argument because to acknowledge it "would have opened the door to recognizing potential general benefits of species protection that directly contradicted the book's mission").


166. See Louisiana & Texas ESA Hearings, supra note 7, at 73-74 (testimony of Paul Davidson, President, Louisiana Wildlife Federation) (observing that "wildlife of all sorts is an indicator of quality of life. And when we see species getting into trouble, it is sort of a red flag for us to sort of take notice."); Bakersfield ESA Hearing, supra note 4, at 27 (statement of Arthur D. Unger, Kern-Kaweah Chapter of the Sierra Club) ("When a species declines, it means the conditions they live under are vanishing. When a place becomes too crowded or toxic for one kind of life, might it soon not become too crowded or toxic for us?"); Vancouver ESA Hearing, supra note 7, at 33 (statement of Glen Spain, Regional Director, Pacific Coast Federation of Fishermen's Associations) (viewing the ESA as the messenger of the decline of the ecosystem containing endangered salmon); id. at 67 (testimony of Mitch Friedman, Executive Director, Greater Ecosystem Alliance) (contending that "the Endangered Species Act is a smoke alarm; habitat destruction is the fire"); Washington ESA Hearing Part I, supra note 7, at 33 (statement of Rep. Furse) (arguing that "we have been legally forced to admit that something is wrong and that our stewardship is inadequate" because of the listing of three species of salmon as endangered); H.R. 2275 Hearing, supra note 8, at 465 (testimony of the Sierra Club) (referring to "the Endangered Species Act's function as the proverbial 'canary in the coal mine'"); ESA Listing Moratorium Hearing, supra note 76, at 7 (statement of Sen. Boxer) ("A species in decline is a symptom of larger environmental problems that will surely lead to problems for all of us."); id. at 9 (statement of Sen. Lautenberg) ("Each time a species is listed, it sends out a warning signal that some part of the ecosystem is in danger."); id. at 82 (testimony of Bruce Babbitt, Secretary of the Interior) ("The Endangered Species Act is a warning light. When one species in an ecosystem's web of life starts to die out, all species may be in peril.").

167. See, e.g., Oregon Natural Resources Council, Inc. v. Kantor, 99 F.3d
Mann and Plummer acknowledge the existence of so-called "keystone" species—such as beavers and mangroves—that the rest of an ecosystem depends upon. They conclude, however, that such species "are rare and are overwhelmed by the legions of the fungible." Fair enough, but that misses the point. Keystone species are different from "indicator" species—those species whose health tracks the health of the ecosystem in which they live. The early warning signal of ecosystem decline is sent by any declining indicator species, not just those species that are most important to the ecosystem. That presents the best utilitarian argument for protecting many otherwise unremarkable species.

Nonetheless, the canary-in-the-mine argument does not explain why we need to protect a species once it sounds the warning about the ecosystem. If the species lacks any of the other utilitarian values, or if the ecosystem (or an adequate approximation) can be preserved without this one species, or if there is no utilitarian reason for saving the ecosystem itself, then there is no utilitarian reason to save the species whose decline alerted us to the problem. As J.B. Ruhl has written:

334, 339 (9th Cir. 1996) ("The decline of one of our fellow travelers on this planet . . . may also be a tocsin which tells us that we are doing something very wrong."); 142 CONG. REC. S1612 (daily ed. Mar. 7, 1996) (statement of Sen. Reid) (describing the Florida black bear as "an umbrella threshold species, whose own population well-being is reflective of the health of the rest of the habitat area and the other species in that same ecosystem"); Houck, supra note 153, at 321-31 (defending the canary-in-the-mine justification for the ESA); THE WILDERNESS SOCY FOR THE ENDANGERED SPECIES COALITION ENDANGERED SPECIES COALITION, supra note 27, at 9 (advancing the canary-in-the-mine argument); Aaron Gallegos, Sinking Noah's Ark: Christians and the Endangered Species Act, SOJOURNERS MAG., May-June, 1996 <http://www.sojourners.com/960541b.html> (characterizing the ESA as a barometer of the health of ecosystems).

168. MANN & PLUMMER, supra note 11, at 131. They continue by quoting ecologist David Ehrenfeld, who once wrote that "[i]f the California condor disappears forever from the California hills, it will be a tragedy . . . . But don't expect the chaparral to die, the redwoods to wither, the San Andreas fault to open up, or even the California tourist industry to suffer—they won't." David Ehrenfeld, Why Put a Value on Biodiversity, in BIODIVERSITY 215 (E.O. Wilson ed., 1988).

169. See Ruhl, supra note 43, at 591 (distinguishing indicator species and keystone species). Ruhl uses the Barton Springs salamander as an example of an species that indicates the health of hidden subterranean species by responding to changing water quality conditions. See id. at 592-93 n.100. See generally Peter B. Landres et al., Ecological Uses of Vertebrate Indicator Species: A Critique, 2 CONSERVATION BIOLOGY 316, 316-24 (1988) (discussing indicator species); Reed F. Noss, From Endangered Species to Biodiversity, in KOHM, supra note 51, at 231-35 (distinguishing among indicator species, keystone species, umbrella species, flagship species, and vulnerable species).
The problem with the indicator species approach biologically is that it leads to a static view of ecosystems. The fact that a species acts as an indicator of the health of an ecosystem does not necessarily mean that the species's health is essential to the health of the ecosystem, or even that the ecosystem for which it serves as an indicator is a particularly desirable one in terms of the species community and ecosystem functions.\textsuperscript{170}

Moreover, as Mark Sagoff argues, "[i]f ecosystems are unstructured, transitory, and accidental in nature, it would seem to follow that no general economic or utilitarian grounds exist for protecting them from change."\textsuperscript{171} Even Zygmunt Plater, perhaps the greatest champion of the canary-in-the-mine argument, acknowledges that it does not justify the protection of every endangered species.\textsuperscript{172} We may want to save ecosystems, but for different reasons than why we want to protect individual species—reasons that do not require us to protect every species.\textsuperscript{173}

In short, "biodiversity as a whole has overwhelming utilitarian value, but most individual species do not."\textsuperscript{174} If the


\textsuperscript{171} Mark Sagoff, \textit{Muddle or Muddle Through? Takings Jurisprudence Meets the Endangered Species Act}, 38 WM. & MARY L. REV. 825, 931-32 (1997); see also id. at 893-900 (noting the difficulties inherent in defining an ecosystem).

\textsuperscript{172} Plater, \textit{supra} note 80, at 875; see also id. (suggesting that the canary-in-the-mine function of endangered species supports a Noah Presumption in favor of the protection of a species).

\textsuperscript{173} See \textit{infra} at text accompanying notes 290-291 (discussing the independent value of ecosystems).

\textsuperscript{174} \textit{MANN \\& PLUMMER, supra} note 11, at 133. Even some enthusiastic supporters of the ESA seem to agree. \textit{See} RONALD DWORKIN, \textit{LIFE'S DOMINION: AN ARGUMENT ABOUT ABORTION, EUTHANASIA, AND INDIVIDUAL FREEDOM} 75 (1993) (arguing that none of the utilitarian arguments for protecting endangered species "rings true"); HOLMES ROLSTON III, \textit{ENVIRONMENTAL ETHICS: DUTIES TO AND VALUES IN THE NATURAL WORLD} 130 (1988) (admitting that "[a] substantial number of endangered species have no resource value"); Victor B. Flatt, \textit{Should the Circle Be Unbroken? A Review of the Hon. Stephen Breyer's Breaking the Vicious Circle: Toward Effective Risk Regulation}, 24 ENVTL. L. 1707, 1722 (1994) (concluding that the ESA "would not apply to certain species (like the snail darter) that provide no aesthetically pleasing appearance or potential for health treatment breakthroughs" if only utilitarian benefits mattered); Houck, \textit{supra} note 153, at 298 (acknowledging that "endangered species are, for the most part, no more aesthetically attractive than other species, provide little historical insight, and are on the margins of recreational demand and scientific discovery"); Krueger, \textit{supra} note 17, at 2 (arguing that "the utilitarian perspective on endangered plant and animal species represents a valid but feeble and currently ineffective argument"); Plater, \textit{supra} note 80, at 851, 853 (describing the utilitarian reasons as "makeweights," and suggesting that the utilitarian arguments are
stated purpose of the ESA is to preserve the utilitarian value of endangered species, and if that value varies from species to species, then we should decide which species we are willing to protect and which we are not. The resource constraints detailed above appear to make such choices imperative, and that approach is precisely what many recommend.\textsuperscript{175} But if Congress was wrong—if the utilitarian arguments fail to exhaust our reasons for preserving biodiversity—then choices among species become problematic.

IV. PLAYING NOAH

A host of writers have advanced theories establishing moral, ethical, and religious duties to preserve all species.\textsuperscript{176} Their theories are different in many respects—simply because there is no consensus about morality, ethics, or religion—but they share one thing in common. Any of these theories would confound a system that allows us to choose to protect some species but not others. One of them—the claim that the biblical story of Noah compels us to provide legal protection to all species—deserves special consideration. That ancient story occupies a unique place in our consciousness, whether or not one believes that it is true.

\textsuperscript{175} See supra text accompanying notes 127-130.

The tale of Noah and his ark resonates with young children and government officials alike, it continues to inspire book titles (e.g., Noah's Choice) and fundraising campaigns to protect wildlife; and it has played an unexpected role in the recent debate over the future of the ESA. For these reasons, I want to focus on the lessons that supporters of the ESA have learned from Noah, and how critics of the law have responded.

The story of Noah appears in chapters six through nine of the book of Genesis. Genesis tells us that God regretted the creation of humanity because people had become wicked and evil, so God decided to remove all people and all other living things from the face of the earth. Noah, however, was a righteous man who found favor before God, and God decided to spare him and his family. God instructed Noah to build an ark—a prototype houseboat—that he and his family could use to survive the impending flood. Additionally, God directed Noah “to bring into the ark two of all living creatures, male and female, to keep them alive with you. Two of every kind of bird, of every kind of animal and every kind of creature that moves along the ground will come to you to be kept alive.”

Noah obeyed God’s command. The promised flood destroyed all living things on the earth except for the occupants of the ark. Then the waters receded, the ark struck dry land, and God told Noah to “[b]ring out every kind of living creature that is with you—the birds, the animals, and all the creatures that move along the ground—so they can multiply on the earth and be fruitful and increase in number upon it.” Finally, God promised Noah, his descendants, and every other living creature that he would never destroy the earth again.

That story features prominently in the defenses of the ESA offered by Secretary Babbitt, EEN and other Christian and Jewish groups, and even secular proponents of biodiversity. God “did not specify that Noah should limit the ark to two charismatic species, two good for hunting, two species that might provide some cure down the road, and, two that draw crowds to the city zoo.” Noah invested much time, money,
and resources in building the ark and collecting all of the species. The resulting covenant between God and Noah “was made to protect the whole of creation, not for the exclusive use and disposition of mankind, but for the purposes of the Creator.” Some have even suggested that the story implies that

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the Rainbow: Stewards of Creation, supra note 15, at 500; The NewsHour with Jim Lehrer (public television broadcast, June 3, 1996), available in LEXIS, News Library, Curnws File (statement of Secretary Babbitt). Others who have made the same point include 142 CONG. REC. S1842 (daily ed. Mar. 12, 1996) (statement of Sen. Chafee) (“God did not direct [Noah] to select only the most beautiful animals or those plants that might have some particular use to mankind.”); RICHARD A. YOUNG, HEALING THE EARTH: A THEOCENTRIC PERSPECTIVE ON ENVIRONMENTAL PROBLEMS AND THEIR SOLUTIONS 92-93 (1994) (“If Noah were a modern, he would probably balk at the expense of building an ark to save swine. Noah, however, was not concerned with the utility of the animals . . . .”); SUSAN POWER BRATTON, CHRISTIANITY, WILDERNESS, AND WILDLIFE: THE ORIGINAL DESERT SOLITAIRE 305 (1993) (indicating that Noah teaches “that all creation should be saved together; bits and pieces won’t do”); Holmes Rolston III, Wildlife and Wildlands: A Christian Perspective, in AFTER NATURE’S REvolt: ECO-JUSTICE AND THEOLOGY 122, 139 (Dieter T. Hessel ed., 1992) (observing that Noah “was not taking on board only those species with economic, agricultural, medical, industrial, and recreational value”); Tony Campolo & Ron Sider, All Creatures Great and Small, ATLANTA J. & CONST., Feb. 18, 1996 (“There’s no record [that] Noah... couldn’t be bothered with animals that were seemingly ‘insignificant.’”); Calvin B. DeWitt, The High Price of Gopher Wood, GREEN CROSS, Winter 1996, at 4 (noting that Noah did not question “the significance or worthiness of each species”); Loren Wilkinson, A Theology of the Beasts, GREEN CROSS, Winter 1996, at 6 (1996) (reminding that “all living creatures were to be saved from the Flood, not just the ones that were useful.”). But cf. DICK MORRIS, BEHIND THE OVAL OFFICE 117 (1997) (reporting that President Clinton jokingly remarked to Vice President Gore that “there were no snail darters on the ark.”).

180. See YOUNG, supra note 179, at 92-93 (noting that Noah was not concerned about “building an ark that size”); DeWitt, supra note 179, at 4 (observing that God “asked Noah to build a large boat out of gopher wood at great cost of time, energy and materials to save not only himself and his family, but also the other creatures. Concerns about time or money apparently were not raised by Noah.”); Calvin B. DeWitt, The High Price of Gopher Wood, GREEN CROSS, Winter 1996, at 4 (noting that Noah did not question “the significance or worthiness of each species”); Loren Wilkinson, A Theology of the Beasts, GREEN CROSS, Winter 1996, at 6 (1996) (reminding that “all living creatures were to be saved from the Flood, not just the ones that were useful.”). But cf. DICK MORRIS, BEHIND THE OVAL OFFICE 117 (1997) (reporting that President Clinton jokingly remarked to Vice President Gore that “there were no snail darters on the ark.”).

181. Babbitt, supra note 14, at 5; see also 142 CONG. REC. S1907 (daily ed. Mar. 13, 1996) (statement of Sen. Reid) (quoting letter from EBN leaders relying on “the everlasting covenant between God and all living creatures of every kind on Earth”); STEVEN BOUMA-PREDIGER & VIRGINIA VROBLESKY, ASSESSING THE ARK: A CHRISTIAN PERSPECTIVE ON NON-HUMAN CREATURES AND THE ENDANGERED SPECIES ACT 23 (Crossroads Monograph Series on Faith and Public Policy, Keith J. Pavlish & Heidi Rolland Unruh eds., 1997) (“Like a drumbeat, six times in verses 8-17 the text declares that God’s
“God was more concerned about preserving animal species than sinful people.” Moreover, the flood confronted by Noah has been compared to the flood of people and pollution that threatens biodiversity today. In short, “Noah’s ark was really the first Endangered Species Act.”

The covenant is described in Genesis 8:20-9:17. 

A Word on Animals and Endangered Species, GREEN CROSS, Winter 1996, at 14; see also Calvin B. DeWitt, Christian Environmental Stewardship: Preparing the Way for Action, (visited July 8, 1996) <http://www.sal.cs.uuic.edu/~beckman/ivcf.paper.html> (asserting that the story of Noah shows that “[s]aving animal lineages was more important to God than saving those who were destroying what God ordained,” but adding that “[p]eople are more important than other creatures because they are given the unique character and responsibility to image God’s love”).

See GORE, supra note 181, at 245 (“[D]oes God’s instruction have new relevance for those who share Noah’s faith in this time of another worldwide catastrophe, this time one of our own creation?”); Rolston, supra note 179, at 139 (referring to the imminent “floodlike threat” posed by humans to other species); DeWitt, supra note 179, at 5 (asserting that a human tide is sweeping the world); Evangelical Group Launches Environmental Campaign, CATHOLIC WORLD NEWS, Feb. 1, 1996 <http://www.cwnnews.com/news/viewrec.cfm?RefNum=4> (describing an EEN advertisement that proclaims that “today, God’s creatures are threatened by our own great flood—of pollution or habitat destruction”); Campolo & Sider, supra note 179 (writing that “we are the human flood that is sweeping across the world.”). But see Robert Whelan, Greens and People, in ROBERT WHELAN ET AL., THE CROSS AND THE RAIN FOREST: A CRITIQUE OF RADICAL GREEN SPIRITUALITY 90 (1996) (“Because Christians believe in the unique nature of every human being, made in the image and likeness of God, it becomes impossible to subscribe to the notion that human beings can ever be a form of pollution.”).

Diane Tennant, God’s Green Earth Casting Aside Long-Standing Theological Differences, Diverse Faiths Come Together in a Basic Belief That Man Must Care for God’s Creation, VIRGINIAN-PILOT & LEDGER STAR, Aug.
Perhaps those advocating choices among species could not have anticipated the prominence that Noah would achieve in the debate over the ESA, thanks to Secretary Babbitt and EEN and others, but the story is not exactly new. We face a seemingly unsolvable dilemma if the story of Noah teaches the lessons suggested above. Imitating Noah means that we should preserve all species, but our limited resources prevent us from doing so. That dilemma could be avoided, though, if the objections to reliance on the story of Noah as a justification for extending legal protection to all species alike are persuasive.

There are three such objections. The first objection claims that the story of Noah fails to provide a religious or moral duty to protect all species. Noah's example allows for some uncertainty about whether he (and God) intended to protect all of the species that we recognize today, and the balance of the scriptural record indicates a more nuanced relationship between people and the world in which we live. The claim that Noah imposes a duty to protect all endangered species, however, remains sound. This is true regardless of the authority (if any) one attributes to Genesis because Noah also supports moral, nonreligious theories of species preservation. The second objection rejects reliance on Noah's example as the basis for creating a legal duty, and specifically the precise legal obligations imposed by the ESA. A legal duty to protect biodiver-

sity seems inevitable because of the pressures on species today, though the equivalence between the story of Noah and the ESA is much more debatable. The third objection contends that the religious and moral nature of the story makes it unconstitutional to rely on it as a justification for a law like the ESA. But a law based on Noah would probably survive constitutional attack, if for no other reason than the difficulty in distinguishing a statute protecting endangered species from other statutes allegedly based on purely moral concerns. In short, each of the concerns about relying on the story of Noah to justify the ESA’s formal protection of all species alike merits serious attention, but I remain convinced that Noah’s example teaches that the law should protect all endangered species alike.

A. THE RELIGIOUS OR MORAL DUTY ESTABLISHED BY THE STORY OF NOAH

The invocation of the story of Noah by Secretary Babbitt and other supporters of the ESA has prompted complaints from those who question the lessons of that story for the protection of endangered species. The easiest way out is to dismiss the authority of the scriptures, though even then Noah’s example can support a moral argument for species preservation.\(^{185}\) The task is trickier for opponents of the ESA who wish to remain faithful to the scriptural commands as they dispute the relevance of the story of Noah. Assume for a moment, therefore, that faithfulness to God includes a desire to follow Noah’s example. That assumption notwithstanding, the conclusions that Secretary Babbitt and others have drawn from Noah’s example have been challenged as contrary to the balance of the scriptural teachings on the environment.

To begin with, it is not clear that Noah understood species as we do today. The word that is sometimes translated “species” in Genesis is more often translated as “kind.”\(^{186}\) The modern conception of species derives from the eighteenth century work of Carl Linnaeus, who constructed the elaborate scheme dividing the natural world into kingdoms, classes, orders, genera, and species.\(^{187}\) There is no evidence that Noah anticipated that classification scheme as he prepared to collect

\(^{185}\) See infra text accompanying notes 221-229.

\(^{186}\) See, e.g., Genesis 7:3 (Revised Standard) (indicating that the animals were placed on the ark “to keep their kind alive upon the face of the earth”).

\(^{187}\) See MANN & PLUMMER, supra note 11, at 31-32. The current classification scheme adds phylums and families. See id. at 32.
the animals for the ark. Indeed, we do not know what “kinds” of animals Noah saved: he might have used a broader test that admitted a pair of squirrels onto the ark but not a pair of each different type of squirrel, or he might have used a narrower test that admitted lots of different squirrels based on more refined characteristics than biologists rely upon today.

Whatever Noah’s understanding of “species,” he made a few distinctions between them. Fish were seemingly left off the ark to fend for themselves, though a flood hardly presents a mortal threat to the survival of most fish.\(^{188}\) Perhaps more significantly, more clean animals were brought on the ark than unclean animals,\(^{189}\) a distinction that could suggest that different species possess different value. The apparent explanation for the extra numbers of each clean species appears in the next chapter of *Genesis*, where Noah used clean animals for an offering to God.\(^{190}\) Additionally, after Noah and his cargo survived the flood, God allowed people to eat meat for the first time—but only the meat of clean animals.\(^{191}\) This episode offers some support for the utilitarian claim that species that are most useful for food (or for sacrifices) are most deserving of preservation efforts today. Moreover, literal adherence to Noah’s example would require us to save only one mating pair of each species.\(^{192}\) Such a two animal minimum would offer little solace to those

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\(^{188}.\) *But see* Tennessee Valley Authority v. Hill, 437 U.S. 153, 162 (1978) (citing the Interior Secretary’s view that the snail darter would become extinct if the Tellico Dam was completed because the streams preferred by the fish would be flooded once the dam was closed); Endangered and Threatened Wildlife and Plants; Proposed Rule to List Three Aquatic Snails as Endangered, and Three Aquatic Snails as Threatened in the Mobile River Basin of Alabama, 62 Fed. Reg. 54,020 (1997) (observing that the construction of dams had decimated the large number of freshwater snail species in the Mobile River Basin).

\(^{189}.\) See *Genesis* 7:2-3 (instructing Noah to take seven pairs of each clean animal and each bird, but only one pair of each unclean animal); *see also* Rolston, *supra* note 174, at 139 (making this observation). By contrast, God’s initial instruction to Noah required two of every species, *see Genesis* 6:19-20, and the actual progression of animals onto the ark occurred “two by two,” *see Genesis* 7:9.

\(^{190}.\) *See Genesis* 8:20 (New Int’l) (“Then Noah built an altar to the LORD, and took of every clean animal and of every clean bird, and offered burnt offerings on the altar.”).

\(^{191}.\) *See Genesis* 9:3-4.

\(^{192}.\) The broader reading of the story of Noah is that it imposes an obligation to protect species “in numbers sufficient to preserve their fruitfulness.” Bouma-Prediger & Vroblesky, *supra* note 181, at 22. For an argument that Christianity imposes a duty to protect individual animals in addition to species as a whole, see Nash, *supra* note 181, at 179-81.
concerned about the ESA, though, because it still acknowledges a duty to protect every species. Furthermore, the actions necessary to protect the last two members of a species are likely to be nearly as expensive and burdensome as preserving a larger number.

The fact remains, however, that Noah sought to preserve all “kinds” of animals by placing them on the ark, and the few qualifications on that effort were quite modest. Perhaps, though, the story was not meant to be normative. The flood was a one time occurrence; maybe Noah’s actions were unique, too. There is no indication that Noah realized he was establishing a precedent. A related concern objects to the use of the story of Noah as a “proof text,” plucking a biblical teaching out of context to support a point it was never intended to make. Perhaps Robert Booth Fowler’s observation that “it is hard to avoid the sense that some liberal Protestant environmentalists try much too hard to discern an ecological Bible” best summarizes this concern. To be sure, there is no biblical verse that commands “thou shalt preserve every species on earth,” nor does species preservation figure prominently elsewhere in the scriptures. But to dismiss the story of Noah so readily ignores that God must have had a reason in commanding Noah to take every species onto the ark. Indeed, the story of Noah shows that God was concerned enough about the preservation of every species to require Noah to go to extraordinary lengths to save them. The rest of the scriptures offer no suggestion that God’s interest in biodiversity has waned over time. The reason for Noah’s burden would appear to apply equally to his descendants today. Moreover, to the extent that Noah was concerned about saving himself, not just the animals, it is possible that our fate is linked to the survival of the life around us, too.

Maybe we are in the same boat as Noah after all.

194. See Endangered Species Protection Hearing, supra note 43, at 68 (statement of Mollie Beattie, Director of the FWS) (“If we are creating a world which is so inhospitable that hundreds and even thousands of species cannot survive, ultimately we will find our own survival threatened as well.”); Endangered and Threatened Wildlife and Plants; Final Rule to List Three Aquatic Invertebrates in Comal and Hays Counties, TX, as Endangered, 62 Fed. Reg. 66,295, 66,299 (1997) (arguing that protecting three tiny aquatic invertebrates “will have a positive effect to humans in that it will ensure the persistence of the water resource” on which humans depend); Houck, supra note 59, at 978-79 (“[W]e need the animals as much as Noah did. If we ignore them, we sink. If we focus on saving them, they will bring us home.”).
Those seeking to avoid a duty to protect every endangered species are more likely to turn to other parts of the scriptures. *Genesis* records that God entrusted man with dominion over the earth, a notoriously difficult passage for environmentalists.\(^{195}\) *Genesis* further directs man to “fill the earth and subdue it.”\(^{196}\) Former Interior Secretary Manuel Lujan cited the dominion command to justify actions that could result in the loss of a species.\(^{197}\) Representative Dannemeyer has complained that the ESA “has reversed” God’s grant of dominion so that “[a]nimals today are more important than people.”\(^{198}\) Representative Cooley has expressed his belief that “we are going against God” by protecting endangered species, adding that “maybe we might be the higher creatures of God’s creation.”\(^{199}\)

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195. *See Genesis* 1:26 (“Then God said... ‘let [man] have dominion over the fish of the sea, over the birds of the air, and over the cattle, over all the earth and over every creeping thing that creeps on the earth.’”) ; *Genesis* 1:28 (commanding man to “fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on the earth”); see also *Jeremiah* 27:6 (indicating that God gave the wild animals to serve Nebuchadnezzar, the king of Babylon); *Psalms* 8:6 (“You have made him to have dominion over the works of Your hands; You have put all things under his feet.”) (emphasis in original). The classic example of the argument that such passages are to blame for modern environmental problems is presented in Lynn White, Jr., *The Historical Roots of our Environmental Crisis*, 155 *Science* 1203 (1967); see also George Cameron Coggins, *Snail Darters and Pork Barrels Revisited: Reflections on Endangered Species and Land Use in America*, in *Kohm*, supra note 51, at 72 n.1 (“In Genesis, God commanded Man to assert dominion ‘over every thing that moves.’ This injunction has been observed much more closely than other biblical lessons.”).

196. *Genesis* 1:28 (“Be fruitful and multiply; fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on the earth.”).


199. *Washington* ESA Hearing Part II, *supra* note 10, at 25 (statement of Rep. Cooley); see also Houck, *supra* note 37, at 698 (contending that “the ESA is simply a gratuitous act of insanity” for those who believe that “God gave this world to human beings and not to snail darters or wolves”). For some of the many remarks about the relative position of people and endangered species made during the recent debate over proposed legislation to exempt certain flood projects from the ESA, see 143 *Cong. Rec.* H2289 (daily ed. May 7, 1997) (statement of Rep. Chenoweth) (complaining that the ESA results in “laws of the beetle, by the beetle, and for the beetle”); id. at H2291 (statement of Rep. Bishop) (asserting that the majority of his constituents believe that “the preservation of human life should take priority over the preservation of endangered species”); id. at H2299 (statement of Rep. Bonilla) (expressing disbelief that anyone could think that bugs and beetles and snails are more important than people); id. at H2308 (statement of Rep. Chenoweth) (asking “when are we going to put humans and human property above the lives of a
Likewise, the head of the National Association of Evangelicals has worried that "[t]here is a certain pantheistic element in all this," contrary to the biblical mandate.\textsuperscript{200}

The gist of such statements is that people are more important than animals. One possible corollary of that assertion is that the value of each species is measured by its value to humans. But such an effort to justify choices among species conflicts with other biblical texts that indicate that all parts of creation have value to God independent of their utilitarian value.\textsuperscript{201} In any event, while the superior position of people to other forms of life could influence the resolution of conflicts between humans and animals, it would not necessarily support distinctions between different kinds of non-human life. In other words, even though God may be most concerned about people, there is no scriptural evidence that God prefers some animals or birds to others. Indeed, the whole issue of the relative position of humans vis-à-vis the rest of the world—while exceptionally controversial in environmental and theological circles\textsuperscript{202}—is a red herring when considering choices among endangered species.

\begin{quote}
beatle [sic] or a snail or various other species?\textsuperscript{200}); id. at H2311 (statement of Rep. Lewis of Cal.) (asserting that "the extreme environmental groups place species protection over the protection of humans"); id. at H2283 (statement of Rep. Young of Alaska) (contending that "the professional environmentalists" are "favoring beetles and their habitat over the protection of human life, property, and environment").


201. See, e.g., Genesis 1:10, 12, 18, 21, 25 (recording God's description of creation as "good"); Matthew 6:26 (noting that God feeds the birds even though they "neither sow nor reap nor gather into barns"); Matthew 6:28 (praising the beauty of the lilies of the field despite the failure of lilies to do any useful work); see also Bratton, supra note 179, at 291 (concluding that Genesis teaches that all creatures "have inherent worth because they were made by God"); \textit{Liberating Life: A Report to the World Council of Churches, in Gottlieb, supra note 176, at 255 ("Before and apart from the creation of human beings, God sees that the animals are good.")}.

202. See infra at text accompanying note 219.\end{quote}
While balancing human needs versus the needs of biodiversity lies at the heart of current disputes over the ESA, the official position of the ESA is that the particular species at issue is irrelevant to the proper balance to be achieved.

There is a more basic problem, though, with such lines of argument. The dominion of which Genesis speaks should not be understood as a license for humans to do whatever they want to the world for whatever purpose they happen to have in mind. The word “dominion” is used elsewhere in the scriptures to refer to a peaceful rule designed to serve those living subject to it. Conversely, those who exercise dominion in a way that serves only their own desires received harsh criticism.

A better understanding of the implications of the dominion command of Genesis can be gleaned from three models presented in the biblical account. Dominion as kingship reflects the just, righteous rule that God expected of Israelite kings. Dominion as servanthood imitates the way in which God provides for creation and the kind of rule that Jesus described in the New Testament. Dominion as stewardship posits that

203. See, e.g., Leviticus 25:43 (instructing that “[y]ou shall not rule over [your slaves] with rigor, but you shall fear your God”); 1 Kings 4:24 (describing a king who had dominion and who “had peace on every side all around him”); see also Lloyd H. Steffen, In Defense of Dominion, 14 ENVTL. ETHICS 63, 64-66 (1992) (analyzing other scriptural uses of the word “dominion”).

204. See Ezekiel 34:4 (New International) (prophet observing that “[t]hose who are sickly you have not strengthened, the diseased you have not healed, the broken you have not bound up, the scattered you have not brought back, nor have you sought for the lost; but with force and with severity you have dominated them” (emphasis added)); see also NASH, supra note 181, at 103 (asserting that the dominion mandate does not support “oppression” or “despotic, totalitarian rule over nature”).

205. See NEW GENEVA STUDY BIBLE, supra note 177, at 8 n.26 (describing the command to exercise dominion as a “cultural mandate to rule the creation as benevolent kings”); NASH, supra note 181, at 104 (listing the affirmative obligations of Old Testament rulers); YOUNG, supra note 179, at 172 (detailing the obligations imposed on rulers by God throughout the Old Testament); William Dyrness, Stewardship of the Earth in the Old Testament, in GRANBERG-MICHAELSON, supra note 200, at 53 (contrasting the rule of Hebrew kings with those of the ancient Near East).

206. God’s provision for creation is illustrated throughout the scriptures. See, e.g., Psalms 36:6 (“O LORD, You preserve man and beast.”); Psalms 147:8-9 (New Intl) (observing that God “supplies the earth with rain and makes grass grow on the hills”); Matthew 6:26, 28 (noting that God feeds the birds and clothes the grass). Likewise, the New Testament states that dominion belongs to Jesus Christ, see 1 Peter 4:11, and that Jesus taught that “[w]hoever wants to become great among you must be your servant, and whoever wants to be first must be your slave.” Matthew 20:26-27 (New Intl); see
God is the owner of creation who has asked us to serve as a trustee responsible for managing the earth on God's behalf.\textsuperscript{207}

Stewardship is the prevalent model. God's status as the owner of creation is confirmed throughout the scriptures and elsewhere: \textit{Genesis} reports that God created all species,\textsuperscript{208} other biblical passages refer to the resulting creation (including wildlife) as belonging to God,\textsuperscript{209} and references to all endangered species as "God's creatures" occur frequently in the debate over the ESA.\textsuperscript{210} Like other trustees, people should not act

\begin{itemize}
\item 207. \textit{See, e.g., Thomas Sieger Derr, ENVIRONMENTAL ETHICS AND CHRISTIAN HUMANISM} 22 (1996) (characterizing stewardship as "the real, orthodox Christian attitude toward nature" which teaches that "we are trustees for that which does not belong to us"); \textit{Francis A. Schaeffer, POLLUTION AND THE DEATH OF MAN: THE CHRISTIAN VIEW OF ECOLOGY} 70 (1970) (contending that "we are to exercise our dominion over these things not as though entitled to exploit them, but as things borrowed or held in trust"); \textit{Young}, supra note 179, at 173-77 (noting that stewardship implies delegated authority akin to a trust, contradicts human autonomy, implies moral responsibility, requires proper use and management, and involves human creativity). For criticisms of the stewardship model as human centered or hierarchial, see \textit{Michael S. Northcott, THE ENVIRONMENT AND CHRISTIAN ETHICS} 129-30 (1986); Clare Palmer, \textit{Stewardship: A Case Study in Environmental Ethics, in THE EARTH BENEATH: A CRITICAL GUIDE TO GREEN THEOLOGY} 67-86 (Ian Ball et al. eds., 1992); \textit{see also Bill McKibben, THE COMFORTING WHIRLWIND} 51 (1994) (complaining that "the idea of 'stewardship' is so lacking in content as to give us very little guidance about how to behave in any given situation"). \textit{See generally Fowler, supra note 193, at 76-90 (1995) (surveying a range of Protestant views of stewardship).}
\item 208. \textit{See Genesis} 1:20-25. The implications of the creation story for biodiversity preservation are discussed in \textit{Peter DeVos et al., EARTHKEEPING IN THE NINETIES: STEWARDSHIP OF CREATION BY THE FELLOWS OF THE CALVIN CENTER FOR CHRISTIAN SCHOLARSHIP, CALVIN COLLEGE} 39-40, 237-54 (rev. ed. 1991); \textit{Barlow, supra note 176, at 797-812; Rolston, supra note 179, at 137, 140.}
\item 209. \textit{See, e.g., Deuteronomy} 10:14 (New Int'l) ("Behold, to the LORD your God belong the heavens, even the highest heavens, the earth and everything in it."); \textit{Psalms} 24:1 (New Int'l) ("The earth is the LORD's, and everything in it, the world, and all who live in it."); \textit{Psalms} 50:10-12 (New Int'l) (quoting God as proclaiming that "every animal of the forest is Mine . . . the creatures of the field are Mine," and "the world is Mine, and all that is in it").
to further their own best interests, but instead to best serve the owner. And God—the owner—values each part of creation. God also values the diversity of creation. Moreover, the biblical account anticipates a world that is to thrive in its own right and that will eventually be redeemed. This stewardship model is further supported by the instruction given by

Rep. Rahall; ESA Listing Moratorium Hearing, supra note 76, at 7, 33 (statements of Sen. Boxer); DWORKIN, supra note 174, at 79 (describing how many people want to protect endangered species because they view them as “God’s creatures”); see also 143 CONG. REC. H2311 (daily ed. May 7, 1997) (statement of Rep. Dingell) (describing the salmon as “one of God’s great gifts to the people of the Western United States”); Louisiana & Texas ESA Hearings, supra note 7, at 73 (testimony of Paul Davidson, President, Louisiana Wildlife Federation) (“When the good Lord made all these creatures, he probably thought they were significant.”). Opponents of the ESA use the metaphor, too. See 125 CONG. REC. 23867 (1979) (statement of Sen. Baker) (observing that the snail darter “kept the lowest profile of all God’s creatures for thousands of years until a relatively short time ago, but now he seems to enjoy the publicity”).

211. See BOUMA-PREDIGER & VROBLESKY, supra note 181, at 9-10 (explaining that all species are valuable simply because they are creations of God); NASH, supra note 181, at 99 (citing biblical passages demonstrating that the creation is valuable to God independent of any human utility); Billy Graham, Does God Care About Animals?, CHATTANOOGA FREE PRESS, Feb. 27, 1997, available in LEXIS, News Library, Chfpr file (proclaiming that “to drive to extinction something [God] has created is wrong, for He has a purpose for everything”); Wilkinson, supra note 179, at 6 (asserting that “God delights in animals for their own sakes”).

212. See, e.g., Liberating Life, supra note 201, at 262 (reading Genesis to teach that God views the “rich diversity of plant and animal life” as “very good”); United States Catholic Conference, Catholic Social Teaching and Environmental Ethics, in GOTTIEB, supra note 176, at 645 (asserting that “[t]he diversity of life manifests God’s glory); Arthur Waskow, What is Eco-Kosher?, in GOTTIEB, supra note 176, at 300 (comparing the effects of modernity on the diversity of species and the diversity of human cultures); Ball, supra note 206, at 8 (claiming that Christians desire to live in a country “where the rich diversity that God created is protected”).

213. See Genesis 1:10, 12, 18, 21, 25 (God characterizing the creation as “good”); Genesis 1:22 (God commanding animals and birds to “be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the earth”); Romans 8:19-20 (asserting that “the creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God”). See generally NASH, supra note 181, at 124-33 (recounting historic Christian approaches to the consummation of creation); Richard J. Clifford, The Bible and the Environment, in PRESERVING THE CREATION: ENVIRONMENTAL THEOLOGY AND ETHICS 12-14 (Kevin W. Irwin & Edmund D. Pellegrino eds., 1994) (discussing prophetic writings indicating that nature will be healed); Loren Wilkinson, The Uneasy Conscience of the Human Race: Rediscovering Creation in the “Environmental” Movement, in GOD & CULTURE 314-16 (D.A. Carson & John D. Woodbridge eds., 1993) (asserting that traditional Christian writings support a broad view of the redemption of creation).
God to Adam in *Genesis* to tend the earth and to "keep" it. The stewards of creation, therefore, must treat the creation in a manner that reflects the value and purpose that God places on the creation.

The proponents of the ESA and the protection of biodiversity emphasize such understandings of dominion. Indeed, a recent monograph written by two evangelical scholars asserts that the duty to protect endangered species flows from a variety of biblical themes. Christians should care for endangered species, they say, "because non-human creatures are valuable in themselves as creations of a good and loving God, because we as God's image-bearers are given the responsibility of keeping creation, and because such care is a fitting response of gratitude for the good gifts God provides." In short, "we have to tend the earth and to "keep" it."

214. *Genesis* 2:15. The significance of the obligation to "keep" the earth is revealed by other uses of that word in the scriptures. See *Genesis* 3:24 (describing how God placed an angel at the eastern edge of Eden to "guard" the garden from people seeking the tree of life); *Numbers* 6:24 (benediction asking the Lord to bless you and to "keep" you); see also VAN DYKE ET AL., supra note 181, at 90 (commenting that "Adam probably would not have looked at an ostrich as a large pair of drumsticks or a hippopotamus as a ton of chuck steak"); Ronald J. Sider, *Redeeming the Environmentalists*, CHRISTIANITY TODAY, June 21, 1993, at 28 ("Our dominion must be the gentle care of a loving gardener, not the callous exploitation of a self-centered lord. So we should not wipe out species or waste the nonhuman creation.").

215. See, e.g., DEVOS ET AL., supra note 208, at 275-306 (chapter on dominion as stewardship); GORE, supra note 181, at 243 ("The requirement of stewardship and its grant of dominion are not in conflict; in recognizing the sacredness of creation, believers are called upon to remember that even as they 'till' the earth they must also 'keep' it."); Robert P. Meyers, *Invitation to Wonder: Toward a Theology of Nature*, in GRANBERG-MICHAELSON, supra note 200, at 46 (contending that dominion "does not mean . . . destroying a whole species"); Plater, supra note 67, at 325 n.66 ("The Biblical story of Noah . . . also represents the concept that humanity's dominion over nature is tempered by a duty of stewardship for future generations."); Krueger, supra note 17, at 2 (arguing that the dominion command provides the basis for a duty to preserve endangered species); Wilkinson, supra note 179, at 6-7 (reading the dominion command as consistent with God's interest in preserving endangered species); cf. *H.R. 2275 Hearing*, supra note 8, at 420 (testimony of Rev. John D. Paarlberg) ("[T]he task of 'dominion' does not have to do with exploitation and abuse. It has to do with securing the well-being of every other creature and bringing the promise of each to full fruition." (quoting WALTER BRUEGGERMANN, *GENESIS 32-33 (1982)); id. at 89 (statement of Rep. Chenoweth) (interpreting Psalm 8 to direct man "to have dominion and to care for all the works of the earth" and "to be very, very good stewards").

216. See BOUMA-PREDIGER & VROBLESKY, supra note 181, at 9-38 (finding a duty to protect biodiversity in creational integrity and dependence, creational finitude, human finitude and faultedness, creational fruitfulness, the concept of the Sabbath rest, earthkeeping, and righteousness).

217. Id. at 6.
a prima facie duty to protect and preserve non-human species.\textsuperscript{218}

The broader scriptural context, therefore, supports the duty to preserve biodiversity implicit in the story of Noah. But even when they are properly understood, the biblical commands—especially the command to exercise dominion—conflict with ethical theories that treat people and other species in an identical fashion. The claim of "speciesism"—a discriminatory preference for the human species over all other species—has been leveled against Christian environmentalists and others who acknowledge a higher ethical position for humanity.\textsuperscript{219} The balance between human needs and the needs of animals will be set differently by someone seeking to adhere to the biblical account and by someone seeking to treat all species (including humans) alike. The dilemma that those advocating animal rights face when choosing between the survival of a human baby or a dog is not a dilemma at all according to the teachings of Genesis.\textsuperscript{220} Yet it is not true that the balance between human needs and animal needs taught by Genesis always tips in favor of human needs. The story of Noah expending tremendous time and resources "to keep the species alive on the face of all the earth" is simply the most dramatic example of the scriptural imperative for preserving biodiversity. The creation story, God's command to Adam to "keep" the land, and numerous passages throughout the whole Bible provide similar evidence of the duty to act in a manner that protects all of creation, even if human desires must be sacrificed in the process.

All of this assumes a desire to imitate Noah because of religious conviction. Of course, one could possess a religious conviction that adheres to the general teachings of scripture while questioning whether the story of Noah and the ark is literally true. Efforts to imagine how all of the world's animals fit on the ark have occupied writers for centuries, with no obvious answer immediately

\textsuperscript{218} \textit{Id.} at 11 (emphasis omitted).


\textsuperscript{220} See, e.g., Gary L. Bauer, \textit{Our Hopes Our Dreams: A Vision for America} 126 (1996) (reporting that when asked whether she would save a baby or a dog, an animal rights activist answered "that depends on whether it was my baby or my dog").
at hand. But the lessons of the story of Noah do not depend upon whether it records an historic event or not. There must be a reason why *Genesis* includes the story, and while that reason may not be clear, it does not appear to change depending upon the actual occurrence of the flood and Noah’s response to it.

For those who deny the authority of the scriptures, the story of Noah does not instill a religious obligation to preserve all species. Nevertheless, the relevance of the story for the preservation of endangered species cannot be so easily dismissed. Noah’s example can be understood to establish a moral principle, not a uniquely religious one. Zygmunt Plater asserts that “we should adopt a Noah Presumption, a strong presumption in favor of protecting all endangered species, rather than a dismissive Noah’s Choice, unless human necessities clearly outweigh the importance of doing so.”

Similarly, biologist David Ehrenfeld affixes the label the “Noah Principle” to the claim that “[l]ong-standing existence in Nature is deemed to carry with it the unimpeachable right to continued existence.” In particular, Noah provides “an excellent precedent” because “[n]ot a single species was excluded on the basis of low priority, and by all accounts not a single species was lost.”

All species, therefore, have a right to exist.

Mann and Plummer call the Noah Principle “unethical and impracticable.” They explain:

> It is unethical, because trying to save every species perfectly would force our society to destroy many or all of its other accomplishments, an act of self-immolation that the ecologically concerned cannot force on

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221. *See* MANN & PLUMMER, *supra* note 11, at 30-31 (recounting some of the theories about the presence of every species of animal aboard the ark).

222. Plater, *supra* note 80, at 847.

223. DAVID EHRENFELD, *THE ARROGANCE OF HUMANISM* 208 (1978). “Existence,” adds Ehrenfeld, “is the only criterion of the value of parts of nature.” *Id.* Ehrenfeld emphasizes the limits of relying on economic values (or even assigned economic values) as a rationale for protecting all species. *See id.* at 179-204. But Ehrenfeld finds other values—non-economic, religious values—capable of championing all living species. *See id.* at 204-11.

[When a community or species has no known economic worth or other value to humanity, it is as dishonest and unwise to trump up weak resource values for it as it is unnecessary to abandon the effort to conserve it. Its non-humanistic value is enough to justify its protection—but not necessarily to assure its safety in this human-obsessed world culture.]

*Id.* at 210.

224. *Id.* at 204; *see also id.* at 203 (noting that the principle is named “after the person who was one of the first to put it into practice”).

225. MANN & PLUMMER, *supra* note 11, at 216.
others, who may have different but equally worthy goals. And it is impracticable, because this perfect duty is impossible to fulfill, even if our society were willing to turn back three hundred years of its history.226

In one respect this argument is misplaced. Mann and Plummer see the ESA as the embodiment of the Noah Principle, but the implementation of the law reveals that the ESA countenances choices among species.227 Mann and Plummer further oppose the Noah Principle because it prevents any constructive debate about conflicts between endangered species and other interests.228 They worry that reliance on the principle makes it impossible for us to play Noah, but that is incorrect. Mann and Plummer's real objection is that the ESA's apparent acceptance of the Noah Principle does not allow us to play God.

The existence of a moral duty to preserve all species does not depend upon our ability to satisfy that duty. A moral obligation is not extinguished by a lack of resources.229 Nor are conflicting moral obligations unusual. Faced with multiple demands on our limited time and resources, we are frequently required to choose among many worthy causes that we acknowledge a duty to support. Mann and Plummer characterize the Noah Principle as unethical because it precludes such choices. And they endorse the methods of resolving the ethical dilemmas posed by resource limitations articulated in Guido Calabresi and Philip Bobbitt's famous book, Tragic Choices.230

226. Id. at 143.
227. See supra Part III.
228. See MANN & PLUMMER, supra note 11, at 25 ("To embrace the Noah Principle is to deny that we can legitimately choose against nature. On moral, ethical, and spiritual grounds, we must preserve biodiversity above all else . . . ."); id. at 137 ("By denying that species may be distinguished on prudential grounds, [the Noah Principle] provides no practical guidance in a world distinguished by choice—it is a switch that is always stuck on yes, no matter what else may be happening."); id. at 143 ("Reverence for biodiversity . . . stands alongside other values, and we must negotiate among them."); id. at 158 (describing the absence of a legal balancing mechanism as "a Noah Principle law"); see also ESA Reauthorization Hearing, supra note 12, at 185 (testimony of Mark L. Plummer) ("The time has come to question the goal that underlies the Endangered Species Act: Save every species, no matter what the cost."); Mann & Plummer, supra note 40, at 52 ("The choice is inescapable—but the Endangered Species Act, in its insistence that we save every species, implicitly rejects this responsibility.").
229. Nor, for that matter, is a legal duty. See Environmental Defense Center v. Babbitt, 73 F.3d 867, 871 (9th Cir. 1995) (holding that the FWS retained a legal obligation to list a species as endangered notwithstanding a statutory ban on any federal spending on listing programs, but acknowledging that the agency could not act until the spending ban expired).
230. GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES (1978); see
Yet Calabresi and Bobbitt exempt certain kinds of duties—including religious duties—from their general approach to allocating valuable but scarce resources depending upon their costs. Thus, the difficulty of preserving biodiversity does not eliminate the duty itself.

The claims that Noah's example requires us to protect endangered species survive the attacks against them. While we may not know exactly which animals Noah acted to save, we do know that God asked him to save all kinds, and that Noah did so. That effort is consistent with other scriptural teachings on the obligation of people to care for what God has created. Or, seen through a different lens, Noah's ark provides a compelling example capable of sustaining a moral duty that fits with scientific teaching about the operation of ecosystems and the significance of individual species. Either way, Noah's effort to preserve biodiversity supports a similar effort on our part today.

B. THE LEGAL DUTY ESTABLISHED BY THE STORY OF NOAH

Even if we should try to imitate Noah, it is not self-evident that the duty suggested by Noah's example (or any other moral, ethical, or religious duty for protecting endangered species) must be translated into a legal duty. The books containing the story of Noah—the Bible in general and Genesis in particular—include countless other commands and stories that have never been adopted in statutory law. None of the proponents of an ESA based on Noah has explained why this is one of the commands demanding legal recognition.

There are, moreover, countless ways to protect endangered species wholly apart from governmental action. The Nature Conservancy is famous for using private funds to purchase lands that serve as habitat for endangered species; the Noah Conservancy has been established by Christian environmentalists to accomplish the same purpose. Private landowners often manage their property in a manner best designed to protect rare wildlife or plants, notwithstanding their limited economic incentive to do so. The small percentage of endangered species that live on public land and the limited ability of the gov-

MANN & PLUMMER, supra note 11, at 213-14 (discussing TRAGIC CHOICES).

231. See CALABRESI & BOBBITT, supra note 230, at 20 (indicating that the costs of achieving a socially desirable outcome should affect the willingness to achieve that outcome unless the preferred outcome "has been arrived at by reference to some external absolute—a religious command, for example").

232. For various estimates of the percentage of endangered species that
ernment to enforce laws against harming endangered species make the actions of such private landowners essential to the preservation of many species. Private environmental groups fund efforts to study and protect endangered species around the world. Under such circumstances, the creation of a legal duty to protect endangered species will not be sufficient to assure the survival of such species; some would go further and say that a legal duty is unnecessary, too.

Unfortunately, the pressures on endangered species indicate that private efforts will be inadequate. Private developers cannot be expected to forgo tremendous economic profits in order to preserve a field that is home to an endangered bird or butterfly. For their part, governmental agencies have not demonstrated any greater willingness to sacrifice their primary mission in order to protect an endangered species. The Tennessee Valley Authority was more interested in the presumed benefits of the Tellico Dam than the survival of the snail darter. More recently, the Army reluctantly searched for training grounds that did not threaten an endangered species. The intentional killing or capture of rare wildlife and plants continues to present a serious threat to the survival of many species in the United States and around the world. The live on public land, see David S. Wilcove et al., Rebuilding the Ark: Toward a More Effective Endangered Species Act for Private Land (1996) (visited March 2, 1998) <http://www.edf.org/pubs/Reports/help-esa/index.html> (Environmental Defense Fund report stating that between one-third and one-half of all protected species do not occur at all on federal land); Dana Clark & David Downes, What Price Biodiversity? Economic Incentives and Biodiversity Conservation in the United States, 11 J. ENVT'L. L. & LITIG. 9, 10 (1996), available in LEXIS Lawrev Library Allrev File (indicating that 50% of the species listed under the ESA live only on private lands); Thompson, supra note 71, at 310 (stating that almost 80% of endangered species live on at least some private land and that more than a third of endangered species do not live on any federal land).


incentives to destroy endangered species—directly or indirectly, intentionally or accidentally—are often too powerful to be stymied by a moral duty alone. Hence the call for laws to preserve endangered species.

Perhaps, however, the legal duty suggested by the story of Noah should simply inspire us to try to protect all species. Even if we cannot actually save every species, we may still want to try to do so because we think that is an important aspiration. The environmental laws are full of aspirational provisions that we know that we cannot meet. The discharge of pollutants into the water did not end in 1985, no matter what the Clean Water Act says. This argument, however, neglects the fact that the ESA is more than symbolic legislation. A person who cuts down a tree that looks attractive to a spotted owl risks being sent to a real jail, not a symbolic one. The ESA goes far beyond stating aspirational goals: criminal fines of $50,000 and civil penalties of $25,000 indicate that the law's command cannot be followed only when convenient. The symbolic legislation explanation does not fit such provisions. And symbolic provisions alone cannot be expected to preserve endangered species. Noah was motivated by his desire to obey God, and many today seek to protect the values of biodiversity that they find important, but a legally enforceable economic incentive or civil sanction will be more persuasive to those who do not share such values.

235. That is the Clinton Administration's position:

I think we should continue to have an Endangered Species Act which sets a goal of striving to protect from going extinct all species in the United States, at least strive to protect them from extinction at the hands of human causes. That doesn't mean that we ultimately can hope to achieve that goal. Whether we can achieve that goal depends on, among other things, the status of some of those species, the amount of money that is appropriated for the program, the extent to which we are creative in structuring partnerships...between government and private landowners and some of the tradeoffs that we make between species protection and socioeconomic factors. H.R. 2275 Hearing, *supra* note 8, at 33 (testimony of George T. Frampton, Jr., Assistant Secretary, Fish & Wildlife & Parks, Department of the Interior). Mann and Plummer would not necessarily object to such a goal. See MANN & PLUMMER, *supra* note 11, at 175 ("A wish to save all endangered species may be ethically tenable if we choose practicable means for striving to come as close as we can to the goal.").


To say that the story of Noah provides the basis for imposing a legal duty to protect every species is not to say that the ESA itself has attained scriptural status. Even if the biblical account supports endangered species legislation, it does not mandate the precise terms of the ESA. Thus numerous writers have questioned whether the analogy between the ESA and Noah's example is appropriate. One ESA critic has noted that "Noah did not seize anyone's property to build the ark, nor did he tax anyone to finance the operation."\textsuperscript{238} Representative Lamar Smith has asserted that "Noah could have been condemned as an animal hater, fined and kept from launching his ark" under the ESA.\textsuperscript{239} Senator Kempthorne doubts that Noah could have gotten the necessary ESA permits before the flood wiped out the earth.\textsuperscript{240}

\textsuperscript{238} Marlo Lewis, Jr., EPA Would Have Arrested Noah, WASH. TIMES, Mar. 14, 1996, at A21, available in LEXIS, NewsLibrary, Wtimes File. Accord David W. Neuendorf, Evangelical Environmentalists Are Wrong (visited Mar. 2, 1998) <http://www.seidata.com/~neusys/colm0044.html> ("[The Evangelical Environmentalists are ignoring the very real violations of God's law that the Endangered Species Act has brought about."); Kanner, supra note 200, at A23 (objecting that religious arguments for environmental protection in general and "disregard the Fifth Amendment and the Eighth Commandment as well"); All Things Considered, supra note 16 (Reformed Theological Seminary Professor Ron Nash commenting that "there are enormous costs that go with [the ESA] as radical environmentalists in the government use this legislation to deprive people of property rights and to handicap people in fulfilling other dimensions of God's dominion mandate").

\textsuperscript{239} Louisiana & Texas ESA Hearings, supra note 7, at 79.

\textsuperscript{240} 142 CONG. REC. S1848 (daily ed. Mar. 12, 1996) (statement of Sen. Kempthorne); accord Endangered Species Act: Hearing Before the House Resources Comm., 104th Cong. 43 (1996) (testimony of Sherry L. Colyer, Bruneau Valley Coalition) ("If Noah had to go through the petitioning, permitting, and consulting process of the current Endangered Species Act, I am fairly certain that out of total frustration, he too, would have left some of God's creatures behind."); Lewis, supra note 238, at A21 ("The supreme irony is that if Noah were alive today, he would be put in jail under the ESA for capturing and transporting endangered species without a federal permit."); Step Out of the Ark with Your Hands Up, WASH. TIMES, May 21, 1997, at A14 (editorial), available in LEXIS, News Library, Wtimes File ("One can only conclude that if the biblical Noah had had to abide by the Endangered Species Act, the world would be a pretty empty place now. Today's Noahs have constructed an ark of unworkable, even unfathomable rules."). But see 143 CONG. REC. H2300 (daily ed. May 7, 1997) (statement of Rep. Vento) ("Blaming the floods of 1997 on the Endangered Species Act would have been like Noah blaming the great flood on the animals he brought with him on the ark."); Statement by Secretary Bruce Babbitt on the "Endangered Species Conservation and Management Act of 1995" (Sept. 7, 1995) (press release) (visited Mar. 19, 1997) <http://yoda.ucc.uconn.edu/users/holsingerkbabbitt.html> (criticizing proposed legislation to amend the ESA by contending that "if Noah had to follow all the rules in this bill, he wouldn't have needed an ark. He could have
The consistency of the requirements of the ESA with the broader scriptural teachings has divided the religious community. Consider some of the conflicts described above. Should we protect butterflies or people from mosquitoes? A beetle or a highway to a hospital? The piping plover or a beach for off-road vehicles? Some find a scriptural preference for the human needs in all such circumstances. An article published by Focus on the Family—a prominent evangelical organization—seized upon a conflict between southern California farmers and the endangered kangaroo rat to assert that "[t]here couldn't be a clearer sign of upside-down morals than a law favoring rats over humans." A Baptist leader has dismissed the ESA as "an unmitigated disaster." Such criticisms object to the sacrifices that the ESA demands that people make for the sake of biodiversity. Defenders of the ESA respond that Noah did not complain about the tremendous amount of time and money that he was asked to spend to preserve species.

The resolution of this dispute depends upon contested understandings of the value of human life, the value of non-fit all the animals he was allowed to save in a canoe.

241. Gelernter, supra note 200, at 4. Gelernter added that "forcing your fellow man to accommodate the interests of every endangered species on the block is no instance of excessive virtue. It isn't virtuous at all. It's depraved." Id. For sharply contrasting accounts of the role of efforts to protect the kangaroo rat in the destruction of southern California farms by forest fires, compare Ike C. Sugg, California Fires—Losing Houses, Saving Rats, WALL ST. J., Nov. 10, 1993, at A20, arguing that FWS efforts to save the kangaroo rat interfered with efforts to save homes from fire, with Michael Allan Wolf, Over-taking the Fifth Amendment: The Legislative Backlash Against Environmentalism, 6 FORDHAM ENVTL. L.J. 637, 644-45 (1995), debunking the claim that protection of the kangaroo rat caused the destruction of any homes.


243. See supra note 179; Campolo & Sider, supra note 179 (asserting that "There's no record of Noah having protested that another kind of lumber might be more cost-effective."); see also BOUMA-PREDIGER & VROBLESKY, supra note 181, at 16, 94 (contending that "[i]t is simply false to pit endangered species against hungry people," and concluding that "the ESA, while not perfect, does not generate unacceptably high or inequitable costs"). But see MANN & PLUMMER, supra note 11, at 235 (speculating that today "Noah would have a budget and a bottom line"). For more systematic efforts to reconcile a biblical duty to protect endangered species with human needs, see NASH, supra note 181, at 190 (identifying six instances in which species preservation can be superseded by other goals, including the satisfaction of basic human needs and the realization of valuable human benefits).
human life, and the cost of protecting each. Note that while the biblical account indicates an unmistakable preference for human life, the story of Noah demonstrates a high value for the preservation of every species, too. And the costs involved—the cost of the actual steps necessary to protect a species, the loss of available resources for other purposes, and the cost of not protecting a species—are rarely clear. Such conflicts between the needs of endangered species and the needs of humans have caused much of the current controversy over the ESA. But whatever the appropriate balance between people and endangered species that is prescribed by the story of Noah, that balance does not affect the suggestion that Noah's example requires that we treat all species of wildlife equally, or that the law require that we do so.

C. THE CONSTITUTIONALITY OF LEGISLATION BASED UPON THE STORY OF NOAH

The creation of a legal duty to protect—or at least not to harm—rare wildlife and plants based on the story of Noah faces criticism from those who object to basing a law on a biblical imperative. Idaho Representative Helen Chenoweth has been particularly outspoken against the invocation of Noah as a justification for the ESA, protesting the incorporation of personal beliefs into laws that punish those who do not share those beliefs. Secretary Babbitt has been criticized for implying that opposition to the ESA equals opposition to God.

244. See 142 CONG. REC. H1002-05 (daily ed. Jan. 31, 1996) (statement of Rep. Chenoweth) (objecting to Secretary Babbitt's speech, characterizing environmentalism as a religion, and concluding that "this religious vision is not shared by every American and no American should be forced to promote a religious vision contrary to their own beliefs"); see also 134 CONG. REC. 18582 (1988) (criticizing the ESA as an effort to change moral attitudes by "the sheer brute force of Government"); The Thoreau Institute, Fixing the Endangered Species Act (visited Apr. 3, 1998) <http://www.teleport.com/~rot/esaafsee.html> (comparing the ESA to Lenin's efforts to force the evolution of ethics).

245. See 1997 Interior Appropriations Hearings, supra note 23, at 1082 (remarks of Rep. Taylor) (quoting a speech in which Babbitt said that congressional opponents of the ESA are "deeply disturbed by the prospect of religious values entering the national debate" over the ESA and telling Babbitt that the speech "implies that if you're not on your side, you're against God"); see also Kanner, supra note 200, at A23 (complaining about Babbitt's reliance upon religious values and asserting that the use of such values violates both the Fifth Amendment and the Eighth Commandment (against stealing)); John Elvin, Is the Interior Secretary Running a Tent Show?, WASH. TIMES, July 29, 1996, at 17, available in LEXIS, News Library, Curnws File (asserting that Babbitt "is inclined to see the effort [to protect the environment] more as a
Additionally, many critics of the ESA characterize much of contemporary environmentalism itself as a form of religious belief. These complaints are often cast in constitutional terms. Critics of Secretary Babbitt's vision of the ESA contend that his efforts violate the Establishment Clause. Indeed, the Establishment Clause has been interpreted to preclude statutes enacted for a religious purpose and without any secular justification. Laws based on the book of Genesis have been especially susceptible to Establishment Clause objections. Other cases, however, indicate that the religious motivation of those supporting a statute does not render it unconstitutional provided that there is a plausible secular purpose for the law.

246. See, e.g., Godliness and Greenness: Thou Shall Not Covet the Earth, THE ECONOMIST, Dec. 21, 1996, at 108, 108 (describing "a worldwide movement in which the boundary between religion and environmentalism is becoming increasingly blurred"); Kanner, supra note 200, at A23 (asserting that "[t]he latest trendy shtick blends environmental law enforcement with religion and blends this resulting hash as public policy").


248. See Edwards v. Aguillard, 482 U.S. 578 (1987) (striking down a Louisiana statute requiring schools that teach evolution to also teach creation science); Wallace v. Jaffree, 472 U.S. 38 (1985) (invalidating an Alabama statute authorizing a moment of silence in public schools); Stone v. Graham, 449 U.S. 39 (1980) (per curiam) (striking down a Kentucky statute requiring public school classrooms to post the Ten Commandments); Epperson v. Arkansas, 393 U.S. 97 (1968) (invalidating an Arkansas statute prohibiting the teaching of evolution in public schools); see also Lemon v. Kurtzman, 403 U.S. 602, 612-13 (1971) (establisihing a three-part test that invalidates a statute if it does not have a secular purpose, if its primary effect advances or inhibits religion, or if it excessively entangles church and state); Agostini v. Felton, 117 S. Ct. 1997, 2010 (1997) (indicating that the purpose test "has remained largely unchanged" in recent years).

249. See Edwards, 482 U.S. at 603-04 (Powell, J., concurring) ("The tenets of creation science parallel the Genesis story of creation, and this is a religious belief."); Epperson, 393 U.S. at 103 ("The overriding fact is that Arkansas' law selects from the body of knowledge a particular segment which it proscribes for the sole reason that it is deemed to conflict with a particular religious doctrine; that is, with a particular interpretation of the Book of Genesis by a particular religious group."). Laws based on Exodus haven't fared too well either. See Stone, 449 U.S. at 39-40 (invalidating a statute requiring the posting of the Ten Commandments).

Moreover, the decisions finding Establishment Clause violations emphasized the absence of any secular justification for the statute, and the statutes at issue addressed topics that impressed the Court as inherently religious—school prayer, the Ten Commandments, and creation versus evolution. Thus, some scholars have advanced Establishment Clause theories that would call into question a broader group of statutes motivated by religious beliefs. Abner Greene, for example, reads the Establishment Clause to bar legislation actually enacted for the dominant express purpose of advancing values commanded by religion, whether or not a secular defense can be made for the law. Greene even posits a case in which a law protecting endangered species would be unconstitutional.

(upholding the Adolescent Family Life Act); Harris v. McRae, 448 U.S. 297, 319-20 (1980) (upholding the Hyde Amendment's denial of federal funding for abortions); McGowan v. Maryland, 366 U.S. 420, 452-53 (1961) (upholding a Maryland statute requiring stores to be closed on Sundays); Cammack v. Waihee, 932 F.2d 765, 782 (9th Cir. 1991) (upholding a Hawaii law making Good Friday a state holiday); see also Edwards, 482 U.S. at 615 (Scalia, J., dissenting) (“We surely would not strike down a law providing money to feed the hungry or shelter the homeless if it could be demonstrated that, but for the religious beliefs of the legislators, the funds would not have been approved.”); Wallace, 472 U.S. at 69-70 (O'Connor, J., concurring in the judgment) (indicating disagreement with an Establishment Clause theory under which “the State could not criminalize murder for fear that it would thereby promote the Biblical command against killing”).

251. See Edwards, 482 U.S. at 585 (holding that the state “identified no clear secular purpose for the Louisiana Act”); Wallace, 472 U.S. at 56 (holding that “the First Amendment requires that a statute must be invalidated if it is entirely motivated by a purpose to advance religion,” and finding that Alabama's moment of silence statute “had no secular purpose”); id. at 65 (Powell, J., concurring) (“Alabama's purpose was solely religious in character.”); Stone, 449 U.S. at 41 (“Kentucky's statute requiring the posting of the Ten Commandments in public school rooms has no secular legislative purpose.”); Eppehimer, 393 U.S. at 107 (“No suggestion has been made that Arkansas' law may be justified by considerations of state policy other than the religious views of some of its citizens.”).


253. See Greene, The Irreducible Constitution, supra note 252, at 305-06.
Reliance upon the story of Noah does not appear vulnerable to an Establishment Clause challenge under any of these approaches. Initially, most of those citing Noah are trying to prevent the ESA from being changed, and there is no precedent for finding an Establishment Clause violation in a refusal to enact a law. It is conceivable, though, that Noah could be appropriated for affirmative ends—to support legislation providing greater funding for the ESA, or to amend the ESA to give greater protection to endangered species. The Establishment Clause issue raised in such instances would depend upon the role that the story of Noah played in the legislative process, though I conclude that any imaginable endangered species law based on Noah's example would be constitutional.

Consider four possible scenarios: (1) some members of Congress cited the story of Noah as the justification for the law, but most members of Congress voted for the law because of the other utilitarian and moral arguments for preserving biodiversity; (2) the law was actually motivated by the story of Noah, but it was publicly defended by utilitarian arguments for the preservation of biodiversity; (3) the law was expressly based on a predominantly moral use of the story of Noah; and (4) the law was expressly based on a predominantly religious use of the story of Noah. The law resulting from the first scenario survives under any theory of the Establishment Clause. Such a law is not based on a religious purpose, let alone a dominant one, because the majority of those voting for it did so for reasons wholly unrelated to religious beliefs. This scenario best describes the current use of the story of Noah. While Secretary Babbitt and others cite the story of Noah as a reason for protecting endangered species, other defenders of the ESA rely upon a host of utilitarian and moral arguments to reach the same conclusion. To date, the secular environmentalists defending the ESA have far outnumbered those supporting endangered species legislation because of Noah's example or other religious obligations. Nor does any proposed legislation to expand protections for endangered species cite adherence to the story of Noah as a purpose of the law.

(suggesting that an Endangered Species Act enacted by a state in which "[v]irtually all of the legislators are observant Christians, and virtually all of the legislative arguments for the Act invoke religious authority" would violate the Establishment Clause; see also Conkle, supra note 252, at 18 (contending that an endangered species law that "depends upon a religious belief that is inerrantly held" violates the Establishment Clause, while a similar law based upon a non-inerrant religious belief is constitutional).
Likewise, the law resulting from the second scenario would satisfy the Establishment Clause according to both the Supreme Court and Professor Greene. The existence of a secular justification for a law is sufficient under current Establishment Clause doctrine, regardless of the religious motivations of the supporters of the law. Greene's objection to the use of religious beliefs to support a law explicitly encourages legislators to transform their religious beliefs into secular arguments. Many of the religious groups defending endangered species legislation have offered the same kinds of utilitarian arguments as secular environmentalists, indicating that the use of the story of Noah would withstand an Establishment Clause challenge even if the imitators of Noah constituted a majority of the Congress.

Nor does the third scenario present a violation of the Establishment Clause. The First Amendment prohibits the establishment of religion, not morality. The Court has never held that a law based on nonreligious moral arguments violates the Establishment Clause. Moreover, the story of Noah can be read to provide a moral argument instead of an argument based upon a religious command. Secretary Babbitt and religious leaders invoking the example of Noah have emphasized that the story appeals to people of all (or no) religious faiths. Thus, an en-

254. See supra notes 250-251.
255. See Greene, The Political Balance of the Religion Clauses, supra note 252, at 1621 (finding no Establishment Clause problem "if the religious believers are willing to translate their religious source of value into secular terms, because then the nonbeliever perceives that she can participate in the debate").
256. See, e.g., Pope John Paul II, The Ecological Crisis: A Common Responsibility, in GOTTLIEB, supra note 176, at 230, 235 (emphasizing the aesthetic value of creation); Stone, supra note 181, at 9A (Baptist pastor agreeing that "[t]here are economic, scientific, and medical reasons" for opposing proposed bills that would narrow endangered species protections); Campolo & Sider, supra note 179 (observing that "the long-term monetary costs of losing endangered species and their habitats may be enormous").
257. Note, however, that reliance upon moral arguments can pose other constitutional problems. See infra text accompanying notes 266-277.
258. See 1997 Interior Appropriations Hearings, supra note 23, at 1074 (testimony of Secretary Babbitt) (appealing to "American citizens from every walk of life and every conceivable religious persuasion" to "make this connection between their personal beliefs and values and the importance of protecting creation"); Rolston, supra note 179, at 139 ("The Noah story is quaint and archaic, despite its profound insights. It is parable more than history."); Charles Honey, Earning Our Spot on the Ark: Environmentalists, Religious Ideals Can Fit Together, Activist Prove, GRAND RAPIDS PRESS, Jan. 11, 1997, at B1 (quoting Christian environmentalist Calvin DeWitt as saying that "[a]
dangered species statute could survive even if most members of Congress acted in reliance upon the story of Noah.

The law described in the fourth scenario would probably survive, too, though it presents the hardest case. Cases like Edwards v. Aguillard and scholarly theories like Professor Greene's would strike down a law enacted for a dominant religious purpose as a violation of the Establishment Clause. The Court and Greene part ways, though, on the significance of a law's alternative, secular purposes. The presence of secular purposes alongside religious ones is irrelevant to Greene if the religious purposes predominate; the presence of secular purposes normally saves a law under the Court's test.

There are, of course, many nonreligious reasons for protecting endangered species. While there may not be an obvious utilitarian reason for protecting a particular endangered species, there will always be a nonreligious moral reason for protecting an endangered species. Moreover, while one can imagine members of a legislature voting for an endangered species statute because of religious motivation, the purpose of an endangered species statute is not inherently religious. Such a statute, therefore, is different from the statutes found unconstitutional because the very aim of those statutes struck the Court as limited to religious ends. Accordingly, while Greene may invalidate a law like that described in the fourth scenario, the Court would probably uphold it, and the law would not

person doesn't even have to believe there was a Noah to believe there is a principle).
raise an issue at all for those judges and scholars who contend that the religious purpose of a statute is irrelevant under the Establishment Clause. In short, the only plausible Establishment Clause objection to the story of Noah presupposes that a majority of Congress feels a religious obligation to support endangered species legislation and that the Court will strike down an environmental statute regardless of the absence of any religious effects. That seems pretty unlikely.

But the Establishment Clause does not exhaust the potential constitutional obstacles to reliance upon the story of Noah. The free exercise clause may override the ESA for individuals whose religious beliefs demand the taking of a particular endangered species. A different sort of constitutional argument confronts the story of Noah if it is viewed as creating a moral obligation instead of a religious one. Other laws based on contested moral arguments have not fared well recently. Remember, too, that the government possesses limited ability

264. See Edwards, 482 U.S. at 614-15 (Scalia, J., dissenting); Wallace v. Jaffree, 472 U.S. 38, 108-09 (1985) (Rehnquist, J., dissenting); Michael Stokes Paulsen, Lemon Is Dead, 43 CASE W. L. REV. 795, 802-04 (1993); see also Michael W. McConnell, Religious Freedom at a Crossroads, 59 U. CHI. L. REV. 115, 144 (1992) ("Left undefined, the purpose prong is an invitation to mischief—a not-so-subtle suggestion that those whose understandings of justice are derived from religious sources are second-class citizens, forbidden to work for their principles in the public sphere," but rejecting the complete abandonment of the purpose prong).


to determine which living organisms are worthy of legal protection.\textsuperscript{267}

Several legal scholars have labored to distinguish laws protecting endangered species from other laws based on moral arguments, especially laws concerning abortion or homosexuality. Ronald Dworkin has argued that endangered species legislation can be distinguished from abortion legislation.\textsuperscript{268} He agrees that the case for protecting endangered species must rest on moral arguments instead of utilitarian arguments—indeed, he accepts the government's ability to legislate to protect intrinsic values.\textsuperscript{269} Abortion is different, Dworkin contends, for two reasons. First, the effect of governmental coercion on women who desire an abortion is far greater than the effect of governmental coercion on those affected by the ESA.\textsuperscript{270} Second, our beliefs about human life are far more fundamental to our own selves than our beliefs about endangered species.\textsuperscript{271} The first point depends upon the second. The reason why the experience of carrying a child to term is unlike any other activity

\textsuperscript{267. See }Akron v. Akron Center for Reproductive Health, Inc., 462 U.S. 416, 444 (1990) (concluding that "a State may not adopt one theory of when life begins" to justify its regulation of abortions); Webster v. Reproductive Health Servs., 492 U.S. 490, 504-06 (1989) (declining to decide the constitutionality of a state statutory finding that "the life of each human being begins at conception"); \textit{id.} at 556-57 (Stevens, J., dissenting in part and concurring in part) (indicating that such a finding violates the Establishment Clause because it lacks any secular purpose); Roe v. Wade, 410 U.S. 113, 159 (1973) (invalidating state abortion law because the state cannot choose among contested views of when life begins).

\textsuperscript{268. See }DWORKIN, \textit{supra} note 174, at 75-81, 149-59.

\textsuperscript{269. See }\textit{id.} at 75-81, 149.

\textsuperscript{270. See }\textit{id.} at 154. Dworkin adds that endangered species legislation "might well be unconstitutional" if it, too, could "destroy a woman's life." \textit{Id.}


\textsuperscript{271. See }DWORKIN, \textit{supra} note 174, at 154-55 ("[O]ur convictions about how and why human life has intrinsic importance, from which we draw our views about abortion, are much more fundamental to our overall moral personalities than our convictions about culture or endangered species, even though these too concern intrinsic values."); \textit{id.} at 155 ("Very few people's opinions about conserving the artifacts of a culture or saving endangered species are as foundational to their moral personality, as interwoven with the structural choices of their lives [as our beliefs about human life]."); \textit{id.} at 158 (asserting that procreative decisions are different from other political decisions that seriously affect certain individuals because "the moral issues on which they hinge are... touching the ultimate purpose and value of human life itself").
that a woman will ever encounter is because of the unique value that most of our society places on human life. We view the pregnant woman’s experience in a different light than a pregnant animal’s experience precisely because we care more about people than animals. But this superior position of human life compared to other life is what some moral theories for protecting endangered species protest. If all forms of life are equally valuable, then why should human experience matter more than the experience of animals? Dworkin’s argument presupposes the very moral distinction that some environmentalists find so distasteful.

Once the primacy of human life is accepted, Dworkin is right that the coercion involved in abortion legislation is greater than the coercion in endangered species legislation. But the interest at stake is also greater. The high value on human life that causes Dworkin to treat the abortion decision as unique is also the reason why many want to protect the growing human life. Nor can it be said that the coercion worked by the ESA is trivial. The ESA can dictate where and how one lives, works, and worships. Although not at all the same as bearing a child, it requires a persuasive governmental justification nonetheless.

Similarly, Kent Greenawalt has acknowledged the potential tension between laws regulating endangered species and laws regulating homosexuality. On the one hand, he argues that “prohibiting wrongs per se is barred by premises of liberal democracy,” and therefore, laws restricting homosexuality (or other consensual sexual acts) are impermissible. On the other hand, Greenawalt insists that “protecting the environment for its own sake is consistent with the premises of liberal democracy.” If forced to choose between the positions, Greenawalt would side with his first assertion against laws prohibiting wrongs per se, but that would doom any effort to rest

272. See supra notes 219-220.
273. GREENAWALT, supra note 252, at 114; see also id. at 87-95 (arguing that it is inappropriate to legislate against consensual sexual activity based on a belief that such activity is sinful).
274. Id. at 114.
275. See id. (explaining that “the view that society could appropriately prohibit any disturbance of the metaphysical order would be so sweeping in its implications’’); see also Garvey, supra note 252, at 1292 n.12 (noting that if values can be based on concern about the life cycle of animals, than values regulating homosexuality can be based on concern about the life cycle of the human species).
the ESA on moral arguments once the utilitarian arguments are exhausted.

This debate travels into theories of liberal democracy, constitutionalism, and ultimate views of the good that transcend the arguments about specifically religious arguments. My sole point here is to identify the parallels between moral arguments for endangered species legislation and similar moral arguments for a variety of other laws. I would sustain the constitutionality of endangered species legislation based on the story of Noah for the same reasons why the Court's precedents questioning reliance on moral arguments strike me as problematic. But if I am wrong about those precedents, then endangered species laws are jeopardized as well.

Admittedly, preserving biodiversity appeals to a different constituency than the laws whose moral justifications were inadequate to save them from constitutional attack. Also, few decisions have engendered more passionate debate than Roe v. Wade and Romer v. Evans. To extend such rulings to a law designed for such a popular cause as wildlife preservation is highly unlikely, whether or not the analogy is appropriate. The presence of utilitarian justifications for preserving biodiversity as a whole further diminishes the likelihood that the absence of such justifications for some species and the reliance on the story of Noah (or other religious or moral arguments) will serve to invalidate the statute. That said, the constitutional ramifications of moral and religious arguments for environmental statutes deserve more attention, but I would not expect such arguments to carry the day.

V. PLAYING GOD

So the dilemma remains. We cannot protect every species, we do not protect every species, but the story of Noah (like any of a number of other moral or religious arguments) says that we have to. Suppose, however, that Noah was forced to choose between species. What would he have done? Or perhaps more


277. Cf. Philip P. Frickey, Adjudication and Its Discontents: Coherence and Conciliation in Federal Indian Law, 110 HARV. L. REV. 1754, 1757 (1997) (asserting that a formal analysis of existing Indian law precedents can "result in deceiving conclusions" unless it is accompanied by "a heavy dose of historical perspective and legal realism").
importantly, how should those who seek to imitate Noah today decide which species should live and which should disappear forever?

The answer must remain uncertain, simply because Noah did not give us an example of how to choose among endangered species. That omission itself should give us pause. The resource constraints that appear so daunting to us pale in comparison to the task confronted by Noah. Perhaps, then, fidelity to Noah's example requires us to work to save all species trusting that God will enable us, like Noah, to accomplish a seemingly impossible feat. But that approach does not help the FWS, the Nature Conservancy or other groups that must decide how to allocate a fixed budget among many endangered species. Nor does that approach account for the human needs that cry out for additional money and attention—and that sometimes conflict with the needs of endangered species. For these reasons, even those defenders of the ESA who consider the scriptures authoritative recognize the need to balance biodiversity and other concerns. Indeed, some Christian writers have attempted to develop priorities for species preservation in a world where not all species can be saved. Thus, while choices may be necessary, any decision to choose among species should be reached with great reluctance, recognizing that the

278. See supra text accompanying notes 72-79.
279. See Genesis 6:18 (quoting God telling Noah that "you shall go into the ark—you, your sons, your wife, and your sons's wives with you"); see also Genesis 6:10 (reporting that Noah had three sons); Genesis 10:1 (stating that Noah's sons had children after the flood). The total number of eight people on the ark assumes that each of Noah's sons had one wife.
280. See H.R. 2275 Hearing, supra note 8, at 87 (testimony of Rev. Paarlberg) (acknowledging that "there are difficult choices that need to be made on occasion," and that "we need to do the hard work of working out those balances"); DEVOS, supra note 208, at 48-49 (asking—but not answering—questions about how to balance biodiversity and human needs in specific situations); Rolston, supra note 179, at 140 (arguing that "God wills for species to continue, subject to natural processes, consonant with human development" (emphasis added)); News: Eco-Evangelical Movement Works to Preserve Environment, supra note 16 (EEN member Ron Sider acknowledging that "we need to keep a proper balance" between species and human needs); The NewsHour with Jim Lehrer, supra note 179 (Multnomah Bible College spokesman indicating that "I can conceive of some situations where [the ESA] would need to be suspended in favor of helping a fellow man or woman or child, some other person who has intrinsically greater value to God than does some other created being").
281. See BOUMA-PREDIGER & VROBLESKY, supra note 181, at 64-66, 68; NASH, supra note 181, at 181-82.
failure to preserve a species is also a failure to imitate Noah, whose own efforts were rewarded by God.\textsuperscript{282}

A. THE LESSONS OF NOAH FOR HOW TO CHOOSE AMONG SPECIES

My guess is that Noah would have tried to save as many different kinds of species as possible. Noah protected all species, regardless of their size or appearance or apparent value, because that is what God told him to do. Imitating Noah would seem to require us to come as close to that result as we can. Moreover, to the extent that we are unable to protect every species, Noah's example suggests that the diversity of species has value in itself.\textsuperscript{283} \textit{Genesis} teaches that God created many, many different species, and when Noah heeded God's command to save them all, the importance of the diversity of life was re-emphasized.

That goal suggests certain priorities for choosing among endangered species. First, the more species the better. Efforts to save an endangered species that will also benefit other endangered species would rank highest. Saving multiple species at one time is easily accomplished by focusing on the habitats of many different species live, instead of the individual species themselves. Many writers recommend that efforts to protect multiple species by protecting broader ecosystems merit high priority.\textsuperscript{284} The current FWS priority scheme, by contrast, does

\textsuperscript{282} See \textit{Genesis} 9:1-17 (describing the blessing that God bestowed upon Noah once the flood subsided).

\textsuperscript{283} See supra note 212 (citing sources describing the value that God places on the diversity of species within creation).

\textsuperscript{284} See 1998 Interior Appropriations Hearing, supra note 61, (testimony of Mary Beth Beetham, Legislative Associate, Defenders of Wildlife) (indicating that the Defenders of Wildlife would give greatest priority to keystone species whose survival is crucial to the survival of other species and the habitat itself); BOUMA-PREDIGER \& VROBLESKY, supra note 181, at 68 (Christian writers asserting that "priority should be given to listing a species when that listing would also benefit other species within that ecosystem"); Mark E. Eiswerth \& J. Christopher Haney, Allocating Conservation Expenditures: Accounting for Inter-Species Genetic Distinctiveness, 5 ECOLOGICAL ECON. 235, 238-41 (1992) (analyzing a proposal to allocate funding for species preservation depending upon the number of species who live in a certain area); Houck, supra note 59, at 870 ("One of the more rational conclusions to emerge from America's experience with the Endangered Species Act is that we need to manage ecosystems and protect biological diversity on a scale larger than individual species on the brink of doom."); Malcolm L. Hunter, Jr., Coping with Ignorance: The Coarse-Filter Strategy for Maintaining Biodiversity, in KOHM, supra note 51, at 266-79 (explaining the advantages and disad-
not expressly prefer species whose preservation will also save other species. The agency has demonstrated a de facto preference for HCPs that protect the most species, but that policy has not been codified in the FWS's regulations or in the ESA itself. The agency recently proposed giving higher priority to proposed listings covering multiple species—essentially creating a preference for a species whose listing happened to be proposed in the same rulemaking as other species—but that rule is not yet in effect.

The desire to save as many species as possible also supports consideration of more controversial factors such as the cost of preservation and the likelihood of success. Consider three ecosystems that contain 300 endangered species evenly distributed so that 100 species live in each ecosystem. If it would cost $50 million to preserve ecosystem A, $25 million to preserve ecosystem B, and $25 million to preserve ecosystem C—and if only $50 million is available for species preservation—then the preferable course would be to save ecosystems B and C and the 200 species that they contain. Similarly, if two songbirds are endangered but one is far more likely to recover, then the preservation of the songbird that is likely to recover should take priority. Some writers have endorsed the consideration of the cost and likelihood of success in establishing priorities among species—like the triage system employed by wartime hospitals. Such cost/benefit pro-

vantages of giving priority to the preservation of areas that contain many different kinds of species); Noss, supra note 169, at 233-35 (recommending that priority be given to saving keystone species and "umbrella species" whose large area requirements assure that other species will be protected, too); Laura Spitzberg, The Reauthorization of the Endangered Species Act, 13 TEMP. ENVTL. L. & TECH. J. 193, 214 (1994) (according second priority to top predators because protecting them will aid other species); Wilcove, supra note 232, at 10 (advocating priority for indicator species in order to "enhance the ecosystems upon which endangered species and declining species depend").

See supra text accompanying notes 116-121 (discussing the FWS species priority guidelines).

See Thompson, supra note 71, at 316-19, 380 (describing how both individual permit applications and recent HCPs favor multiple species).

See FWS 1998 Proposed Priority Guidelines, supra note 117, at 10,933 (indicating that "[p]roposed listings that cover multiple species facing high-magnitude threats have priority over single-species proposed rules unless the Service has reason to believe that the single-species proposal should be processed first to avoid possible extinction").

See MYERS, supra note 30, at 43-44 (defending a triage system for deciding which endangered species can be saved); NORTON, supra note 80, at 255 ("Efforts should be expended on species that are in trouble but salvageable and on species that can be saved inexpensively."); Doremus, supra note
jections fit with the goal of saving as many species as possible, but the calculations make me squeamish in this context, and they certainly find no precedent in Noah. Nor does the FWS adhere to such an approach. The agency does give some priority to species that are most likely to recover, but that priority cannot override the mandate to try to prevent any species from going extinct, however unlikely it is to recover.289

Note that the emphasis here is on saving as many species as possible, not on saving ecosystems themselves. Of course, saving an entire ecosystem may well save a significant number of endangered species, but the two goals could diverge. A whole ecosystem may lack any endangered species; a small fragment of an ecosystem could contain many endangered species. In such instances it makes a difference whether ecosystem protection is the means to the end of saving endangered species, or vice versa. A number of writers would give priority to saving species in order to achieve their real goal of saving ecosystems.290 Such concern for the larger environment finds support

80, at 330 ("Scarce resources should not be expended on species not likely to be saved by extraordinary measures."); Drozdowski, supra note 112, at 594-600 (proposing a modified cost/benefit analysis and triage system); William Ramsay, Priorities in Species Preservation, 5 ENVTL. AFF. 595, 618 (1976) (recommending a comparison of the priority of a species with the cost of saving it); Randall, supra note 123, at 102-03 (advocating a priority system relying on a cost/benefit analysis, albeit with particular attention to fully stating the benefits of preserving a species). But see David H. Bennett, Triage as a Species Preservation Strategy, 8 ENVTL. ETHICS 47, 58 (1986) (attacking triage systems as overemphasizing human interests); Houck, supra note 37, at 701 (criticizing proposed legislation for requiring "a triage that no scientist with a smidgeon of integrity would consider attempting").

289. Compare FWS 1983 Priority Guidelines, supra note 90, at 43,101 (stating that "species and projects that offer the greatest potential for success" will be given priority in listing decisions), and id. at 43,104 (repeating that “[p]riority for preparing and implementing recovery plans would go to species with the greatest potential for success”), with id. at 43,102 (indicating that "regardless of this recovery potential, the Service will strive to undertake for every high threat species those minimum survival efforts which will at least stabilize its status and prevent its extinction").

290. See RICHARD TOBIN, THE EXPENDABLE FUTURE: U.S. POLITICS AND THE PROTECTION OF BIOLOGICAL DIVERSITY 77 (1990) (describing a ranking system based on the proposition that "habitats rather than individual species have biological value and thus deserve protection"); Doremus, supra note 80, at 380 (proposing that keystone species and indicator species should be given priority); Randall, supra note 123, at 103 (suggesting that species "valued for habitat and ecosystem services" and species "which serve key roles in valued ecosystems" should be given priority); Donald H. Regan, Duties of Preservation, in NORTON, supra note 123, at 195, 212 (stating that species that "play special roles in complex and unusual ecosystems" deserve special consideration); Sagoff, supra note 80, at 48-49 (discussing the protection of species in
in much scriptural teaching. *Genesis* records that God described all of creation as good, not just particular animals and plants. In contrast, the story of Noah omits any such ecosystem focus. In fact, Noah saved every species even as all of the earth’s existing ecosystems disappeared around him. Imitating Noah, then, means putting species before ecosystems in the unlikely event such a choice becomes necessary. This is one instance, though, where following Noah’s example may not necessarily lead to the same actions as fidelity to the balance of the biblical record.

Priority number two emphasizes diversity among species. Such diversity can be achieved by favoring preservation efforts that benefit species in different biological classifications. As Donald Regan has written:

> [O]ther things being equal, a species is made more valuable by belonging to a sparsely populated genus or family or order. Taxonomically isolated species are likely to represent unusual modes of adaptation. Their existence increases the diversity of nature. That means both that there is more to know about what exists, and that a complete knowledge of what exists entails a greater knowledge of nature’s possibilities.

order to protect the value of the ecosystem); Edwin M. Smith, *The Endangered Species Act and Biological Conservation*, 57 S. CAL. L. REV. 361, 403 (1984) (advocating the protection of species “based on their identifiable functional values within an ecosystem”); Spitzberg, *supra* note 284, at 213-14 (favoring priority for keystone species and indicator species in order to protect the overall ecosystem).

291. See *supra* note 201.

292. Regan, *supra* note 290, at 212; see also NORTON, *supra* note 80, at 246-47 (recommending that priority be given to species with greater taxonomic distinctiveness); TOBIN, *supra* note 290, at 73-74 (endorsing a priority scheme that maximizes the importance of genetic diversity because such diversity is crucial to the development of ecosystems); Eiswerth & Haney, *supra* note 284, at 241-42 (analyzing how the genetic distinctiveness of a species can be used to establish priorities among species); Goulder & Kennedy, *supra* note 123, at 37 (suggesting that scientists are especially likely to give higher value to genetically unique species); Randall, *supra* note 123, at 103-04 (advocating lesser priority for species and subspecies that have many close relatives); Sagoff, *supra* note 80, at 56-62 (discussing the protection of species that contribute most to the diversity of nature); Smith, *supra* note 290, at 404 (proposing third priority to “species that are comparatively rare” in order to “promote the general goal of preserving biological diversity”); Spitzberg, *supra* note 284, at 214 (giving some priority to “a species that is the only one in its family”). *But see* ROLSTON, *supra* note 174, at 136-37 (questioning priorities based on diversity because all categories besides species are artificial, the speciation process is dynamic, and a species can only survive within a larger context); Memorandum from Bill Snape & Mike Senator to Interested Parties Re: Kempthorne/Chafee Draft ESA Bill (visited Mar. 4, 1998) <http://www.defenders.org/esanews.html> (stating the objections of the Defenders of
The FWS agrees that genetically distinct species should be favored.²⁹³ Likewise, the Forest Service must manage national forests to provide for “diversity of plant and animal communities.”²⁹⁴ So while a Senate committee once commented that “[b]iologically, it makes sense to treat all taxonomic groups equally, or even to place some special emphasis on protecting plants and invertebrates since they form the bases of ecosystems and food chains upon which all other life depends,”²⁹⁵ the FWS has emphasized that genetically unique species possess special value independent of their impact on an ecosystem.²⁹⁶ Nonetheless, the FWS gives biological diversity “the lower order of priority setting” and expects to turn to this criteria to choose among species only rarely.²⁹⁷

In practice, the preference for diversity means that if the FWS has a fixed budget to spend on implementing the recovery plans for all endangered species, it should concentrate that money on the whooping crane or the manatee instead of the snail darter (which is one of 150 different species of darters)²⁹⁸ or the northern spotted owl (which is one of three subspecies of the spotted owl species).²⁹⁹ Or suppose that an environmental agency has $2 million dollars to spend on endangered species, and that it would $1 million dollars each to save the Indochinese tiger, the Siamese tiger, and the panda, each of which are highly endangered. While one hopes that it would never come

Wildlife to a proposal to give higher priority to recovery plans benefiting taxonomically distinct species as contrary to the recommendations of the National Research Council; Smith, supra note 290, at 404 n.243 (outlining the controversy over the ecological role of diversity).

²⁹³. See FWS 1983 Priority Guidelines, supra note 90, at 43,104 (stating that “the loss of the most genetically distinct taxa is of greater significance than the loss of less genetically distinct taxa”); id. at 43,099 (finding genetically distinct species “deserving of continuing scientific and educational attention”).


²⁹⁵. S. REP. NO. 97-418, at 14 (1982). The committee report was responding to a since-abandoned FWS preference for higher-level vertebrates.

²⁹⁶. See FWS 1983 Priority Guidelines, supra note 90, at 43,099. For example, “[i]t appears that the California condor, a monotypic genus, may have less ecosystem impact that [sic] any of several butterfly species,” but the agency would favor the condor anyway. Id.

²⁹⁷. Id.

²⁹⁸. See MANN & PLUMMER, supra note 11, at 165.

²⁹⁹. See Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Northern Spotted Owl, 55 Fed. Reg. 26,114 (1990) (listing the three subspecies of spotted owls as the northern, the California, and the Mexican).
to this, the diversity criteria says that priority should go to the pandas and one of the tigers, rather than saving both of the tigers and not the panda.

The third and weakest priority should attach to those species that provide the greatest utilitarian benefits to us. Noah declined to follow this course, though his preference for clean species instead of unclean species offers slight support for consideration of utilitarian values. The more controversial passages in Genesis that encourage people to use creation to satisfy their own needs provide somewhat greater support for a utilitarian priority. Most of the writers who have considered choices among species find utilitarian concerns unnecessary (because people will act to protect species that are valuable to them even when there is no legal obligation to do so or misguided (because they disregard the independent value of a species). While the claim that it is unnecessary to consider utilitarian concerns is often true, it fails to account for species that provide indirect benefits such as water purification and climate control that are not captured by the economic marketplace. The claim that it is misguided to consider utilitarian concerns in establishing priorities is disingenuous for anyone who relies on the utilitarian arguments for the preservation of endangered species. That claim is legitimate, though, for those who espouse moral or religious justifications for preserving species that attribute independent value to biodiversity. Whether any weight should be attached to utilitarian benefits when establishing priorities among endangered species depends upon the comparative moral position of people and animals. Noah's example suggests that the utilitarian benefits of a species should be given priority only once the numerical and

300. See supra notes 195-196.
301. See Sagoff, supra note 80, at 51 (observing that "endangered species are not, in general, economically the most valuable ones").
302. See Tobin, supra note 290, at 78-82 (identifying several concerns about determining priority among species based on their utilitarian value); Doremus, supra note 80, at 329 n.294 ("Those species which provide direct economic benefits to man are in fact the least appropriate for protection at government expense."). But see Cathryn Campbell, Federal Protection of Endangered Species: A Policy of Overkill?, 3 UCLA J. ENVTL. LAW & POL'Y 247, 272 (1983) (insisting that "[t]he easiest priority to determine is that of a species from which man derives a direct commercial benefit"); Ramsay, supra note 288, at 610 (proposing that priority be given to species with economic, cultural and esthetic value).
303. See supra text accompanying notes 147-152 (listing the ecological benefits provided by many species).
diversity priorities have been satisfied, and those benefits should be considered with the awareness that the same scriptures that provide some support for considering utilitarian concerns also emphasize that God considers all creatures to be valuable regardless of their usefulness to us.\textsuperscript{304}

B. \textsc{Alternate Proposals on How to Choose Among Species}

That leaves several other ways that writers have proposed for choosing among species. One possibility is to favor the species that are the most endangered.\textsuperscript{305} The FWS proceeds on such a “worst-first basis” when listing species.\textsuperscript{306} The degree of endangerment certainly highlights the need to decide quickly whether or not to try to save a species. The triage model, however, suggests that some species may be so endangered that it is not worth investing precious resources to try to save them instead of another species that is more likely to recover. More importantly, unless we believe that we can save every species, a priority for the most endangered species will simply result in the extinction of other, not quite as endangered species. The resources used to preserve the most endangered species will be unavailable to preserve the next most endangered species. In other words, focusing on the most endangered species makes sense only if we are able to save each species as it rises to the status of most endangered. If that is impossible, and if choosing among species become necessary, then giving priority to the species that are most endangered presupposes that such species are the most valuable. There is no reason to believe that the

\textsuperscript{304} See supra note 201.

\textsuperscript{305} See BOUMA-PREDIGER \& VROBLESKY, supra note 181, at 66 (proposing that priority be given to “species and habitats which are most sensitive to degradation and which are rare and/or fragile”); TOBIN, supra note 290, at 76 (noting a possible priority for species that are closest to extinction); Doremus, supra note 80, at 330-31 (advocating a modest priority for “[s]pecies currently under a high degree of threat,” though balancing that threat against the cost and likelihood of recovery); Noss, supra note 169, at 235-36 (favoring priority to the most vulnerable species, though not to species that are simply rare); Sagoff, supra note 80, at 53-54 (discussing a triage system that would give priority to the species that are most endangered); Smith, supra note 290, at 402 (recommending first priority be given to “species whose populations have fallen to levels that pose an imminent threat to continued breeding success, genetic variability, and adaptive fitness”).

\textsuperscript{306} FWS 1983 Priority Guidelines, supra note 90, at 43,099; see also FWS 1997 Priority Guidance supra note 53, at 64,475 (noting that highest priority will be given to “any species determined to face a significant risk to its well being”).
species that happens to be the most endangered is by definition
the most valuable. Again, a triage system would consider both
the degree of endangerment and the likelihood of recovery,
with the goal of saving as many species as possible. Considering
the degree of endangerment but not the likelihood of re-
covery will result in a lesser number and relatively random
group of species that are saved.

Another possibility is to favor species that are the most
advanced and complex in their development. Such an ap-
proach is consistent with from a variety of moral theories, but
it lacks support from the story of Noah. Nor do the other
teachings of Genesis point in this direction. Christian writer
James Nash has defended a priority system that favors the
most advanced species as consistent with the biblical place-
ment of people in a higher position than the rest of creation.
But even for those who agree that people occupy the highest
position on the earth, it does not follow that all other species
can be ranked along a continuum, with primates far closer to
people than ambersnails. The voice of the scriptures on the
unique status of people is matched by the silence of the scrip-
tures on the relative value of all other species.

Or priority could simply be given to species that are most
popular. This criteria probably best describes the actual prac-
tice of species preservation efforts today. Indeed, Mann and
Plummer have argued that “if society prefers charismatic
megafauna, priority should be given to them without apol-
logy.” But the idea that popularity equals priority seems out-

307. See, e.g., Sagoff, supra note 80, at 53-54; see also supra note 292
(citing other sources).

308. See NASH, supra note 181, at 181-82 (Christian writer arguing that
“among species, the moral significance of rights is proportionate to the
value-experiencing and value-creating capacities of their members”); Regan,
supra note 290, at 211-12 (“More complex life forms are more valuable than
less complex ones, other things being equal. A ferret is more valuable than a
centipede, which is more valuable than an amoeba.”); Sagoff, supra note 80, at
57 (indicating that “priority could be given to species ‘higher’ in the scale of
evolution”). But see TOBIN, supra note 290, at 75-76 (stating the case for pre-
ferring species that are least developed).

309. See NASH, supra note 181, at 181-82.

310. See supra text accompanying notes 103-112.

311. Mann & Plummer, supra note 40, at 70. They added that “if biolo-
gists think otherwise, it should fall to them to change public preferences.” Id.
Mann and Plummer later proposed that a biodiversity advisory board could
decide among species by considering the economic value of a species, our soci-
eity’s reverence for a species, the contribution of a species to the ecosystem or
whatever other factors are appropriate. See MANN & PLUMMER, supra note
of-step with any theory of the value of species. Children’s books portray the ark full of giraffes and hippos and lions, with beetles and slugs and kangaroo rats nowhere to be seen, but I can find no other indication that Noah would have conducted a public opinion poll to determine which species to save.

There are, however, two ways in which the popularity of a species could become relevant. First, popularity may serve as a proxy for a utilitarian value, especially aesthetic value. Large, charismatic, colorful species are especially likely to capture the public’s eye. Or a species may be popular for cultural, not aesthetic reasons. The bald eagle and the jumping frog immortalized by Mark Twain are examples of species whose popularity results from the special place they occupy in the public memory. To the extent that utilitarian values such as aesthetics or cultural importance deserve any priority, the popularity of a species may signal aesthetic worth. Second, efforts to protect popular species may promote support for efforts to protect less visible species. The appeal of, and resources devoted to, the preservation of endangered species as a whole may depend upon the public’s perception of whether a grizzly bear or a snail darter is likely to benefit. Alas, it remains equally possible that the protection of such popular species will exhaust the public’s willingness to preserve biodiversity.

Noah, therefore, may have favored the preservation of the most species of the most different kinds—with their value to him considered almost as an afterthought—if he was forced to bring a limited number of species on board. Or he may have made his choices in a different manner; we cannot know with certainty today. But the very process of choosing among species...
should provide yet another argument for avoiding such choices in the first place. When we decide that we are willing to allow a species of tiger to become extinct in order to save the panda, or to preside over the demise of a species of whale so that we can save the manatee, we are in uncomfortable and uncharted territory. We are no longer playing Noah; we are playing God.

Perhaps the only thing worse than openly determining priorities among endangered species is to apply unstated priorities to the same effect. We already choose among endangered species, but we do not like to admit it. Those like Mann and Plummer who call for an explicit statement of priorities are often motivated by the reality that species are becoming extinct despite our efforts. The existing, de facto priorities favor the species that are most popular with the public, even though more species and a broader range of species might be saved under a more direct and focused scheme of priorities. A formal list of priorities would also achieve the honesty that Calabresi and Bobbitt find so important when faced with an excruciating choice like that described here. "Averting the eyes enables us to save some lives even when we will not save

314. See MANN & PLUMMER, supra note 11, at 215; see also Sierra Club v. Babbitt, 948 F. Supp. 56, 57 (E.D. Cal. 1996) ("Sporadic and disorganized judicial interference with [the FWS's] priorities would result in a game of musical chairs plainly disruptive to a thoughtful and reasoned allocation of [the FWS's] limited resources."); NORTON, supra note 80, at 257 ("If formal criteria cannot decide all priority issues, it seems that environmental managers are doomed to making important decisions on whim and personal bias."); TOBIN, supra note 290, at 73 (concluding that the absence of priorities "randomly condemns helpless creatures to extinction regardless of their relative merits, potential contribution to humans' well-being, or contribution to ecological stability"); Doremus, supra note 80, at 332 (arguing for a ranking system in order to make choices among species "both more explicit and more public"); John Charles Kunich, The Fallacy of Deathbed Conservation Under the Endangered Species Act, 24 ENVTL. L. 501, 566 (1994) (criticizing the establishment of priorities through the happenstance of litigation); Plater, supra note 80, at 864 (stating that "implicit or explicit prioritizing and rationing are anathema yet may inevitably be necessary, though much thoughtful effort would have to be devoted to that end"); Ramsay, supra note 288, at 609 (suggesting that conservationist gains can be lost absent a priority scheme); Smith, supra note 290, at 405 (observing that the alternatives to a priority scheme are "the current inadequate efforts to preserve each and every threatened or endangered species, or to adopt unplanned, ad hoc preservation efforts which would grant priority without considered principles").

315. See CALABRESI & BOBBITT, supra note 230, at 26 (asserting the need for honesty when confronting "tragic choices" and concluding that "[h]onesty permits us to know what is to be accepted, and accepting, to reclaim our humanity and struggle against indignity").
all, but we could save more lives if we fully analyzed what we are doing. Noah did not blind himself to the task at hand, either.

CONCLUSION

The Supreme Court's decision in Tennessee Valley Authority v. Hill, holding that the ESA required the government to protect the snail darter instead of completing the Tellico Dam, often serves as a lightning rod for attitudes about endangered species. Noah's Choice uses the case for that purpose when it describes an exchange at oral argument in the Supreme Court:

"I have in my hand a darter, [Attorney General Griffin Bell] proclaimed, "a snail darter. . . . Bell handed the fish to the bench. The test tube made its way along the line of nine justices, each of whom solemnly peered at its contents before passing it to a neighbor. . . . The attorney general stood back, satisfied, as laughter filled the court. The laughter was halted by the quiet voice of Justice John Paul Stevens. "Mr. Attorney General," he said, "your exhibit makes me wonder. Does the Government take the position that some endangered species are entitled to more protection than others?" Bell's smile disappeared."

Then Bell answered "no." Then Bell answered "no."

That is the answer demanded by the language of the ESA, current scientific consensus, and the many advocates of the existing law. Yet the recent debate over the ESA has questioned that orthodoxy. If we cannot protect every species, and if we do not protect every species, then perhaps we need not try to protect every species. That argument may make sense from a utilitarian perspective, but it fails to account for the religious, moral and ethical arguments for protecting every species. The biblical story of Noah offers one such theory; undoubtedly other religious, moral, and ethical traditions support similar

316. Id.
318. MANN & PLUMMER, supra note 11, at 147.
319. Well, sort of. Noah's Choice paraphrases Bell as answering that "[n]o . . . the government was not taking the position that some species are better than others." Id. at 168. According to another source, however, Bell was never quite that direct. He first said he did not have to reach that point, and then tried to shift responsibility to the lower court's holding. Finally, when Justice Stevens asked whether the ESA "distinguish[es] as among various priorities in the different species," Bell conceded, "[i]t does not. It looks to the list. Once it gets on the list, it is an endangered species." See Donald S. Cohen, Judicial Predictability in United States Supreme Court Advocacy: An Analysis of the Oral Argument in Tennessee Valley Authority v. Hill, 2 U. PUGET SOUND L. REV. 89, 94 (1978) (quoting the transcript of oral argument).
theories. We do not know precisely how Noah accomplished his task, but *Genesis* does tell us that Noah saved all of the animals. If one wants to imitate Noah—either because of a sense of religious obligation or because of a moral duty like the Noah Principle—then we should try to save every species, too. Noah offers less guidance about how to choose among species if preserving them all proves to be impossible, but we can tease some clues from his story that can help us allocate our limited resources. The means that we should use to try to protect endangered species present exceedingly difficult questions in a society with limited resources and seemingly unlimited needs, but the original goal of the ESA—to protect every species—remains sound. We should keep trying to play Noah after all.