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Biophilia, The Endangered Species Act, and a New Endangered Species Paradigm

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NOTES

BIOPHILIA, THE ENDANGERED SPECIES ACT, AND A NEW ENDANGERED SPECIES PARADIGM

It is estimated that we share the planet with between ten and one hundred million other species.¹ Surprisingly, humans have given names to approximately 1.4 million species, a fraction of the total.² We have, however, brought about the extinction of an estimated 10% of the species that existed before humanity came on the scene, and it is predicted that another 20% will be lost in the next thirty years.³ One scholar has noted that "[t]he extinction event now taking place rivals the five great extinctions that have occurred in the earth's geologic history, only this time it is humans, not asteroids, that are the cause."⁴ Humanity has begun to recognize this catastrophe⁵ and, in some cases, has taken action.

1. See Edward O. Wilson, *Biophilia and the Conservation Ethic*, in *THE BIOPHILIA HYPOTHESIS* 31, 35 (Stephen R. Kellert & Edward O. Wilson eds., 1993).

2. See *id.*

3. See *id.* at 36.

4. Patrick Parenteau, *Rearranging the Deck Chairs: Endangered Species Act Reforms in an Era of Mass Extinction*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 227, 230-31 (1998). The five great extinctions are the Ordovician (440 million years ago), the Devonian (370 million years ago), the Permian (250 million years ago), the Triassic (210 million years ago), and the Cretaceous (65 million years ago). See Virginia Morell, *The Sixth Extinction*, NAT'L GEOGRAPHIC, Feb. 1999, at 48-49.

5. A recent study suggests that it can take the earth up to 10 million years to recover from large-scale extinctions. See Carol Kaesuk Yoon, *Study Jolts Views on Recovery from Extinctions*, N.Y. TIMES, Mar. 9, 2000, at A20.

An ominous implication of the new research, some scientists say, is that humans may already or will soon have destroyed enough species that it will require a full 10 million years for the planet to recover—20 times as long as humans have already existed and longer than many scientists predict humanity itself is likely to persist into the future.

Id.

The Endangered Species Act (ESA)⁶ is one immediate, and potentially powerful, response to the extinction of species in the United States.

Unfortunately, the recent failure of the judiciary to interpret the ESA more expansively has limited the Act's ability to preserve species.⁷ This failure is reflected in the courts' inability to properly account for humanity's intrinsic connection with nature when determining what constitutes "harm" under the ESA. If the courts continue the perpetuation of a myopic understanding of the interplay between human life and the environment, it is humanity that inevitably will be affected.

The inherent connection that humanity maintains with nature, christened "biophilia" by the Harvard biologist Edward Wilson,⁸ provides the impetus for an argument that courts should rethink the way in which they have interpreted the ESA. Put simply, the intrinsic affiliation with nature that exists within the human species calls for an expansive interpretation of the ESA. This expansion would result in a definition of harm that recognizes that species must be protected from the potential, albeit conceivably uncertain, harm that habitat destruction can effect. This Note argues that biophilia provides the foundation for a judicial expansion of the definition of "harm" under the ESA.

The first section of this Note contains an overview of biophilia. The doctrine of biophilia intricately demonstrates humanity's connection with the natural world; this connection is a key element of the ESA. The first section also contains an extensive discussion of the recognition afforded biophilia by other disciplines. This recognition is indisputable.⁹ The judiciary, by failing to incorporate

6. 16 U.S.C. §§ 1531-44 (1994 & Supp. IV 1998).

7. This failure is illustrated by the Supreme Court's recent move toward a softening of the prohibition against "balancing the value of protected species against the value of the economic activities their protection might displace." Federico Cheever, *Butterflies, Cave Spiders, Milk-Vetch, Bunchgrass, Sedges, Lilies, Checker-Mallows and Why the Prohibition Against Judicial Balancing of Harm Under the Endangered Species Act is a Good Idea*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 313, 313, 321 (1998) (citing *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 187-88 (1978)).

8. See EDWARD O. WILSON, *BIOPHILIA* 1 (1984).

9. See *infra* notes 25-51 and accompanying text.

this theory into the legal decision-making process, is an isolated outpost detached from the realities of the scientific community.

Section two provides a detailed discussion of relevant case law under the Act. The ESA provides that no one shall "harm" a species that has been listed as endangered or threatened.¹⁰ Much of this section focuses on what constitutes "harm" to a species as defined by the ESA, the Department of the Interior, and courts.¹¹ The Supreme Court's decision in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*¹² is perhaps the most important case in this area of law, and, consequently, this section contains an extensive discussion of *Sweet Home*. The *Sweet Home* court failed to recognize biophilia and, in so doing, permitted an overly narrow definition of "take" under the ESA. Had the Court recognized the intrinsic connection between humanity and nature, it would have concluded that "harm" to a species can occur in a myriad of ways far short of "significant habitat modification or degradation *that actually kills or injures wildlife*."¹³

Section two also considers standing under the ESA¹⁴ and concludes that the Supreme Court's decision in *Bennett v. Spear*¹⁵ failed to adequately recognize Congress's biophilic intent in passing the Act. Had the Court subscribed to this purpose, it would have recognized that affording standing to nonenvironmental interests is inherently incompatible with the ESA's goal of protecting endangered species. A better approach to endangered species legislation is illustrated through the adoption of the concept of aesthetic value, which has occurred in the standing context. This concept is kindred to a biophilic approach; the leap from a recognition of the aesthetic value that humanity places on the natural world is akin to the recognition of our inherent connection with living organisms.

Section three provides a synopsis of the history of the ESA, including an examination of the legislative history and underlying

10. See 16 U.S.C. § 1532(19) (1994).

11. See *infra* notes 56-100 and accompanying text.

12. 515 U.S. 687 (1995).

13. *Id.* at 708 (emphasis added).

14. See *infra* notes 101-18 and accompanying text.

15. 520 U.S. 154 (1997).

purpose of the Act. When enacting the ESA, Congress recognized humanity's connection with nature as a primary purpose for protecting species.¹⁶ While the theory of biophilia was not developed until well after the enactment of the ESA, the belief that humans have an intrinsic connection with the natural world was certainly an extensive part of the dialogue that occurred within Congress prior to passage of the Act.

Finally, section four provides an overview of the limits of biophilia and discusses the new endangered species paradigm that will invariably result from the adoption of biophilia. The very purpose of the ESA provides courts with the latitude they need to introduce biophilia into the legal world; yet, an unconstrained ESA is certainly not the end goal of the biophilia paradigm. Rather, the recognition of biophilia creates a definition of "harm" that includes potential future harm to species, and also incorporates anthropogenic harm into the decision-making process. This definition also precludes a balancing approach to endangered species protection, based largely on the central purpose of the ESA, and also precludes nonenvironmental interests from satisfying standing under the Act.

The ESA recognizes that species are vitally important, both for biocentric as well as anthropocentric reasons. Biophilia provides a compelling anthropocentric reason for protecting species that should be incorporated by the judiciary. The end result of this incorporation includes not simply increased protection of endangered species, but also an enduring enrichment to humanity.¹⁷

16. See *infra* notes 127-33 and accompanying text.

17. See STEPHEN R. KELLERT, *KINSHIP TO MASTERY* 9 (1997) ("Our nourishing experience of nature is, ultimately, a celebration of our humanity."). The new endangered species paradigm is therefore both symbolic and substantive. It is symbolic in the sense that it affords recognition to the inherent value which humanity places on the natural world. This recognition is, by itself, meaningful. It is substantive in that it affords increased protection to endangered species that is otherwise not provided by a more narrow definition of harm.

BIOPHILIA

What is Biophilia?

In *Biophilia*, the biologist Edward O. Wilson¹⁸ presents the argument that human beings have an intrinsic connection with nature. Biophilia, he explains, is "the innate tendency to focus on life and lifelike processes."¹⁹

From infancy we concentrate happily on ourselves and other organisms. We learn to distinguish life from the inanimate and move toward it like moths to a porch light. Novelty and diversity are particularly esteemed. . . . I will make the case that to explore and affiliate with life is a deep and complicated process in mental development. To an extent still undervalued in philosophy and religion, our existence depends on this propensity, our spirit is woven from it, hope rises on its currents.

There is more. Modern biology has produced a genuinely new way of looking at the world that is incidentally congenial to the inner direction of biophilia. In other words, instinct is in this rare instance aligned with reason. The conclusion I draw is optimistic: to the degree that we come to understand other organisms, we will place a greater value on them, and on ourselves.²⁰

This simple, yet elegant concept—that human beings have an innate, genetic connection with nature—suggests astounding ramifications. Biophilia encompasses every action we take: every house we build, every painting we create, and every poem we write²¹ is shaped by our affiliation with the natural world and with

18. Wilson is probably best known for his work on biodiversity, his research on ants, and the theory of island biogeography developed with the mathematician Robert H. MacArthur. See generally BERT HÖLDOBLER & EDWARD O. WILSON, *THE ANTS* (1990); ROBERT H. MACARTHUR & EDWARD O. WILSON, *THE THEORY OF ISLAND BIOGEOGRAPHY* (1967); EDWARD O. WILSON, *THE DIVERSITY OF LIFE* (1992). For an outstanding summary of Wilson's theory of island biogeography, see generally DAVID QUAMMEN, *THE SONG OF THE DODO, ISLAND BIOGEOGRAPHY IN AN AGE OF EXTINCTIONS* (1996).

19. WILSON, *supra* note 8, at 1.

20. *Id.* at 1-2.

21. The poet Walt Whitman wrote:

I believe a leaf of grass is no less than the journey-work of the stars,

other life forms. "The significance of biophilia in human biology is potentially profound It is relevant to our thinking about nature, about the landscape, the arts, and mythopoeia, and it invites us to take a new look at environmental ethics."²²

Thus, through our common DNA and through millions of years of co-evolution, we invariably have developed a connection with other species. The evidence of biophilia is not speculative but rather quite concrete. Cultural norms and patterns indicate that biophilia is ubiquitous to the human species. Wilson cites as one of the strongest examples the universal awe of the serpent that is found in all cultures, from the Hopi Indians²³ to urban New Yorkers.

These cultural manifestations may seem at first detached and mysterious, but there is a simple reality behind the ophidian archetype that lies within the experience of ordinary people. The mind is primed to react emotionally to the sight of snakes, not just to fear them but to be aroused and absorbed in their details, to weave stories about them.²⁴

And the pismire is equally perfect, and a grain of sand, and the egg of the wren,
And the tree-toad is a chef-d'oeuvre for the highest,
And the running blackberry would adorn the parlors of heaven,
And the narrowest hinge in my hand puts to scorn all machinery,
And the cow crunching with depress'd head surpasses any statue,
And a mouse is miracle enough to stagger sextillions of infidels.

KELLERT, *supra* note 17, at 138 (quoting WALT WHITMAN, *LEAVES OF GRASS (AND OTHER WORKS)* (1897)).

22. Wilson, *supra* note 1, at 32. One example of biophilia's presence within American mythopoeia is Dr. Seuss's famous story *The Lorax*:

It's a Truffula Seed.
It's the last one of all!
You're in charge of the last of the Truffula Seeds.
And Truffula Trees are what everyone needs.
Plant a new Truffula. Treat it with care.
Give it clean water. And feed it fresh air.
Grow a forest. Protect it from axes that hack.
Then the Lorax
and all of his friends
may come back.

THEODOR SEUSS GEISEL, *THE LORAX* (1971).

23. "The Hopi know Palulukon, the water serpent, a benevolent but frightening godlike being." WILSON, *supra* note 8, at 85-86.

24. *Id.* at 86.

Evidence of the Tenability of Biophilia

The legal world stands alone by failing to adopt biophilia or even make reference to it when reaching decisions that affect the survival of species. The theory of biophilia is not cited in any reported federal case.²⁵ This might give the indication that biophilia and its architect, Edward Wilson, are not taken seriously in the scientific world or in other academic areas. Reality tells a different story: recognition of biophilia is prevalent in many academic disciplines including economics, sociology, architecture, and mythology.²⁶

Within the economic field, there are a number of methodologies that have been developed to value the environment.²⁷ Contingent valuation, for example, uses social survey techniques to ascertain how we value the natural world.²⁸ "Claims for this approach have recently been much urged in both official and academic circles, and it has found serious political favour."²⁹ Contingent valuation studies indicate that human beings place a high value on the natural world. For example, one willingness-to-pay study estimated that the elephants in Kenya provide a value of \$25 million per annum, "a sum almost ten times the value of poached ivory exports."³⁰

Furthermore, the economic value of ecotourism is high, especially on a global scale. "[N]ature and wildlife tourism may now account for as much as 10 percent of the \$300 billion world tourism market, growing at an estimated 10 to 20 percent rate in recent years."³¹ In a recent public opinion survey, 63% of respondents cited "the beauty of nature" as a reason for protecting the environment.³² It

25. Based on a Westlaw search conducted on January 17, 2001.

26. See generally THE BIOPHILIA HYPOTHESIS, *supra* note 1.

27. These include direct valuation approaches like contingent valuation as well as indirect valuation methods such as the travel cost approach, which "uses observed expenditures on the travel to recreational sites to estimate the benefit arising from the recreational experience." DAVID PEARCE & DOMINIC MORAN, THE ECONOMIC VALUE OF BIODIVERSITY 65 (1994).

28. See John Foster, *Introduction: Environmental Value and the Scope of Economics, in VALUING NATURE? ETHICS, ECONOMICS, AND THE ENVIRONMENT* 1, 7-8 (John Foster ed., 1997) (arguing that the environmental field is not the appropriate place for economics).

29. *Id.*

30. PEARCE & MORAN, *supra* note 27, at 90.

31. STEPHEN R. KELLERT, THE VALUE OF LIFE 79 (1996).

32. F. KAD BENFIELD ET AL., ONCE THERE WERE GREENFIELDS 73 (1999).

is also estimated that perhaps 5% to 10% of the American population are active birdwatchers.³³ Americans speak with their wallets; the value that we place on the environment demonstrates our affiliation with nature.

In addition to economists, architects, particularly landscape architects, have long recognized the value of the natural world.³⁴ Woody Allen is probably not an avid birdwatcher—he once said that “[n]ature and I are two”³⁵—yet Allen himself lives in a city (New York) that preserves some of the most valuable land in the world as parkland. “The gardens of the ancient Egyptian nobility, the walled gardens of Persian settlements in Mesopotamia, and the gardens of merchants in medieval Chinese cities indicate that early urban peoples went to considerable lengths to maintain contact with nature.”³⁶

Psychological studies also support the significance of biophilia.³⁷ For example, studies have indicated that natural settings, particularly those with “savanna-like properties or nonturbulent water features,” provide humans with restorative benefits.³⁸ This psychological connection blends with landscape architecture.³⁹ “During the last two centuries, in several countries, the idea that exposure to nature fosters psychological well-being, reduces the stresses of urban living, and promotes physical health has formed part of the justification for providing parks and other nature in cities and preserving wilderness for public use.”⁴⁰

The religious world is also chock-full of biophilia.⁴¹ “And of every living thing of all flesh, two of every *sort* shalt thou bring into the ark, to keep *them* alive with thee; they shall be male and female.”⁴²

33. See KELLERT, *supra* note 31, at 80.

34. See Roger S. Ulrich, *Biophilia, Biophobia, and Natural Landscapes*, in THE BIOPHILIA HYPOTHESIS, *supra* note 1, at 73.

35. David W. Orr, *Love It or Lose It: The Coming Biophilia Revolution*, in THE BIOPHILIA HYPOTHESIS, *supra* note 1, at 415 (citing ERIC LAX, WOODY ALLEN: A BIOGRAPHY 39 (1992)).

36. Ulrich, *supra* note 34, at 73.

37. See *id.* at 108.

38. *Id.*

39. See *id.* at 73.

40. *Id.* (citations omitted).

41. Edward Wilson has even been described in reverent terms as “a conservation prophet — an apostle preaching the biodiversity gospel.” DAVID TAKACS, THE IDEA OF BIODIVERSITY 322 (1996).

42. Genesis 6:19 (King James).

Noah was instructed to include not just "charismatic megafauna"⁴³ on the ark.⁴⁴ "Of fowls after their kind, and of cattle after their kind, of every creeping thing of the earth after his kind, two of every sort shall come unto thee, to keep *them* alive."⁴⁵ The New Testament also contains biophilic references. "Are not two sparrows sold for a farthing? [A]nd one of them shall not fall on the ground without your Father."⁴⁶

Edward Wilson is not simply a scholar whose theories are relegated to the academic world. His theories are taken seriously even in the political domain.⁴⁷ During recent efforts to dismantle the ESA, Wilson was asked to meet with House Speaker Newt Gingrich.⁴⁸ "If it could be arranged, would E.O. Wilson be willing to come to Washington to talk to Gingrich about biodiversity, about conservation, about the Endangered Species Act? When the question was put to him, Wilson was intrigued and quite willing."⁴⁹ Gingrich was receptive to Wilson's efforts⁵⁰ and refused to allow the Young-Pombo bill, which would have undermined the ESA, to reach the House floor.⁵¹ Biophilia, and its founder Edward Wilson, are acclaimed in both academic and political circles, yet, inexplicably, once we enter into the courtroom, we find that things are different.

43. One of the criticisms of the ESA is that it is biased towards large animals with popular appeal—"charismatic megafauna" such as grizzly bears and bald eagles. See generally Shannon Petersen, Comment, *Congress and Charismatic Megafauna: A Legislative History of the Endangered Species Act*, 29 ENVTL. L. 463 (1999) (analyzing the legislative history of the ESA to show that its passage was inspired by the desire to preserve "charismatic megafauna").

44. See *Genesis* 6:20 (King James).

45. *Id.*

46. *Matthew* 10:29 (King James).

47. See Michael J. Bean, *The Gingrich That Saved the ESA*, ENVTL. F., Jan./Feb. 1999, at 26, 27-28.

48. See *id.*

49. *Id.* at 27-28.

50. Biophilia, like any genetically based trait, is expressed more strongly in some individuals than in others. Biophilia ignores political borders. Some argue that Newt Gingrich, for example, is a biophile.

[A]s a ten-year-old boy, [he] had waged a virtual crusade to persuade state and city leaders to build a zoo in Harrisburg, Pennsylvania. . . . [A] ten-year-old boy with a passion for animals is hooked for life. Harvard biologist Edward O. Wilson, whom National Zoo Director Michael Robinson once called "the Homer of biology," coined a term for this phenomenon: biophilia.

Id. at 27.

51. See *id.* at 32.

THE JUDICIARY'S FAILURE TO RECOGNIZE BIOPHILIA

Introduction to the ESA

Since its passage in 1973, the Endangered Species Act⁵² has been viewed as a panacea by many, and as a magnificent failure by others.⁵³ Criticisms of the ESA range from its failure to truly protect species to its placement of the interests of animals and plants above those of humans.⁵⁴ Nevertheless, the very existence of the ESA suggests that humans care about the natural world, that we have a connection with other living organisms that is intrinsic to our species.⁵⁵

A key component of the ESA is the designation of endangered and threatened species by the Department of the Interior.⁵⁶ The Secretary of the Interior, in consultation with the Secretary of Commerce, is charged with identifying species that are candidates for listing.⁵⁷ In addition, listing may be accomplished through private petition.⁵⁸ Factors included in the species listing determination are:

52. 16 U.S.C. §§ 1531-44 (1994 & Supp. IV 1998).

53. See generally CHARLES C. MANN & MARK L. PLUMMER, NOAH'S CHOICE, THE FUTURE OF ENDANGERED SPECIES 214-15 (1995) ("By any measure, efforts to achieve the lofty goals mandated by the Endangered Species Act have failed . . . [T]he time has come to question the goal that underlies the act: Save every species, no matter what the cost.").

54. For example, an Oklahoma road that was to be built to improve access to a hospital for the Choctaw Indians was cancelled because of the presence of the endangered American burying beetle (*Nicrophorus americanus*). "A HIGHWAY that would improve access to a hospital serving the poor—can one imagine a more deserving public project? Yet through the enforcement of the Endangered Species Act, the interests of a beetle were, in effect, elevated above those of human beings." *Id.* at 24.

55. See *infra* notes 121-26 and accompanying text.

56. See 16 U.S.C. § 1533 (1994 & Supp. IV 1998). Implementation of the ESA is largely accomplished by the Department of the Interior's Fish and Wildlife Service. In addition, the National Marine Fisheries Service within the Department of Commerce is charged with protecting endangered and threatened marine floral and faunal species. See RAY VAUGHAN, ENDANGERED SPECIES ACT HANDBOOK 14 (1994).

57. One of the many difficulties with implementing the ESA is that the concept of "species" is not easily defined. For example, the red wolf (*Canis rufus*) is listed as an endangered species but some have argued that it is actually a subspecies of the gray wolf (*Canis lupus*). Some scientists have also argued that the red wolf is actually a cross between the gray wolf and the coyote. See JAN DEBLIEU, MEANT TO BE WILD 33-34 (1993).

58. See VAUGHAN, *supra* note 56, at 23-27.

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.⁵⁹

Once a determination is made to list a species, the Secretary of the Interior publishes the listing along with a designation of habitat that is critical to the survival of the species.⁶⁰ The Secretary must then develop and implement a recovery plan for the listed species that includes the designation of critical habitat required to enable the given species to recover.⁶¹

Section 9 of the ESA states that it is unlawful for any person to "take" an endangered species.⁶² The Act defines take to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."⁶³ The Secretary further defined harm by issuing regulations stating that "[h]arm in the definition of 'take' in the Act means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."⁶⁴ This interpretation of "harm" under the ESA drives a great deal of the controversy surrounding the Act and recent case law suggests that the judiciary is moving away from its earlier expansive approach to a more narrow interpretation of the harm provision of the ESA.⁶⁵ This expansive definition was set out in the famous Tellico Dam case

59. 16 U.S.C. § 1533(a)(1) (1994).

60. *See id.* § 1533(b)(2). Critical habitat refers to "the specific areas . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection." *Id.* § 1532(5)(A)(i).

61. *See id.* § 1533(f) (1994 & Supp. IV 1998).

62. *See id.* § 1538(a)(1)(B)-(C).

63. *Id.* § 1532(19).

64. 50 C.F.R. § 17.3 (1999).

65. *See Cheever, supra* note 7, at 320-21.

(TVA)⁶⁶ and in *Palila v. Hawaii Department of Land and Natural Resources*.⁶⁷

Judicial Myopia

Tennessee Valley Authority v. Hill.⁶⁸ *Defining the Concept of Harm*

The Tellico Dam case is perhaps the most notable precedent in the world of endangered species litigation.⁶⁹ In 1966, Congress authorized the Tellico Dam Project in the Little Tennessee River Valley.⁷⁰ The dam was nearly complete when environmental plaintiffs and local residents sued to stop construction.⁷¹ Completion of the dam would, they argued, destroy the remaining habitat of a small fish, the snail darter, and result in the species' extinction.⁷² The Supreme Court agreed and held that the ESA was perfectly clear on this issue and construction of the dam must cease.⁷³

It is hard to overemphasize the significance of the United States Supreme Court's opinion in *Tennessee Valley Authority v. Hill*. Not only did it remain the only Supreme Court consideration of the substantive provisions of the Endangered Species Act for seventeen years, it also characterized the Act as placing the goal of "revers[ing] the trend toward species extinction" above considerations of cost, and explicitly precluded courts from engaging in traditional equitable balancing in determining whether to issue an injunction in the face of a violation of the Act.⁷⁴

The Court's decision not to allow a balancing of interests under the ESA indicates both the strength of the Act as well as the deference afforded Congressional intent.

66. *Tennessee Valley Auth. v. Hill*, 437 U.S. 153 (1978).

67. 852 F.2d 1106 (9th Cir. 1988), *mot. denied*, 73 F. Supp. 2d 1181 (D. Haw. 1999).

68. 437 U.S. 153 (1978).

69. *See Hill*, 437 U.S. 153; Cheever, *supra* note 7, at 316.

70. *See Cheever*, *supra* note 7, at 315-16.

71. *See Hill*, 437 U.S. at 157-58.

72. *See id.* at 153.

73. *See id.* at 154-55.

74. Cheever, *supra* note 7, at 316 (footnote omitted).

Lower Court Approaches: Refining the Concept of Harm

Lower courts have continued to recognize the TVA approach to the ESA. In *Palila v. Hawaii Department of Land & Natural Resources*,⁷⁵ environmental groups claimed that the existence of feral sheep in the habitat of the endangered Palila bird constituted a "taking" under the ESA.⁷⁶ The court agreed and held that allowing the sheep to live in the Palila's habitat constituted a taking. In so holding, the court stated that "[t]he Secretary's inclusion of habitat destruction that could result in extinction follows the plain language of the statute because it serves the overall purpose of the Act, which is 'to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.'"⁷⁷ After focusing on the purpose of the Act, the court then looked to the legislative history of the ESA. "[I]n the Senate Report on the Act: 'Take' is defined in . . . the broadest possible manner to include every conceivable way in which a person can 'take' or attempt to 'take' any fish or wildlife."⁷⁸ Perhaps most importantly, the court found that harm includes "habitat destruction that *could* result in extinction."⁷⁹ Thus, the Ninth Circuit included potential harm to a species under the "take" definition.⁸⁰

75. Three prior suits had been brought against the Hawaii Department of Natural Resources to remove other types of feral sheep and goats from the Palila's habitat. See *Palila v. Hawaii Dep't of Land & Natural Resources* (Palila I), 471 F. Supp. 985 (D. Haw. 1979), *aff'd*, 639 F.2d 495 (9th Cir. 1981); *Palila v. Hawaii Dep't of Land & Natural Resources* (Palila II), 639 F.2d 495, 497 (9th Cir. 1981); *Palila v. Hawaii Dep't of Land & Natural Resources* (Palila III), 649 F. Supp. 1070 (D. Haw. 1986), *aff'd*, 852 F.2d 1106 (9th Cir. 1988).

76. See *Palila*, 852 F.2d at 1106, 1107.

77. *Id.* at 1108 (citing 16 U.S.C. § 1531(b) (1994)).

78. *Id.* (alteration in original) (citing S. REP. NO. 93-307, at 7 (1973), *reprinted in* 1973 U.S.C.C.A.N. 2989, 2995).

79. *Id.* at 1110 (emphasis added).

80.

[T]he Ninth Circuit applies a significant risk of harm standard to all takings claims while characterizing these claims as takings by "harm." Indeed, the Ninth Circuit analysis characterizes injury to endangered species that will allegedly take place in the future as "actual harm" within the meaning of the regulatory definition of that term if a party can demonstrate that the harm is reasonably certain to occur.

Alicia M. Griffin, Note, *Beyond "Harm": Abandoning the Actual Injury Standard for Certain Prohibited Takings Under the Endangered Species Act by Giving Independent Meaning to "Harassment,"* 52 VAND. L. REV. 1831, 1858-59 (1999) (footnotes omitted); see also *Defenders of Wildlife v. Bernal*, 204 F.3d 920, 925 (9th Cir. 2000) (stating that "we held that the

This relatively broad approach is not, however, followed by all other jurisdictions.⁸¹

The First Circuit, in particular, has held that harm can be found only where proof of *actual* past or present injury to the endangered species is demonstrated.⁸² In *American Bald Eagle v. Bhatti*,⁸³ the Court of Appeals stated that "[t]he proper standard for establishing a taking under the ESA, far from being a numerical probability of harm, has been unequivocally defined as a showing of 'actual harm.'"⁸⁴ The court then held that the plaintiffs failed to show that bald eagles were ingesting lead bullets used by hunters.⁸⁵ The court went on to note: "[o]ur review of the record indicates that bald eagles can be harmed by the ingestion of lead. There is, however, no evidence in the record of any harm to the bald eagles at Quabbin as a result of the 1991 deer hunt."⁸⁶

The First Circuit would be aided by a biophilic approach to the ESA. To require "*nothing less than one hundred percent certainty of death or injury to an endangered species*"⁸⁷ is at odds with the biophilic purpose of the Act.⁸⁸ The ESA is designed specifically to avoid waiting until a species is close to extinction to protect it. It may be impossible to show with absolute certainty that habitat destruction is injuring or killing an endangered species. Habitat

Supreme Court's decision in *Sweet Home* does not overrule *Rosboro* and that a reasonably certain threat of imminent harm to a protected species is sufficient for issuance of an injunction under section 9 of the ESA"); *Marbled Murrelet v. Babbitt*, 83 F.3d 1060, 1066 (9th Cir. 1996) ("A reasonably certain threat of imminent harm to a protected species is sufficient for issuance of an injunction . . ."); *National Wildlife Fed'n v. Burlington N. R.R.*, 23 F.3d 1508, 1511 (9th Cir. 1994) (stating that "[t]he plaintiff must make a showing that a violation of the ESA is at least likely in the future"). *But see Arizona Cattle Growers' Ass'n v. United States Fish and Wildlife Serv.*, 63 F. Supp. 2d 1032, 1042 (D. Ariz. 1998) (stating that "[t]he language of the regulation states that 'harm' includes habitat modification or degradation only if it results in actual injury or death to wildlife").

81. See Griffin, *supra* note 80, at 1847.

82. See *id.*

83. 9 F.3d 163 (1st Cir. 1993).

84. *Id.* at 165.

85. See *id.* at 166.

86. *Id.*

87. Griffin, *supra* note 80, at 1849.

88. See *id.* ("Two elements of the appellate court's analysis, in fact, revealed that *nothing less than one hundred percent certainty of death or injury to an endangered species* would establish a taking.").

destruction may, however, be harming a species in a myriad of ways short of this standard.

Judiciary in Retreat: Confining the Concept of Harm

Perhaps most disturbing is the fact that the judiciary recently has begun to question the prohibition on balancing economic interests with environmental concerns under the ESA. In *Babbitt v. Sweet Home*, parties who were dependent on the forest products industry brought suit against the Department of the Interior, arguing that the Secretary's definition of "take" was broader than Congress intended when it enacted the ESA.⁸⁹ The ESA defines 'take' as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."⁹⁰ The Secretary of the Interior further defined harm to include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."⁹¹

The respondents raised three arguments in support of their contention that Congress did not intend "take" to include habitat modification:

First, they correctly noted that language in the Senate's original version of the ESA would have defined "take" to include "destruction, modification, or curtailment of [the] habitat or range" of fish or wildlife, but the Senate deleted that language from the bill before enacting it. Second, respondents argued that Congress intended the Act's express authorization for the Federal Government to buy private land in order to prevent habitat degradation in § 5 to be the exclusive check against habitat modification on private property. Third, because the Senate added the term "harm" to the definition of "take" in a floor amendment without debate, respondents argued that the court should not interpret the term so expansively as to include habitat modification.⁹²

89. See *Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon*, 515 U.S. 687, 691 (1995).

90. 16 U.S.C. § 1532(19) (1994).

91. *Sweet Home*, 515 U.S. at 691 (quoting 50 C.F.R. § 17.3 (1994)).

92. *Id.* at 693 (alteration in original) (footnote omitted).

The Court cited three reasons why the Secretary's interpretation of the Act was reasonable.⁹³ First, the Court explained that an ordinary understanding of the word "harm" supported this interpretation.⁹⁴ Second, the Court explained that:

the broad purpose of the ESA supports the Secretary's decision to extend protection against activities that cause the precise harms Congress enacted the statute to avoid. In *TVA v. Hill*, we described the Act as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." . . . As stated in § 2 of the Act, among its central purposes is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved"⁹⁵

The Court went on to explain that in *TVA*, it recognized that "[t]he plain intent of Congress in enacting this statute . . . was to halt and reverse the trend toward species extinction, whatever the cost. This is reflected not only in the stated policies of the Act, but in literally every section of the statute."⁹⁶

The third reason recognized by the Court was the fact that Congress authorized "the Secretary to issue permits for takings that § 9(a)(1)(B) would otherwise prohibit, 'if such taking [was] incidental to . . . the carrying out of an otherwise lawful activity'"⁹⁷ This exception suggests that Congress itself felt that § 9(a)(1)(B) prohibited indirect takings.⁹⁸

Sweet Home embodies an overly narrow concept of harm⁹⁹ that fails to consider biophilia. All three of the reasons mentioned by the Court give support to an even broader interpretation of the ESA. The purpose of the ESA, as embodied by biophilia, suggests a decision more in line with Congressional intent.

93. See *id.* at 697.

94. See *id.*

95. *Id.* at 698 (quoting 16 U.S.C. § 1531(b)).

96. *Id.*, 515 U.S. at 699 (citing *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978)).

97. *Id.* at 700.

98. See *id.*

99. See Steve P. Quarles et al., *Sweet Home and the Narrowing of Wildlife "Take" Under Section 9 of the Endangered Species Act*, [News & Analysis] 26 ENVTL. L. REP. (ENVTL. L. INST.) 10003 (Jan. 1996).

Justice O'Connor, in her concurrence, also failed to recognize the interconnectedness that biophilia suggests. She wrote that:

Proximate causation is not a concept susceptible of precise definition. It is easy enough, of course, to identify the extremes. The farmer whose fertilizer is lifted by a tornado from tilled fields and deposited miles away in a wildlife refuge cannot, by any stretch of the term, be considered the proximate cause of death or injury to protected species occasioned thereby. At the same time, the landowner who drains a pond on his property, killing endangered fish in the process, would likely satisfy any formulation of the principle. We have recently said that proximate causation "normally eliminates the bizarre" Proximate causation depends to a great extent on considerations of the fairness of imposing liability for remote consequences.¹⁰⁰

If Congress based the ESA on a biophilic purpose, this should play a part in considering when a species is harmed; biophilic harm to humans is a critical element of judicial consideration of the ESA. O'Connor and the *Sweet Home* majority failed to recognize Congress's biophilic intent and, in so doing, crafted a narrow interpretation of harm that ignores the importance of habitat preservation in ameliorating *potential future harm* to species.

Standing under the ESA

Biophilic harm also plays an important role when considering the citizen suit provisions of the ESA. In *Bennett v. Spear*, ranchers and other "nonenvironmental" interests filed suit under the citizen suit provisions of the ESA¹⁰¹ over the decision of the Fish and Wildlife Service to limit water flow to an irrigation project in order to protect two endangered fish species.¹⁰² The central issue in the case, however, was whether the nonenvironmental interests satisfied the constitutional standing requirement. This requirement stems from Article III of the Constitution, which allows the judicial branch of

100. *Sweet Home*, 515 U.S. at 713 (O'Connor, J., concurring) (citation omitted).

101. See 16 U.S.C. § 1540(g) (1994). This section states that "any person may commence a civil suit on his own behalf." *Id.*

102. See *Bennett v. Spear*, 520 U.S. 154, 159 (1997).

government to hear "cases" and "controversies."¹⁰³ "The doctrine of standing refers to a person's right to bring a lawsuit before a court."¹⁰⁴ Under the standing doctrine, a plaintiff must meet three elements to bring suit: (1) an injury in fact that is concrete and particularized as well as actual or imminent; (2) a demonstration that the injury is fairly traceable to the acts of the defendant; and (3) a showing that it is likely (not speculative) that the injury will be redressed by a decision favorable to the plaintiff.¹⁰⁵ "The party invoking federal jurisdiction bears the burden of establishing these elements."¹⁰⁶

Justice Scalia, writing for the majority in *Bennett*, explained that:

It is true that the plaintiffs here are seeking to prevent application of environmental restrictions rather than to implement them. But the "any person" formulation applies to all the causes of action authorized by § 1540(g)—not only to actions against private violators of environmental restrictions, and not only to actions against the Secretary asserting underenforcement under § 1533, but also to actions against the Secretary asserting overenforcement under § 1533.¹⁰⁷

The Court thus held that the citizen suit provisions of the ESA also applied to nonenvironmental interests.¹⁰⁸ But what Justice Scalia and the *Bennett* majority failed to consider is the underlying purpose of the ESA and its roots in biophilia.¹⁰⁹ This purpose, to preserve endangered species, coupled with the prohibition against balancing economic interests as specified in *TVA*, supports the argument that the citizen suit provisions should be limited to environmental concerns.

103. See U.S. CONST. art. III, § 2.

104. Todd William Roles, Note, *Has the Supreme Court Armed Property Owners in Their Fight Against Environmentalists?* *Bennett v. Spear and its Effect on Environmental Litigation*, 41 ARIZ. L. REV. 227, 229-30 (1999).

105. See *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

106. *Id.* at 561 (citations omitted).

107. *Bennett*, 520 U.S. at 166.

108. See *id.*

109. Wilson mentions the standing issue in *Biophilia*, although the question he raises is whether nonhuman organisms should have standing to sue. See WILSON, *supra* note 8, at 130-31.

Despite expanding the ability of nonenvironmental interests to bring suit, the Court has limited the ability of environmental advocates to sue under the ESA. In the case of *Lujan v. Defenders of Wildlife*,¹¹⁰ the Supreme Court failed to recognize that human beings can be "imminently harmed" by the loss of species in a myriad of ways dictated by our innate connection with the natural world.¹¹¹ In *Lujan*, environmentalists sued the Department of the Interior over regulations that required federal agencies to confer with the Secretary of the Interior only with respect to federally funded projects located within the United States and on the high seas.¹¹² Under these regulations, federal projects overseas were not required to undergo any agency review to ensure conformity with the ESA.¹¹³ Defenders of Wildlife obtained affidavits from two members who claimed that they suffered an injury in fact.¹¹⁴ One member stated in the affidavit that she had traveled to the Nile in 1986 and viewed the habitat of the endangered Nile crocodile.¹¹⁵ A second member of the organization stated that she traveled to Sri Lanka in 1981 and observed the habitat of endangered species including the Asian elephant.¹¹⁶ Both members claimed that they intended to return to each area in the future to attempt to view endangered species.¹¹⁷ Justice Scalia, writing for the majority, held that the environmental groups lacked standing because they did not assert a sufficiently imminent injury.¹¹⁸

Biophilia suggests that imminent harm can include even the *knowledge* that a species is exterminated on the other side of the globe.¹¹⁹

110. 504 U.S. 555 (1992).

111. *See id.* at 560-62.

112. *See id.* at 558-59.

113. *See id.*

114. *See id.* at 563.

115. *See id.*

116. *See id.*

117. *See id.*

118. *See id.* at 556, 578.

119. This argument holds increasing weight as our world becomes smaller and more entwined. Modern technology allows us to gather information from around the Earth in a few seconds: the era of the "global village" has truly arrived. The birth or death of a panda, for example, can be broadcast around the world in minutes. Technology, through media such as the Internet, has thus increased the potential for anthropocentric injury even when a species is exterminated on the opposite end of the globe.

Many implications stem from the notion that people have a fundamental physical, emotional, and intellectual dependence on nature and living diversity. Above all, the meaningful and satisfying experience of these values may represent a vital expression of healthy human functioning and relationship to the natural world. Conversely, the erosion of this dependence on nature might signify considerable risk to humans materially, affectively, cognitively, and even spiritually. Most discussions of the harmful impacts of the species extinctions occurring annually—currently estimated at 15,000 to 30,000—have focused on the loss of material benefits to people such as fewer medicines, agricultural products, or diminished ecosystem functioning. These losses certainly represent substantial threats to human well-being, but the biophilia notion suggests that far more may be at stake than just the diminution of people's material options. The degradation of life on earth might also signify the possibility of diminished emotional and intellectual well-being and capacity.¹²⁰

A Better Approach: Aesthetic Value Cases

The aesthetic value¹²¹ that humans place on nature provides an additional linchpin in the argument for the adoption of biophilia. Numerous court cases have recognized aesthetic value, particularly in the context of the standing doctrine.¹²² Courts have notably adopted a "biophilic" approach in cases involving standing and the Animal Welfare Act.¹²³ In *Animal Legal Defense Fund, Inc. v. Glickman*,¹²⁴ the court held that the plaintiff's aesthetic interest in seeing animals living in a nurturing habitat at a zoo constituted an

120. KELLERT, *supra* note 31, at 7 (footnote omitted).

121. What is aesthetic value? Aesthetic experience "is not unlike . . . the experience of wonder: 'the power of the displayed object to stop the viewer in his or her tracks, to convey an arresting sense of uniqueness, to evoke an exalted attention.'" Sarah Harding, *Value, Obligation and Cultural Heritage*, 31 ARIZ. ST. L.J. 291, 332-33 (1999) (footnote omitted). "Whether the experience is thought of as predominantly emotional, cognitive, or imaginative, it is recognized as an essential aspect of human experience." *Id.* at 333.

122. See *Animal Legal Defense Fund, Inc. v. Glickman*, 154 F.3d 426, 432 (D.C. Cir. 1998).

123. See 7 U.S.C. § 2143(a) (1994) (describing the Secretary's ability to "promulgate standards to govern the humane handling, care, treatment and transportation of animals").

124. 154 F.3d 426 (D.C. Cir. 1998).

injury in fact for standing purposes.¹²⁵ This interest is simply another way of saying that the impairment of a plaintiff's biophilic connection with other living organisms constitutes a sufficient injury to satisfy standing. In fact, the court recognized that this interest is just as appropriately applied to endangered species litigation. "[A] number of cases that have recognized standing based on an aesthetic interest in the observation of animals have involved government action that allegedly threatened to diminish the overall supply of an animal species."¹²⁶ If courts are willing to recognize the aesthetic value of nature to humans in their decisions, there is no reason to refuse to consider biophilia as well.

LEGISLATIVE HISTORY: THE ROLE OF NATURE IN THE PROMULGATION OF THE ESA

As an underlying anthropocentric reason for protecting species, biophilia is an intricate component of the ESA. Congress passed the ESA to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species."¹²⁷ Congress also mandated that all federal departments and agencies act toward conserving endangered and threatened species.¹²⁸

Congress implicitly recognized the role of biophilia when it enacted the ESA. "The legislative history demonstrates Congressional alarm regarding species extinction. In utilitarian terms, members of Congress referred to mankind's relatively recent evolution, *the interconnectedness of species*, the human homogenization of habitats

125. *See id.* at 431-32. Animal Legal Defense Fund provided the court with an affidavit from Marc Jurnove. Jurnove enjoyed visiting zoos and other parks near his home where exotic animals were kept. At one zoo, "he saw particular animals enduring inhumane treatment." *Id.* at 431. The court went on to state that "Mr. Jurnove has made clear that he has an aesthetic interest in seeing exotic animals living in a nurturing habitat, and that he has attempted to exercise this interest by repeatedly visiting a particular animal exhibition to observe particular animals there." *Id.* at 432.

126. *Id.* at 437 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 562 (1992); *Japan Whaling Ass'n v. American Cetacean Soc'y*, 478 U.S. 221, 231 n.4 (1986)).

127. 16 U.S.C. § 1531(b) (1994).

128. *See id.* § 1531(c)(1).

in which plants and animals evolved, the resulting acceleration of extinction, *and the incalculable loss posed to humankind.*"¹²⁹

The legislative history of the ESA, moreover, contains a number of biophilia-like references. "Many of these animals simply give us esthetic [sic] pleasure. We like to view them in zoos and in their natural habitats."¹³⁰ "[A]t least one legislator pointed out the value derived from the mere *knowledge* that wild species exist, regardless of the aesthetic 'use' of the species."¹³¹ Senator Harrison Williams (D-NJ) stated that "[m]ost animals are worth very little in terms of dollars and cents. However, their esthetic value is great indeed. The pleasure of simply observing them . . . is unmeasurable."¹³² Biophilia is therefore intrinsic to the ESA. "The ESA seeks to preserve species for the hearts and minds, rather than the wallets, of present and future generations. It reflects 'biophilia,' the yearning and perhaps need human beings have for an intimate relationship with the natural world."¹³³

A NEW ENDANGERED SPECIES PARADIGM

There are therefore three reasons why biophilia should be applied to the ESA. First, one of the primary purposes behind the ESA is a biophilic one; Congress considered humanity's connection with the natural world as intrinsic to the Act. Second, the recognition of biophilia, in one form or another, is commonplace in other academic disciplines and professions. From religion to architecture, biophilia permeates our lives and it is anomalous for the judiciary to stand alone in failing to recognize the doctrine. Finally, adopting biophilia in the courtroom may not be such a momentous leap after all;

129. Jacqueline Lesley Brown, *Preserving Species: The Endangered Species Act Versus Ecosystem Management Regime, Ecological and Political Considerations, and Recommendations for Reform*, 12 J. ENVTL. L. & LITIG. 151, 165 (1997) (footnote omitted) (emphasis added).

130. Joe Mann, Note, *Making Sense of the Endangered Species Act: A Human-Centered Justification*, 7 N.Y.U. ENVTL. L.J. 246, 258 (1999) (quoting 119 CONG. REC. 25,668 (statement of Sen. Tunney)).

131. *Id.* at 259 (citing 119 CONG. REC. 25,693 (statement of Sen. Domenici)).

132. Petersen, *supra* note 43, at 479 (quoting 119 CONG. REC. 25,675 (July 24, 1973) (statement of Sen. Williams)).

133. Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENVTL. L. REV. 1, 12 (1999) (footnote omitted).

recognition of humanity's aesthetic valuation of nature supports the inclusion of biophilic considerations in the judicial decision-making process.

When considering cases under the ESA, courts should look to biophilia as a core purpose behind the Act. Decisions should be consistent with this purpose and should reflect the connection that humanity has with the natural world. Biophilia lends support to a revised definition of harm that recognizes habitat destruction and potential future harm as critical to the core purpose of the ESA.

Biophilia should be viewed as a tool to be used to better understand and evaluate the ESA. Humanity's innate connection with nature is something that needs to be recognized by the courts. Such an important concept should not be overlooked when determining whether the courts are fulfilling congressional intent.

THE REACH OF BIOPHILIA

Biophilia, like any legal theory, has limitations. The concept of biophilic harm to humans is a novel approach to endangered species protection. Certainly Congress considered the effect that species' extinction has on humanity; this was clearly a central purpose behind the ESA. Yet courts are limited in applying this purpose by standards that are extremely deferential to agency decisions.

Perhaps biophilia can play a role in other areas of the law as well. For example, in assessing development and long-range planning efforts, courts might consider biophilia. Biophilia may shift the burden of proof to developers to demonstrate that their project is more important than protecting this innate value. Certainly biophilia has already made inroads in cases dealing with standing. The progression from a recognition of aesthetic valuation of nature to the adoption of biophilia is a natural step. The fact that we place an aesthetic value on nature confirms the existence of an intrinsic connection with the natural world. The presence of biophilia, for example, was inherently evident when the Supreme Court held that "the desire to use or observe an animal species, even for purely esthetic purposes, is undeniably a cognizable interest for purpose of standing."¹³⁴ But the judiciary must go

134. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 562-63 (1992).

further and recognize biophilia as a legitimate doctrine that codifies our affiliation with the natural world. In doing so, the courts will be recognizing a fundamental aspect of human nature: a biophilic rationale for our actions and for protecting the natural world.

[A]s biological knowledge grows the ethic will shift fundamentally so that everywhere, for reasons that have to do with the very fiber of the brain, the fauna and flora of a country will be thought part of the national heritage as important as its art, its language, and that astonishing blend of achievement and farce that has always defined our species.¹³⁵

L. Misha Preheim

135. WILSON, *supra* note 8, at 145.