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THE INTENT AND IMPLEMENTATION OF THE ESA: A MATTER OF SCALE

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Simon Levin noted that "[scale is] the fundamental conceptual problem in ecology, if not in all of science."[2] Often, what we believe to be opposing theories are a matter of equally valid concepts being advanced at different scales.[3] As such, when intelligent people's perceptions are in conflict, the tension may be a function of mismatched scales, rather than diametrically opposed philosophies. The debate which has arisen in the context of the application of the Endangered Species Act (ESA) on private property may be such a conflict. It has been said that the ESA pits "the nation's fierce obsession with self-determination and private property versus its love of the wilderness and compassion for wildlife."[4]

The goal of this analysis is to take a scale-based perspective in examining the fundamental principles of the ESA and private property rights. The hazard of this approach is that, not being a social scientist, I may not fully appreciate the context of this conflict. The advantage is being able to bring an ecologist's perspective to an arena that has been dominated by development and commodity interests of the "wise use" movement and various environmental organizations and animal rights groups comprising the Endangered Species Coalition.[5]

THE TEMPORAL SCALE

Conflicts of Intent

While opponents of the ESA point out that extinction is the ultimate fate of all species,[6] this truism fails to recognize that the current extinc-

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2. Simon A. Levin, *The Problem of Pattern and Scale in Ecology*, 73 ECOLOGY 1943 (1992).

3. *See* T.F.H. ALLEN & THOMAS W. HOEKSTRA, TOWARD A UNIFIED ECOLOGY (1992).

4. Margaret Kriz, *Caught in the Act*, NAT'L J., Dec. 1995, at 3090.

5. Elizabeth Losos, *The Future of the U.S. Endangered Species Act*, 8 TRENDS IN ECOLOGY & EVOLUTION 332, 335 (1993).

6. Tom Bethell, *Species Logic*, AMERICAN SPECTATOR, Aug. 1995, at 20.

tion rate is at least 1,000-times the normal rate of species loss.[7] Although the public may believe that our major environmental problems have been solved,[8] the loss of species is unabated at a global level, with a loss of some 20,000 species per year.[9] Due to the ESA, we have made demonstrable progress toward arresting this alarming trend in the United States Whereas over 500 species are known to have been lost from the U.S. in the 200 years prior to the Act, only seven extinctions have been documented in this country in the twenty-one years since its passage.[10]

Even decade-long perspectives may be alien to those private property owners who purchase property as a short-term investment, without the intent to live on, let alone steward, the land.[11] Land speculation will be increasingly lucrative as our population continues to grow. Where lands are owned with the intent of sustaining their ecological functions (e.g., producing forage, crops or timber) within a multigenerational family network, conflicts with the ESA will not disappear, but the time-frame for constructive dialogue would not be defined by a race to convert the land to immediate anthropocentric use.

Conflicts of Implementation

Kubasek and Browne noted that, "[f]or many, the major problems arising from the Act stem not so much from any inherent flaws in the structure of the legislation, but rather from problems of enforcement and funding."[12] This is a common notion, and it suggests that we can resolve species-property conflicts by creatively implementing the Act. Even the process which permits harm to endangered species (i.e., Habitat Conservation Plan) often may be viewed as being a serious impediment to the property owner, who must act quickly to exploit opportunities to "develop" the land.[13] Although ESA procedures are extremely fast in terms of ecological time, the implementation of the Act is viewed as cumbersome in economic time-scales.

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7. *See* Randall Cortez Wilson, *Triage and the Endangered Species Act,* TRANSACTIONS OF THE 60TH WILDLIFE AND NATURAL RESOURCES CONFERENCE (1995).

8. Mollie Beattie, *The Endangered Species Act: Myths and Realities* 1 (May 20,1995) (Paper presented at the Society of Environmental Journalists Meeting).

9. Wilson, *supra* note 7.

10. *See* Jason M. Patlis, *Biodiversity, Ecosystems and Species: Where Does the Endangered Species Act Fit In?,* 8 TUL. ENVTL. L.J. 33 (1994).

11. *See generally* WES JACKSON, NEW ROOTS FOR AGRICULTURE (1980).

12. Nancy R. Kubasek & M. Neil Browne, *The Endangered Species Act: An Evaluation of Alternative Approaches,* 3 DICK. J. ENVTL. L. & POL'Y 1, 11 (1994).

13. *See* Bruce Babbitt, *The Endangered Species Act and "Takings": A Call for Innovation within the Terms of the Act,* 24 ENVTL. L. 355 (1994).

The time-scale of the ESA is based on ecological processes, which are fundamentally slower than the rates of development and extractive projects on private property. The intent of the Act is intergenerational, while the profits to be made on development of private property are often immediate. This is not to say that the ESA is disconnected from economic concerns. As noted by Watkins, the truth is that our economy depends on the sustained health of the environment. What is economic in the long run is what conserves endangered species[14] — a realization that is substantiated by the loss of 40,000 coastal fishery jobs with the decline of salmon and the struggles of fruit growers in Guam who are overwhelmed by fruit flies that had been kept in check by a now-endangered bat.[15]

The rate of species' recovery is a complex function of biological attributes,[16] and no legislation can change ecological time-scales. Many endangered species have lost more than 90 percent of their habitat to anthropogenic factors in the last 200 years,[17] and the ESA could not reasonably have led to the recovery of many of these species in just two decades.[18] This temporal difficulty has led to the suggestion that rather than reacting at the brink of extinction, we should take proactive measures to prevent such crises.[19] However, this dichotomy of tactics may be misleading; the "nick of time" context of the ESA is proactive to the extent that endangered species are warnings that entire communities and ecosystems are at risk.

The ESA has been criticized by conservation biologists for not having a sufficiently long temporal perspective. Shaffer suggested that a population should be considered as viable if it has a 99 percent chance of surviving for 1,000 years in the face of stochastic factors.[20] But actions mandated by sections 7 or 10 of the ESA[21] are functionally limited to the applicant's project time-frame, which may be unrelated to even short-term

14. T.H. Watkins, *What's Wrong with the Endangered Species Act?*, AUDUBON, Jan.-Feb. 1996, at 37, 38-40.

15. Beattie, *supra* note 8, at 5.

16. U.S. Fish and Wildlife Service, (last modified Mar. 20, 1997) <http://www.fws.gov>.

17. Beattie, *supra* note 8.

18. U.S. DEP'T OF THE INTERIOR, U.S. FISH AND WILDLIFE SERVICE, REPORT TO CONGRESS: ENDANGERED AND THREATENED SPECIES RECOVERY PROGRAM 10 (1995) [hereinafter REPORT TO CONGRESS]; United States Fish and Wildlife Service, *supra* note 16; Watkins, *supra* note 14, at 40.

19. *See* Losos, *supra* note 5, at 334; Kubasek & Browne, *supra* note 12, at 9; Wilson, *supra* note 7 at 464-65; NATIONAL WILDLIFE FED'N, INVOLVING COMMUNITIES IN CONSERVATION 1 (1995).

20. Daniel J. Rohlf, *Six Biological Reasons Why The Endangered Species Act Doesn't Work-And What to do About It*, 5 CONSERVATION BIOLOGY 273, 276 (1991) (quoting Margaret Shaffer, *Minimum Population Sizes for Species Conservation*, 31 BIOSCIENCE 131 (1981)); *see also* MARGARET SHAFFER, MINIMUM VIABLE POPULATIONS: COPING WITH UNCERTAINTY 69-86 (1987).

21. 16 U.S.C. §§ 1536, 1539 (1993).

population trends.[22] The U.S. Fish and Wildlife Service (FWS) was criticized for short-sightedness in defending their decision to delist the brown pelican based on the contention that mining impacts were unlikely in the *near* future.[23] In a similar fashion, offshore oil leases were permitted because the admitted harm to protected whales was not "sufficiently imminent or certain."[24]

THE SPATIAL SCALE

Conflicts of Intent

In global terms, tropical countries are experiencing the majority of extinctions by virtue of their biological richness and economic struggle.[25] Given that the vast majority of our food, fiber, and medicines are derived from organisms which originated outside of our borders, the explicit recognition of international cooperation and conventions within the ESA is a matter of enlightened self-interest.[26] Although the ESA provides limited means of addressing international losses of biodiversity, the Act was never intended to halt extinctions on a global scale, contrary to the implications of Kubasek and Browne.[27] The 959 endangered species in the United States are almost certainly just the tip of the "extinction iceberg" if we consider our nescience about insects, the most speciose group of organisms. Insects comprise over half of the known species[28] but account for only 3 percent of the identified endangered species.[29]

The spatial scale of the Act was intended to be predominantly national, comprehensively protecting species across ownership boundaries in an extraordinary attempt at national self-restraint.[30] However, because species on the verge of extinction are often limited to small tracts of land, the ESA (sections 7 and 10) limits concern to the applicant's property

22. J.B. Ruhl, *Regional Habitat Conservation Planning Under the Endangered Species Act: Pushing the Legal and Practical Limits of Species Protection*, 23 LAND USE & ENVT. L. REV. 535, 545 (1992).

23. Rohlf, *supra* note 20, at 279 (citing *North Slope Borough v. Andrus*, 486 F. Supp. 326 (D.C.D. 1979)).

24. *Id.*

25. EDWARD O. WILSON, BIODIVERSITY 8-10 (1988).

26. 16 U.S.C. §1537(1994).

27. Kubasek & Brown, *supra* note 12, at 8.

28. WILSON, *supra* note 25, at 4-5.

29. Beattie, *supra* note 8; REPORT TO CONGRESS, *supra* note 18, at 30. *But see*, Robert E. Gordon, *Saving Endangered Species: What's Really Happening?* AMC J., June 1994, 6, 7; Bethell, *supra* note 6, at 20.

30. Patlis, *supra* note 10, at 75; *see also* Oliver Houck, *Reflections on The Endangered Species Act*, 25 ENVTL. L. 689 (1995).

boundary, a scale which may be unrelated to biogeographic constraints.[31] This presents a serious difficulty between the apparent intent of the Act and the ecology of endangered species. In light of the large-scale importance of metapopulations with respect to buffering impacts, even species which appear to be locally stable may not be adequately protected.[32]

The FWS and National Marine Fisheries Service (NMFS) have maintained nearly 40 percent of listed species in stable or improving condition.[33] This success has been possible because the ESA is not limited to the myopic preservation of species (claims to the contrary notwithstanding).[34] Rather, the Act is implemented at spatial scales which reflect the ecology of the species.[35]

Conflicts of Implementation

Although individual properties are often small, two-thirds of the United States is privately owned. Over one-third of all endangered species are found exclusively on private property, and about three-quarters of listed species rely on habitat found on these lands.[36] Therefore, it is surprising that the conflicts between ESA and property owners are rare.[37] Only 0.054% of some 100,000 consultations have yielded jeopardy opinions which halted the federal actions.[38] From 1983-94 there were four cases in which injunctions stopped or delayed activity on nonfederal lands as posing a threat to endangered species that were under FWS protection.[39] Although some factions have framed the debate as a trade-off between species and jobs,[40] most of the accounts used to create this win-lose scenario are demonstrably false.[41]

The implementation of the Act typically begins with a localized remnant of a species, and the presumption seems to be that as the species recovers, its range expands until the spatial scale assures survival. Thus, the spatial scale of the ESA may be very large, including many private

31. Ruhl, *supra* note 22, at 545.
32. Rohlf, *supra* note 20, at 277.
33. *Id.*
34. *Id.*; Losos, *supra* note 5, at 333-34.
35. Patlis, *supra* note 10, at 35; Ruhl, *supra* note 22, at 536.
36. Houck, *supra* note 30, at 642.
37. *SEE* U.S. FISH AND WILDLIFE SERVICE, FACTS ABOUT THE ENDANGERED SPECIES ACT (1995) [hereinafter FACTS ABOUT THE ESA].
38. *Id.*; Houck, *supra* note 30, at 642.
39. GENERAL ACCOUNTING OFFICE, ENDANGERED SPECIES ACT: INFORMATION ON SPECIES PROTECTION ON NONFEDERAL LANDS, 13-14 (Dec. 1994).
40. Losos, *supra* note 5, at 335-36.
41. *See generally* FACTS ABOUT THE ESA, *supra* note 37.

property owners. Indeed, the Department of Interior (DOI) defends small land exemptions by arguing that most species will not survive on small tracts of land.[42] However, while temperate-zone species show less endemism than tropical life-forms, there is no guarantee that a fully recovered species will not exist entirely on the property owned by a single individual.

The spatial elements of the ESA and private property give rise to the conflict of scale, wherein individual property owners perceive their endeavors to be of nominal impact, but the nation's biological wealth is absolutely dependent on the aggregated actions of individual owners.[43] Simply put, the interests of the nation are profoundly interwoven with the actions of individuals. As our population expanded into the last frontiers, the capacity of a property owner to act as an autonomous agent isolated from the public good was lost. This spatial reality leads us to a consideration of the element of complexity or connectedness, a vital parameter in ecological systems.

THE CONNECTEDNESS SCALE

Conflicts of Intent

Although the ESA explicitly includes ecosystems only in the preamble to the Act, some analysts have argued that protecting species was only intended as a means to the ends of preserving biodiversity and ecosystem wellbeing.[44] Judicial interpretation and regulatory obligation in this regard were slow in coming,[45] but there has been acknowledgment of the role of ecosystems in the protection of biological diversity.[46] The 1978 Report of the House Committee on Merchant Marine and Fisheries stated that, "the ultimate goal of the Act is the conservation of the ecosystem on which all species, whether endangered or not, depend for survival,"[47] and this notion has been formalized through a FWS and NMFS joint policy statement.[48] Recently, some conservation biologists have criticized the Act for

42. Mary Helen Thompson, *Administration Proposes Endangered Species Act Exemptions for Small Landowners; "Guideposts for Reform" Would Give More Authority to States,* U.S. DEP'T OF THE INTERIOR NEW RELEASE Mar. 6, 1995, at 2.

43. Beattie, *supra* note 8, at 9.

44. Patlis, *supra* note 10, at 43.

45. *Id.*

46. Kubasek & Brown, *supra* note 12, at 8; REPORT TO CONGRESS, *supra* note 18, at 20.

47. *Endangered Species, Hearings on H.R. 10883 Before the Subcomm. on Fisheries and Wildlife Conservation and the Env't of the House Comm. on Merchant Marine and Fisheries,* 95th Cong. (1978)

48. U.S. Fish and Wildlife Service (last modified Mar. 20, 1997) <http://www.fws.gov>.

not focusing on the "larger picture" of ecosystems[49] However, given our relatively poor understanding of ecosystem processes, the roles of various species, and even what constitutes an "ecosystem,"[50] the protection of indicator and umbrella species[51] may provide the optimal balance between preserving that which we can define and that which ultimately sustains an ecosystem.

The connections between ourselves and other species are complex but generally fall into three categories: ecological services, marketable goods, and cultural context. The intent of the ESA appears to recognize the first two connections. As noted by Mann and Plummer, "the web of species around us helps generate soil, regulate fresh water supplies, dispose of waste, and maintain the quality of the atmosphere. Pillaging nature to the point where it cannot perform these functions is dangerously foolish."[52] Our direct dependence on biodiversity via the utilitarian value of food and medicine is incontrovertible.[53] Perhaps the least resolved but most compelling arguments are ethical and spiritual.[54] In a succinct integration of these notions into a single framework, the National Wildlife Federation argues that protecting species is part of our civic responsibility.[55]

Conflicts of Implementation

Species, endangered or not, represent a form of common property, or public trust, which connects their "owners" with complex obligations that may conflict with the private property upon which these species are found. Great bodies of law in this area revolve around an ethic of moderation, proportionality, prudence, and responsibility to others who are entitled to share in a common resource.[56] In ecological terms, the implementation of the ESA appears to be reductionistic, with only an implicit recognition that biodiversity cannot be understood or managed as parts. However, even though protecting species does not assure the preservation

49. Losos, *supra* note 5, at 333-34.

50. ALLEN & HOEKSTRA, *supra* note 3, at 53.

51. Patlis, *supra* note 10, at 39-42.

52. Charles C. Mann & Mark L. Plummer, *The Butterfly Problem,* ATLANTIC MONTHLY, Jan. 1992, at 47, 51.

53. WILSON, *supra* note 25, at 3, 15.

54. *See, e.g.,* LAWRENCE E. JOHNSON, A MORALLY DEEP WORLD: AN ESSAY ON MORAL SIGNIFICANCE AND ENVIRONMENTAL ETHICS (1991); Mann & Plummer, *supra* note 52, at 51; NATIONAL WILDLIFE FED'N, *supra* note 19, at 3.

55. NATIONAL WILDLIFE FED'N, *supra* note 19, at 2.

56. *See* Carol M. Rose, *Given-ness and Gift: Property and the Quest for Environmental Ethics,* 24 ENVTL. L. 1 (1994).

of the affected ecosystems,[57] given the interconnections among components, preserving the "weak link" in the chain may be an effective means of sustaining otherwise intractably complex systems.

Beattie has argued that endangered species are the symptoms of one of the most difficult and critical environmental problems that humans have ever faced, a position echoed by dozens of scientists.[58] While the cause and extent of global warming, ozone holes, and carcinogenic contaminants provide rich fodder for scientific debate, there appears to be no serious dissension regarding the reality and impacts of the biodiversity crisis. In the words of Wilson, "If the message of the ESA is that the miners' canaries are about to die and that people might want to change the way they do their mining, the bio-phobic response is: kill the canaries. The best scientific evidence available suggests that this is a risky answer."[59]

Thus, to the extent that we are dependent on a biologically rich world, the implementation of the ESA would not appear to be in conflict with human interests. However, this presumes that connections between our human and ecosystem wellbeing, vis-a-vis species, are independent of time and space. In actuality, interdependencies increase with our spatiotemporal perspective. For example, my immediate happiness is unlikely to diminish with yesterday's extinction, but the condition of my children may become intimately connected to this loss in ways we cannot predict. Moreover, while discounting the future may be a defensible strategy when applied in an economic context, it is not at all clear that we can discount moral value in this manner.

In this light, the implementation of the ESA is not the problem. That is, endangered species are warning flags and it is our awareness of environmental degradation, not its occurrence, that is evoked by the ESA. To build on the argument of Beattie, we can choose to rescind the ESA but we can not repeal the laws of nature or deny the loss of species — there are essential limits to anthropogenic alterations.[60]

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57. *See* James R. Karr, *Biological Integrity and the Goal of Environmental Legislation: Lessons for Conservation Biology*, 4 CONSERVATION BIOLOGY 244 (1990).

58. Beattie, *supra* note 8, at 6, 9.

59. Wilson, *supra* note 7.

60. Beattie, *supra* note 15, at 6, 9.

A SUMMARY OF SCALE-BASED CONFLICTS

At least three perspectives (property owner, society, and biocentrist) can be brought to bear on the issues related to the ESA and private property. Although rational positions can be derived from the scale of each observer, their essential focus changes with scale.

From the perspective of the private property owner, the protection of an endangered species can involve the potential of a Fifth Amendment taking (e.g., the taking of the right to convert a habitat into a golf course). From this perspective, it makes sense to pit the species' commodity value against that of the proposed action.[61] However, including economic parameters in the listing process is ultimately nonsensical.[62] The endangered status of a species is not a function of whether it interferes with profits. Recent attempts by Congress to avoid discovering the condition of species by eliminating the National Biological Survey or prohibiting it from using volunteers are similarly irrational.[63] What makes sense is the existing opportunity to adapt the implementation of the ESA to avoid financially devastating impacts to private owners. Critical habitat can be excluded on social and economic grounds, unless it would cause extinction.[64]

The private property owner must bear the burden of protecting a species for the benefit of society, while receiving no direct compensation for this service. Individualizing costs while collectivizing the benefits is the basis for the "tragedy of the commons," which may lead to the destruction of the common resource.[65] Given that the uncertain anthropocentric benefits of protecting any particular species are spatiotemporally diffuse, it is not surprising that a means for compensating private property owners has yet to be developed. Such a system must take into account a complex assortment of issues, not the least of which is whether payment should be considered for *any* diminishment of economic value or whether some losses are a reasonable consequence of living in a human and biological community.[66]

The demands for compensation by a private property owner who views compliance with the ESA as a Fifth Amendment constitutional "tak-

61. Mann & Plummer, *supra* note 52, at 65; Wilson, *supra* note 7, at 464.
62. Losos, *supra* note 5, at 335.
63. Babbitt, *supra* note 13, at 356.
64. Rohlf, *supra* note 20, at 279; Losos, *supra* note 5, at 334.
65. Mann & Plummer, *supra* note 52, at 51; Rose, *supra* note 56, at 7 (citing Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968)).
66. Kubasek & Browne, *supra* note 12.

ing" of prospective profits by hindering activities would seem to be reasonable from the individual's perspective.[67] However, as the perspective shifts to a social scale, this notion may collapse. Such individual claims would seem to be more than offset by the tens of billions of dollars provided by federal subsidies to private property owners. Direct support for development of private property (e.g., coastal housing developments, ski resorts, etc.) is considerable, but this subsidy is relatively modest compared with the massive tax credits to private property owners, which amounted to $74.4 billion in 1994.[68]

From a social perspective, the actions of the private property owner leading to an extinction may be perceived as a permanent "taking" of common property (i.e., the notion of the ESA section 9 taking). From a national perspective, the Act adopts a broad anthropocentric position in asserting that "[endangered] species are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." As we shall see, however, the ESA appears to capture much more than just instrumental value. Ultimately, the social perspective is utilitarian — we attempt to garner the greatest good for the greatest number. Our social and historical biases orient our utilitarianism to monetary units, which provide a uniform, if not entirely satisfactory, means of measuring value.

While the economic analysis of the ESA from a public perspective is surely one of the most complex analytical tasks of our day, even basic budgetary issues are fraught with confusion.[69] Often, the necessary context is lacking with the most dramatic economic impacts of the ESA paling in comparison to the downsizing of corporate America; the spotted owl may cost 9,000 jobs by 2010 — IBM cut 36,000 jobs in 1994.[70] Notions that the Act "demands a significant share of a federal budget"[71] are unfounded. Over the last two decades, on an annual basis the FWS and NMFS have never spent more on maintaining our biological infrastructure through the ESA than the cost of building two to four miles of federal interstate highway in the name of maintaining our transportation infrastructure.[72]

Our government has allocated about 2 percent of the funds needed to conduct recovery plans for all listed species.[73] The distribution of these

67. Mann & Plummer, *supra* note 52, at 65; Wilson, *supra* note 7, at 464.
68. Houck, *supra* note 30, at 697.
69. *See, e.g.*, Gordon, *supra* note 29, at 7.
70. Watkins, *supra* note 14, at 38-39.
71. Ruhl, *supra* note 22, at 3.
72. Watkins, *supra* note 14, at 41; NATIONAL WILDLIFE FED'N, *supra* note 19, at 30.
73. Kubasek & Browne, *supra* note 12, at 15.

limited funds is extremely skewed to the charismatic species; some 270 plants and 89 invertebrates received just 5 percent of total funding.[74] One might argue that these allocations accurately reflect public concern, except that the federal funding for all endangered species is just 2.5 percent of the value our society places on a single endangered species, the whooping crane.[75] Based on this economic analysis, the most expensive recovery plan, which involves the green and loggerhead sea turtles, has a cost that is just 10 percent of our society's perceived value of the whooping crane, the only species for which such information is available.

From a biocentric perspective, many philosophers, including the preeminent conservation biologist Aldo Leopold, discount any attempts to justify species on economic grounds arguing that, "To ask what a species is good for is the height of ignorance."[76] Although the story of the Pacific yew (a "trash" tree of the Pacific Northwest from which taxol, a potent treatment for breast and ovarian cancers, was derived) suggests the anthropocentric value of some species, Mann and Plummer note that no market will save the Oregon silverspot butterfly — it does not cure cancer, it is not nutritious, and nobody will pay to see it.[77] Although the ESA seems to fall short of explicitly acknowledging the intrinsic value of species, one might conclude that an implicit recognition of moral and spiritual values arises from the denial of purely instrumental values.[78]

According to the Supreme Court, the Act was "a conscious decision by Congress to give endangered species priority over 'primary missions' of federal agencies "and prevent extinction" whatever the cost."[79] As such, it has been argued that the ESA threatens the moral authority of humans by questioning our independence from, and supremacy over, Nature. Clearly, this challenges the outlandish commentators such as Rush Limbaugh who maintain the fanatical position that, "If the owl can't adapt to the superiority of humans, then screw it."[80] While our society explores the notion that species are sacred (with intriguing reflections on the Noah story among others), critics

74. Losos, *supra* note 5, at 224.

75. John R. Stoll & Lee Ann Johnson, *Concepts of Value, Nonmarket Valuation, and the Case of the Whooping Crane*, TRANSACTIONS OF THE N. AM. WILDLIFE AND NAT. RESOURCES CONF. 382, 387 (1984).

76. *See*, Johnson, *supra* note 54 (providing a particularly well-conceived and rigorous analysis of the intrinsic value of species from the perspective of wellbeing interests).

77. Mann & Plummer, *supra* note 52, at 68.

78. Ruhl, *supra* note 22, at 536.

79. Kubasek & Browne, *supra* note 12, at 1 (quoting Tennessee Valley Auth. v. Hill, 437 U.S. 153, 154, 185 (1978)).

80. Beattie, *supra* note 8, at 6, 9.

assert that the ESA fails to recognize the "sanctity" of private property,[81] a remarkable, and as yet unexplained, theological position.

THE SOLUTIONS: INTEGRATION OF SCALES

If the conflicts arising between the ESA and private property owners are a function of the values and concerns that arise from different scales of perception, then it follows that there may be two means for resolving these conflicts. First, it may be possible to implement the ESA in ways that explicitly take into consideration the small-scale concerns of those who own private property. Second, by increasing the scale at which we perceive private property, it may be possible to find the common ground between these lands and the ecosystems upon which all species depend.

Scaling Down the ESA

Although the ESA is, "on its face," a large-scale conceptualization, it is conceivably possible to implement the Act with attention to the unique perspectives of the private property owner. Appropriate mechanisms are possible within the constraints of the Act, and several prototypes have been developed. Although the administration of these mechanisms is, in some cases, problematic, they provide a compelling set of approaches to closing the gap between the perceptual scales.

The most direct means of recognizing the scale of private property is the Small Landowner Exemption, through which the ESA allows hardship exemptions for individuals.[82] The National Wildlife Federation's (NWF) "Community-based Recovery Planning" proposal recommends priority consideration for exempting small, residential property owners from the constraints of the Act.[83] In cases where exemptions are not feasible, such private property owners are provided with compensation through tax incentives and direct assistance.[84] The DOI appears to be amenable to such an approach.[85]

The use of public lands as the sites for preservation and recovery is another direct means of shifting the pressure of protecting endangered species from private property. This approach effectively avoids the "tragedy of the commons" by collectivizing both the costs and benefits. Ac-

81. Kriz, *supra* note 4, at 3092.
82. 16 U.S.C. § 1539(b) (1993); U.S. FISH AND WILDLIFE SERVICE, *supra* note 16.
83. NATIONAL WILDLIFE FED'N, *supra* note 19, at 13-21.
84. *Id.*
85. Thompson, *supra* note 42, at 3.

cording to the DOI, in all cases where appropriate habitats can be found, plans are constructed so that public lands carry the burden of management.[86] Although density transfers and land exchanges may be difficult for small property owners, these indirect means of shifting the burden of the ESA to public lands also can be effective.[87]

The concern of private property owners appears to be, in large part, a function of the perceived "worst case" scenario of confronting the ESA. The fear of private property owners with respect to the ESA has led to the intentional destruction of habitat to prevent colonization by endangered species.[88] As such, proactive implementation via localized planning may reduce the real and perceived risks of future conflicts and avoid the environmental destruction that the Act was intended to prevent. In 1982, Congress created a process within the ESA that allowed the incidental taking of threatened and endangered species under the provisions of the Habitat Conservation Plan (HCP).[89]

In accordance with an HCP, the private property owner is allowed to harm otherwise protected species, as long as such activities do not appreciably diminish the species' survival. While this mechanism has been criticized because it does not prohibit actions which would diminish a species' *recovery*,[90] it represents a tremendous compromise of the underlying principles of the Act in deference to the interests of private property owners. Those who would presumably benefit from HCPs are less than enthusiastic with this approach, as it tends to be perceived as being expensive and slow. As a result, these plans appear to work better for large rather than small landowners.[91] Recognizing these logistical problems, the DOI advocates the use of federal funds to support HCP development to bring the ESA timescale into concordance with that of private property owners.[92] In addition, the integration of federal agencies involved in implementing the ESA through a thirteen-agency Memorandum of Understanding[93] is also intended to accelerate decision-making and avoid the regulatory "freeze" which is particularly onerous for small property owners.[94]

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86. Babbitt, *supra* note 13, at 362.
87. *Id.*
88. Kriz, *supra* note 4, at 3092.
89. Mann & Plummer, *supra* note 52; U.S. Fish and Wildlife Service (last modified Mar. 20, 1997) <http://www.fws.gov>.
90. Rohlf, *supra* note 20, at 278; Babbitt, *supra* note 13, at 366.
91. FACTS ABOUT THE ESA, *supra* note 37 (np.).
92. Babbitt, *supra* note 13, at 365.
93. Patlis, *supra* note 10, at 58.
94. Babbitt, *supra* note 13, at 366.

Taking the notion of proactive involvement one step further, the most constructive and potentially powerful means of relating the ESA to the concerns of private property is the development of incentives. The need to shift the emphasis from punishment to positive reinforcement is probably the most widely endorsed modification of the ESA's implementation, with support coming from the National Wildlife Federation, the Audubon Society, the Environmental Defense Fund, the Department of Interior, and the National Wilderness Institute.[95]

Finally, an innovative approach to further assuage the concerns of private property owners has been developed and implemented within the broad provisions of the ESA. Rather than having to endure potentially large, future costs of preservation and restoration, some HCPs allow individuals who possess small tracts on which endangered species may depend to "pre-pay" the costs of mitigation. These fees provide management agencies with necessary funds and provide property owners with a known, up-front cost. For example, a mitigation fee of $600/ac is in effect for the 70,000 ac of Coachella Valley fringe-toed lizard habitat.[96] In the case of Stephen's Kangaroo rat, the mitigation fee for homebuyers was $215, or less than 0.25% of the cost of a new home.[97] This approach straddles the line of compromise between the ESA and private property. From the perspective of the property owner, such mitigation fees may appear to be reverse compensation, but from the collective perspective, the private property owner is charged a small, fixed cost for the privilege of pursuing individual interests which may eventually prevent the recovery of endangered species.

Scaling Up Private Property

Karr asserts that, "Throughout history, the human-environment interaction has generally been significant only at relatively small spatial and temporal scales [but] Mankind's principal interaction with his environment is no longer at the scale of individuals."[98] Conceptually, we can consider three approaches to expanding the scale of private property to close the gap with concerns regarding endangered species. By considering property in the context of long times, large areas, or complex connections, what is good for humans tends to converge with what is good for other species.

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95. NATIONAL WILDLIFE FED'N, *supra* note 19, at 22; Watkins, *supra* note 14, at 41; Kriz, *supra* note 4, at 3093; Gordon, *supra* note 29, at 8.

96. REPORT TO CONGRESS, *supra* note 18, at 29.

97. *Id.*

98. Karr, *supra* note 57, at 248.

With respect to time, the ESA includes mechanisms that expand the temporal dimension beyond the lifetime of the private property owner. An HCP can apply to land for decades,[99] allowing a measure of security for both the individual and the species. To balance individual rights with social obligations, perhaps it is valuable to borrow a page from the National Environmental Policy Act, which accepts the environment as a form of property. However, this property is viewed as a trusteeship with obligations between generations.[100] Species are part of the American heritage, and we can no more justify generating a massive environmental deficit than we can rationalize passing along an excessive monetary debt.[101] In still more familiar terms, conflicts between private property and endangered species would seem to be substantially diminished if we took seriously the notion that the land is not something we inherit from our ancestors but something that we borrow from our children.[102]

In terms of expanding our perceptions of private property along the spatial dimension, it is essential to understand that the American frontier is closed — the option of moving to new lands should the environment become unable to support us is no longer viable.[103] This represents a tremendous change in the manner in which our society perceives property. As noted by Mann and Plummer, "Until recent decades, Americans were untroubled by such questions. The nation was still empty [and] there seemed no need to choose between a species and economic growth. But now the country's empty corners are filling up, and biologists warn that in the next decade or two the fate of thousands of species will be decided."[104]

Again the ESA provides means for expanding the spatial scope of the property owner. Regional HCPs cover multiple species across entire landscapes.[105] This approach is cumbersome, as it necessarily involves many people and demands informed community support,[106] but such may be the price of conducting the business of government in a crowded world. Ironically, this approach has been favored by both land developers and environmentalists, with the former being cynically accused of attempting to avoid the ESA and the latter trying to enforce its

99. U.S. Fish and Wildlife Service (last modified Mar. 20, 1997) <http://www.fws.gov>.

100. Rose, *supra* note 56, at 26.

101. Watkins, *supra* note 14, at 41; NATIONAL WILDLIFE FED'N, *supra* note 19, at 30.

102. Rose, *supra* note 56, at 25.

103. *Id.*; Karr, *supra* note 57, at 248.

104. Mann & Plummer, *supra* note 52, at 48.

105. Kubasek & Browne, *supra* note 12; U.S. Fish and Wildlife Service (last modified Mar. 20, 1997) <http://www.fws.gov>.

106. Ruhl, *supra* note 22, at 550-51.

prohibitions.[107] But given that the potential to act autonomously on our "own land" is an anachronistic luxury, there can be little doubt that, "We have to begin to think of ourselves as inhabitants of ecosystems and begin to live, think, and act accordingly."[108]

Finally, it may be possible, and perhaps even necessary, to re-perceive private property in the context of our increasing intensity of connectedness. Rose provided an incisive summary of the private property and ESA conflict in noting that, "Environmentalism is only a particularly pointed example of a recurring problem in free and democratic governments: the importance of self-imposed citizen restraints for the sake of a common good."[109] The DOI has expressly pursued increased community involvement in the development of plans for habitat conservation and species recovery.[110] The National Wildlife Foundation has called for the evolution of the HCP process into "Community-based Recovery Planning", which fully involves people in the entire process.[111] As difficult as trade-offs between personal and community interests might be to resolve, they are not new or unfamiliar. "Our society has a fundamental premise: Regulatory action taken for a valid public purpose can have consequences that legally inconvenience people and, from time to time, do diminish someone's rights", and in this regard one might view the ESA as an extension of a well-known constraint — planning and zoning laws.[112]

The perception of the species or ecosystems as property, even large-scale or community property, is fiercely resisted by some environmentalists, but the legal and ethical tradition of private property in western culture is a rich source of ideas for narrowing the gap between species preservation and property rights.[113] Contrary to what has become conventional environmental wisdom, not all commons end in tragedy. Species may be preserved through the same mechanisms that sustain these surviving commons — normative appeals regarding thrift, carefulness, overuse, and sustainability. As noted by Rose,

> even individual property revolves around these normative characteristics [of common property]. The individual property-holder relies in great part on the recognition and acquiescence of others, and individual property law assumes a large measure of neighbor-

107. *Id.*
108. Babbitt, *supra* note 13, at 367.
109. Rose, *supra* note 56, at 10.
110. U.S. Fish and Wildlife Service (last modified Mar. 20, 1997) <http://www.fws.gov>.
111. NATIONAL WILDLIFE FED'N, *supra* note 19, at 5.
112. Babbitt, *supra* note 13, at 359.
113. Rose, *supra* note 56, at 30-31.

liness and attentiveness to the needs of others in the use of one's own 'exclusive' property.[114]

At its best, the integration of an individual's private property rights with one's commensurate obligations to the community includes a normative "deep structure" familiar to environmental ethics.

SUMMARY

In an immediate sense, enlightened self-interest would seem to be a compelling argument for protecting our biological infrastructure. We must ask whether the richest nation on earth is more desperately in need of further economic wealth or natural assets.[115] However, it seems that perhaps something more profound than sophisticated self-interest is at hand. There appears to be an ongoing, national examination of what constitutes "self."

Indigenous people tend to view the world in terms of kinship, with species being neither untouchable gifts nor exploitable givens.[116] The distinction between self and other is blurred, such that to harm another is to harm oneself. As our society is coming to realize, there is no place left to move so we are tied to land in a way that has not been true since the rise of western culture, it appears that we are in the process of becoming indigenous. Indeed, Leopold's land ethic was in many ways an ethic of kinship in the tradition of native people; Nature was understood to be an ends in itself, not simply a means to our ends.[117] This sense of "place" by which our modern society seems to be defining itself is a difficult, even painful, process. However, the ESA is central to this struggle, and while its implementation needs ongoing attention, its principles are sound — the wellbeing of humans and other species are inextricably linked.

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114. *Id.* at 27-28 (citing Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73 (1985)).

115. Thompson, *supra* note 42, at 6.

116. Rose, *supra* note 56, at 14-15.

117. *Id.* at 19.

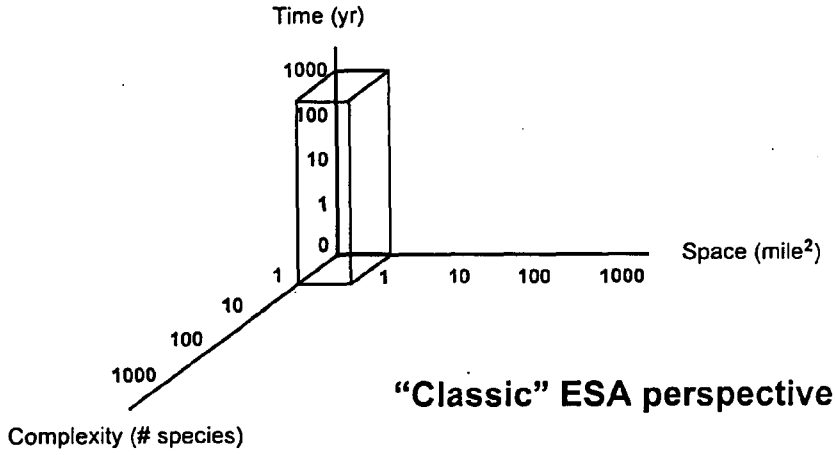

FIGURE 1

Stereotypical portrayal of the "classic" perspective of the ESA, in which a small, remnant population of a single species is protected. Nonoverlapping volumes in this figure, as compared with Figs. 3 and 4, suggest the potential for conflict between those holding such perspectives in the classical implementation of the ESA.

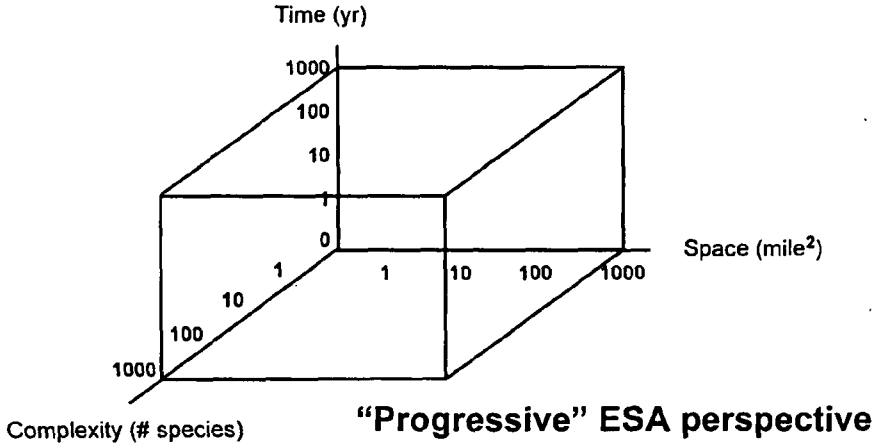

FIGURE 2

Stereotypical portrayal of the "classic" perspective of the ESA, in which a recovering species is managed across its full range and in the context of the entire biotic community. Nonoverlapping volumes in this figure, as compared with Figs. 3 and 4, suggest the potential for conflict between those holding such perspectives in the progressive implementation of the ESA.

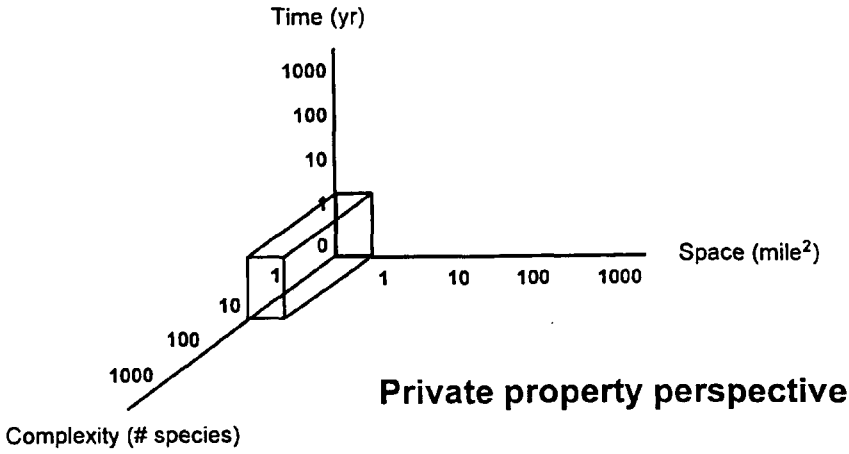

FIGURE 3

Stereotypical portrayal of the private property perspective of the land, in which an owner occupies property for noncommercial uses. Nonoverlapping volumes in this figure, as compared with Figs. 1 and 2, suggest the potential for conflict between those holding such perspectives in the progressive implementation of the ESA.

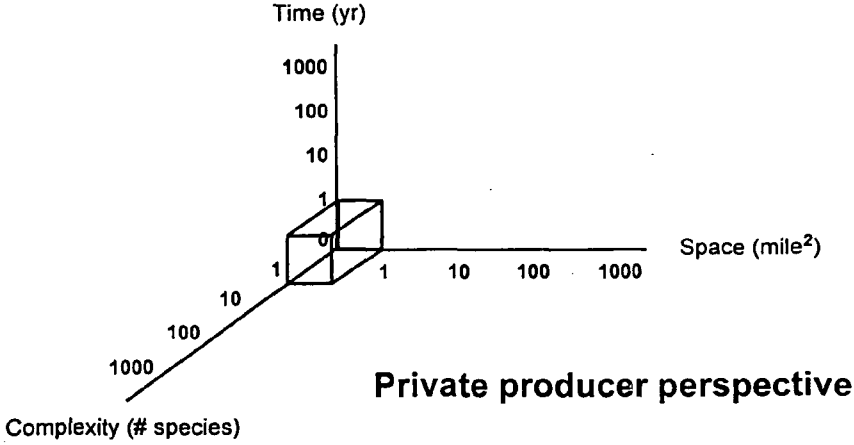

FIGURE 4

Stereotypical portrayal of the private producer perspective of the land, in which an owner produces a commodity on the property. Nonoverlapping volumes in this figure, as compared with Figs. 1 and 2, suggest the potential for conflict between those holding such perspectives in the progressive implementation of the ESA.