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Is the Endangered Species Act Ecopragmatic?

J.B. Ruhl

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INTRODUCTION

Conflicting visions of what the Endangered Species Act (ESA)[1] is and what it should be abound. Is it a tenacious pit bull of environmental law, unyielding in its demand for species protection? Should it be? Or, is it a paper tiger, bending its purported authority at the slightest hint of political or economic pressure? Should it be?

In fact, the ESA is a little of both—something like a pit bull on a firm leash. It has stopped a massive federal spending project dead in its tracks to protect the endurance of a small fish,[2] yet it has accommodated well-planned land development around the nation with a measure of flexibility not characteristic of many other environmental laws.[3] Indeed, I daresay that the ESA, in its most shining moments, is remarkably eco-pragmatic. And, I contend, it should be even more so. This Article explains why.

In *Eco-pragmatism*,[4] Professor Dan Farber lays out an

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1. 16 U.S.C. §§ 1531-1544 (2000). This Article is not intended to provide a comprehensive overview of the law, policy, and practice under the ESA. For that background, see MICHAEL J. BEAN & MELANIE ROWLAND, THE EVOLUTION OF NATIONAL WILDLIFE LAW 193-276 (3d ed. 1997); ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES (Donald C. Baur & William Robert Irvin eds., 2002); STANFORD ENVTL. LAW SOC'Y, THE ENDANGERED SPECIES ACT (2001); TONY A. SULLINS, ESA: ENDANGERED SPECIES ACT (2001).

2. *See* Tenn. Valley Auth. v. Hill, 437 U.S. 153, 172-73 (1978). Despite substantial equitable considerations, the Court refused to relieve the Tennessee Valley Authority from its duty under the ESA not to allow its construction and operation of a dam that would jeopardize the continued existence of the endangered snail darter. *Id.* The Court observed that the "plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost," *id.* at 184, and that in this regard the ESA "admits of no exception." *Id.* at 173. For thoughtful accounts of the case, including its historical preludes and aftermath, see Oliver Houck, *Unfinished Stories*, 73 U. COLO. L. REV. 867, 921-42 (2002); Zygmunt J.B. Plater, *Environmental Law in the Political Ecosystem—Coping With the Reality of Politics*, 19 PACE ENVTL. L. REV. 423, 423-71 (2002). For further description of the case and the "no jeopardy" mandate, see *infra* text accompanying notes 108-29.

3. Specifically, the Habitat Conservation Plan program allows development projects that might harm a species protected under the ESA to proceed with the intended activity under conditions imposed through a plan approved by the federal government. *See* J.B. Ruhl, *How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act "HCP" Permits for Real Estate Development*, 5 ENVTL. LAW. 345, 376-96 (1999). For further discussion of the Habitat Conservation Plan program, see *infra* text accompanying notes 207-28.

4. DANIEL A. FARBER, ECO-PRAGMATISM (1999).

agenda for reshaping environmental policy dialogue around a new amalgam of values and instruments, one free of the bipolar extremism that has saddled the development of environmental law and policy for decades.[5] He asks us to walk away from the ongoing war between the "tree huggers" and the "bean counters,"[6] and to adopt in its place a process for resolving environmental policy issues that depends fundamentally on the philosophy of pragmatism as its guiding light.[7]

Farber found a convert in me, and I suspect in many others. Long disenchanted with the ability of conventional environmental policy warfare to tackle the compelling issues of our future, such as climate change, invasive species, urban sprawl, fisheries depletion, property rights, and watershed management, I was a soul lost in the middle, a soul looking for a religion to give my position in the middle meaning and purpose. *Eco-pragmatism* inspired me to delve more deeply into the philosophy of pragmatism and to consider its applications in settings beyond the pollution control context Farber used to explore its virtues as a foundation for environmental policy. My background is steeped in the ESA and similar natural resource assessment and protection laws such as the National Environmental Protection Act and section 404 of the Clean Water Act. A bit like an apostle, then, I attempted to spread the word of eco-pragmatism throughout that segment of environmental policy.[8]

Enough of the Biblical metaphors! My purpose here is to refine eco-pragmatism in the particular setting of the ESA. The ESA presents a particularly challenging case for eco-pragmatism. As its name implies, the ESA deals with a tragic set of circumstances—the possibility that humans have caused

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5. The development of environmental law and policy has been and continues to be characterized by extremist politics. Rena I. Steinzor, *"You Just Don't Understand!"—The Right and Left in Conversation*, 32 ENVTL. L. REP. 11109, 11109 (2002) ("[T]he views of stakeholders are polarized, and much time is spent engaging in damaging guerilla attacks on the other side.").

6. FARBER, *supra* note 4, at 35-69 (describing the two camps). *See generally* Christopher H. Schroeder, *Prophets, Priests, and Pragmatists*, 87 MINN. L. REV. 1065 (2003) (corresponding "prophets" to Farber's tree huggers and "priests" to Farber's bean counters).

7. FARBER, *supra* note 4, at 39-44, 93-132.

8. *See* J.B. Ruhl, *Working Both (Positivist) Ends Toward a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522, 542-46 (2000) (book review) (applying Farber's ideas to ecosystem management issues).

other species to vanish from the planet.[9] That possibility does not immediately cry out for pragmatic solutions, but rather invokes visions of radical emergency care, measures to be taken now with questions asked later. There are other matters to take into consideration, however. Is no expense on behalf of endangered species too great? Are human rights suspended in order to protect the rights of other species? Are all species entitled to this drastic remedial care? Might helping one species limit our options to help others? These are pragmatic questions, and they deserve answers before the lawyers, biologists, and money are mobilized. So, notwithstanding its very important mission, the ESA must accommodate *some* room for balanced, practical approaches. The question is how much.

Part I of this Article lays out the foundations of eco-pragmatism as a general approach to questions of that sort, particularly in resource conservation settings.[10] Fusing Farber's treatment of the topic with the work of other environmental pragmatist philosophers, and taking into consideration critiques of both, five core principles emerge to define the school of thought.[11] Three principles define the instrumental tools of eco-pragmatism. First, it is necessary to define a set of baseline environmental conditions that will be protected to the maximum extent feasible, and then to define a practical behavioral mandate to fulfill that baseline demand.[12] Pragmatic reasons may help to define this bottom line, but once defined the line is maintained unyieldingly as far as technology and money can carry the effort. Second, as a background decision-making principle to use in the realm where pragmatic solutions are tolerated, we adopt a variant of what is commonly

9. The statute expresses as one of its central findings that "various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation." 16 U.S.C. § 1531(a)(1) (2000).

10. *See infra* text accompanying notes 32-101.

11. The groundwork for Part I of this Article is found in two of my prior expositions on eco-pragmatism and the "radical middle." *See* J.B. Ruhl, *A Manifesto for the Radical Middle*, 38 IDAHO L. REV. 385, 388-406 (2002); Ruhl, *supra* note 8, 542-46. Though borrowing from those sources, the presentation in Part I of this Article refines and improves upon the general description of eco-pragmatism found therein. Moreover, although each of the five components I lay out in this Article is found in one form or another in Farber's treatment of the subject, the way in which I structure the overall package, and the emphasis I place on different components, differs from his approach in subtle but not insignificant ways.

12. *See infra* text accompanying notes 41-50.

known as the precautionary principle.[13] In short, we err on the side of safeguarding the environmental baseline. The precautionary principle, however, is not self-executing—its magnitude, triggering events, and limits must be defined. One opposing force, the third pillar of eco-pragmatism, introduces impact assessment procedures into the case-specific, decision-making process.[14] Where our knowledge base allows us to be comfortable that crossing the baseline is a low risk, and that the consequences of different alternatives are reasonably well defined and susceptible to comparison, the precautionary principle can be relaxed in favor of basing decisions on impact assessment procedures such as cost-benefit analysis.

In addition to these three instrumental principles, eco-pragmatism emphasizes a particular model of implementation. The fourth principle of eco-pragmatism—empiricism—thus speaks to each of the prior three.[15] Pragmatism is set apart from positivist philosophies by its reliance on experience and empirical knowledge.[16] The environmental baseline, precautionary principle, and impact assessment components, therefore, must be guided by those same lights of knowledge, and not become merely disguises for one or the other environmental extreme. Adaptive management, the fifth pillar of eco-pragmatism, is the dynamic decision-making process that administers the unwieldy apparatus.[17] Adaptive management relies on more decentralized, experimentalist, fluid decision-making instruments than are typical of conventional environmental policy.[18]

Defined as such, eco-pragmatism finds few friends in the conventional opposing camps of environmental policy.[19]

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13. *See infra* text accompanying notes 51-62.

14. *See infra* text accompanying notes 63-72.

15. *See infra* text accompanying notes 73-81.

16. *See* FARBER, *supra* note 4, at 9-10; *see also infra* text accompanying notes 73-76.

17. *See infra* text accompanying notes 82-101.

18. *See infra* text accompanying notes 82-101.

19. Academic reviews of *Eco-pragmatism* cover the waterfront in terms of criticism and praise. *Compare* Paul Boudreaux, *Environmental Costs, Benefits, and Values: A Review of Daniel A. Farber's Eco-pragmatism*, 13 TUL. ENVTL. L.J. 125, 168 (1999) (faulting *Eco-pragmatism* for lack of detail), Richard A. Epstein, *Too Pragmatic By Half*, 109 YALE L.J. 1639, 1665-66 (2000) (book review) (assigning *Eco-pragmatism* a "mixed review"—"[it] does not fall prey to any of the excesses of environmental[ism]," but also does not sufficiently take into account the strengths of free market environmentalism), Lisa Heinzerling, *Pragmatists and Environmentalists*, 113 HARV. L. REV.

Committed preservationists are repulsed by the accommodation of feasibility and interest balancing while resourcists revile at the prominence of environmental baselines and the precautionary principle.[20] Both sides laud empiricism if it leads to information favoring their positions, though almost no one in either camp is very fond of adaptive management in its purest form.[21] Particularly in a context as prone to policy warfare as has been the ESA, the prospect of widespread endorsement of eco-pragmatism could look awfully dim.

Enter Bruce Babbitt, Secretary of the Department of the Interior (DOI) during the Clinton administration and the person who will receive my vote as the most valuable eco-pragmatist of the 20th century.[22] With all due respect to Farber, Babbitt made it happen, and his unlikely laboratory was the contentious ESA. As Part II of this Article details, Babbitt instituted an agenda of administrative reform of the ESA that accords seamlessly with the eco-pragmatist tenets.[23] During his tenure as DOI Secretary, the agency remained committed to the ESA's environmental baseline through

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1421, 1433 (2000) (book review) (writing that "Farber ignores the transformative potential of law itself"), *and* David Roe, *Green Scholarship*, 3 GREEN BAG 2D 97 (1999) (book review) (criticizing *Eco-pragmatism* on a variety of bases), *with* Stuart Bell, Book Review, 13 J. ENVTL L. 107, 112 (2002) (praising *Eco-pragmatism* for explaining the theory behind and practical application of environmental laws), Calestous Juma, *Courting Success for the Future*, 399 NATURE 653, 654 (1999) (concluding that the "pragmatic approach should lead to an ecological renaissance"), Bryan McDonald, Book Review, 14 SOC'Y & NAT. RESOURCES 545, 546 (2001), Rutherford H. Platt, Book Review, 66 J. AM. PLANNING ASS'N 212, 213 (2000), *and* Christopher H. Schroeder, *Clear Consensus, Ambiguous Commitment*, 98 MICH. L. REV. 1876, 1915 (2000) (book review). For Farber's rejoinder to one of these reviews, see Daniel Farber, *Green Scholarship—An Oxymoron?*, 3 GREEN BAG 2D 231 (2000) (responding to Roe, *supra*). For a thoughtful discussion of environmental pragmatism in juxtaposition to other theories of environmental policy, see Keith Hirokawa, *Some Pragmatic Observations About Radical Critique in Environmental Law*, 21 STAN. ENVTL. L. REV. 225 (2002).

20. *See infra* note 221 and accompanying text. The preservationist/resourcist distinction parallels Farber's tree hugger/bean counter dichotomy. *See* J. Baird Callicott & Karen Mumford, *Ecological Sustainability as a Conservation Concept*, 11 CONSERVATION BIOLOGY 32, 34 (1997).

21. *See infra* note 221 and accompanying text.

22. For comprehensive and thoughtful "insider" accounts of Secretary Babbitt's tenure at the DOI, see John D. Leshy, *The Babbitt Legacy at the Department of the Interior: A Preliminary View*, 31 ENVTL. L. 199 (2001); Joseph L. Sax, *Environmental Law at the Turn of the Century: A Reportorial Fragment of Contemporary History*, 88 CAL. L. REV. 2375 (2000).

23. *See infra* text accompanying notes 102-228.

designation of hundreds of species as endangered and rigorous enforcement of the ESA's core behavioral mandate.[24] It also leaned heavily on the precautionary principle to err on the side of species conservation in many contexts.[25] At the same time, however, a balancing force in the form of case-specific impact assessment emerged through programs such as Habitat Conservation Plans.[26] In all these respects scientific standards grew more rigorous,[27] and adaptive management became the explicit theme of agency implementation of the ESA in many contexts.[28] Overall, Babbitt took the ESA, a statute that was itself in danger of extinction,[29] and turned it into the first environmental law that could fairly be described as being implemented in the vein of eco-pragmatism.

Is this a good thing? I think it is, for two reasons. First, it disproves any idea that the ESA must be conceived, described, and implemented only in purely moralistic terms. The ESA is, unquestionably, motivated by normative concerns, but it is capable of being implemented through pragmatic instruments. Indeed, as I hope to show herein, its normative concerns may be *better* implemented through eco-pragmatism than through continued narrow reliance on the moral underpinnings that motivated the initiative in the first place. Second, eco-pragmatism has breathed new life into the ESA; it rejuvenated it. In so doing, eco-pragmatism has expanded the reach and potential of species conservation. It may no longer roam with the tenacity of a pit bull, but at least it's there in more places and contexts. Overall, the implementation of the ESA within an eco-pragmatic framework (or, as I see it, the discovery of its eco-pragmatic soul) brings what I believe to be a promising new potential to the ESA.

There is one loose end, however, in the form of the "recovery" goal of the ESA.[30] As Part III of this Article explains, the ESA's pronounced purpose is not simply to stave off extinction, but to bring species back to the point of long-term viability. The eco-pragmatic model of the ESA described herein, which reflects its actual implementation, has rescued

24. *See infra* text accompanying notes 201-02.
25. *See infra* text accompanying notes 203-04.
26. *See infra* text accompanying notes 205-06.
27. *See infra* text accompanying note 180.
28. *See infra* text accompanying notes 215-20.
29. *See infra* text accompanying note 201.
30. 16 U.S.C. § 1533(f) (2000).

many species from extinction, but has recovered few to a stable, lasting health.[31] The ESA contains all the switches necessary to turn its "no extinction" baseline into a "promote recovery" baseline, but they simply have not been turned on. Does this expose a soft side to eco-pragmatism, or simply a smart, pragmatic implementation policy? Either view has some merit, and it is not a debate I can close definitively. I suspect, moreover, that the persistence of the issue will provide fuel to detractors of the eco-pragmatic model of the ESA, those who believe it should be the pit bull of environmental law.

Alas, even the post-Babbitt ESA does not provide completely satisfying answers to the eco-pragmatist's quest. It does not quiet all of eco-pragmatism's critics, nor is it even the law this eco-pragmatist would draft were I king; however, it is a good start. Even more so, the way in which it has in recent years been implemented points clearly in the direction of eco-pragmatic solutions. Somewhere down that road may be a new statutory initiative, one more consciously centered on eco-pragmatic approaches. In the meantime, I hope we hold off the extremists and stay the course Babbitt charted for us, for it is fundamentally eco-pragmatic in spirit—and it works.

I. THE FIVE PILLARS OF ECO-PRAGMATISM

The general approach of eco-pragmatism (and of *Eco-pragmatism*) is to meld classical American pragmatist philosophy[32] with modern ecological sciences.[33] The package as

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31. *See infra* text accompanying note 239.

32. Farber has written extensively on the more general philosophy of legal pragmatism. *See e.g.*, Daniel A. Farber, *Legal Pragmatism and the Constitution*, 72 MINN. L. REV. 1331, 1334-78 (1988); Daniel A. Farber, *Parody Lost/Pragmatism Regained: The Ironic History of the Coase Theorem*, 83 VA. L. REV. 397, 421-28 (1997); Daniel A. Farber, *Reinventing Brandeis: Legal Pragmatism for the Twenty-First Century*, 1995 U. ILL. L. REV. 163. Legal pragmatism "highlights the connection between the new turn in legal thought and the American pragmatist philosophers," such as Charles Pierce, William James, Josiah Royce, George Herbert Mead, John Dewey, and their contemporaries, who began forging the theory in the late 1800s. Farber, *Legal Pragmatism and the Constitution*, *supra*, at 1337. *Eco-pragmatism* represents Farber's application of legal pragmatism in the environmental law and policy context. A group of path-breaking modern environmental philosophers have tapped into the classical American pragmatism foundations in ways consistent with Farber's description of eco-pragmatism. *See* ENVIRONMENTAL PRAGMATISM (Andrew Light & Eric Katz eds., 1996) (containing a collection of essays that contribute to an understanding of pragmatism as it relates to environmental philosophy). It is important to note that classical American pragmatism, legal pragmatism, and eco-pragmatism are formal philosophies of

a whole is designed to address what Farber describes as the fundamental challenges to environmental law.[34] First, all decisions in environmental law involve some trade-off between costs and benefits in terms of resource allocation and social welfare.[35] How do we know when the costs are too much to bear relative to the benefits? Second, most decisions in environmental law address issues to which some degree of scientific uncertainty attaches.[36] How do we know what to do when we do not know what will happen? Third, even if our policy is based purely on economic factors, we need to establish some minimum level of environmental protection in order to sustain the economy.[37] What is that minimum level of protection? Fourth, all environmental law decisions have consequences in the present and in the future.[38] How should we structure our decision process today so as to fulfill whatever goals we have for the future? Finally, the environment, as a constantly evolving system, will not wait for us to be perfectly happy with our answers to all the preceding questions.[39] How do we know when to promulgate a decision versus when to wait for more information, input, and deliberation before deciding?

Farber and other modern environmental pragmatists outline a decision-making process—a philosophy, to be more precise—that addresses these questions in a way that puts classical American pragmatism into action. In my interpretation of their fused body of work, the approach has five parts, the combination of which defines both the system of instruments for decision making and the medium for their implementation.

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human interaction with environment and experience; they are distinct from the lay conception of "pragmatic" as synonymous with "practical-minded." *See* Kelly A. Parker, *Pragmatism and Environmental Thought*, *in* ENVIRONMENTAL PRAGMATISM, *supra*, at 21.

33. This Article is not a comprehensive primer on ecology. For an excellent lawyers' history of the discipline of ecology and its significant developments in the last century, see Fred P. Bosselman & A. Dan Tarlock, *The Influence of the Ecological Science on American Law: An Introduction*, 69 CHI.-KENT L. REV. 847, 849-73 (1994).

34. *See* FARBER, *supra* note 4, at 4-6, 13.

35. *See id.* at 3-4.

36. *See id.* at 5.

37. *See id.* at 6.

38. *See id.*

39. *See id.*

A. SYSTEM OF INSTRUMENTS

If eco-pragmatism catches on, the term itself may come to signify an instrument of decision making, the way people conceive of cost-benefit analysis. As it stands in this early stage of development, eco-pragmatism is best described as a system of three instruments: (1) the environmental baseline, (2) the precautionary principle, and (3) the impact assessment procedure.[40] What makes the system eco-pragmatic is the way these three components fit and operate together.

1. Drawing the Environmental Baseline

Eco-pragmatism works from the bottom up—that is, by first establishing a baseline from which all regulatory policy flows.[41] This involves two component determinations: first, identify the baseline conditions to be protected, and second, express the practical behavioral directives necessary to ensure such protection.[42] In other words, what do we care about most, and what are we going to do about it? While conventional environmental law scholarship often casts these choices in purely normative, outcome-driven terms, eco-pragmatists bring a process dimension to the question—i.e., it is a matter of how we adopt a baseline that "leave[s] us satisfied with the process of reaching the result."[43] Pragmatism, however, is not synonymous with neutrality. It is more concerned with well-reasoned decision making than with advancing pre-defined political positions.

Farber suggests fulfilling this approach with a strong version of the feasibility analysis used currently in some corners of environmental law.[44] Under his formulation, it is presumed that actions posing a risk to identified baseline conditions, such as human health and, pertinent to this Article, the extinction of species, are impermissible except when required by considerations of feasibility.[45] The environmental baseline, thus, fulfills the concept forged in environmental pragmatism philosophy of the "safe minimum standard," which posits that a natural resource should be protected unless the

40. *See id.* at 12.
41. *See id.*
42. *See id.* at 12-13.
43. *Id.* at 113.
44. *See id.* at 116.
45. *Id.* at 108-14.

costs of preservation violate the floating standard of being "immoderately high."[46] In other words, the opportunity costs of foregone alternatives matter.[47]

Not every natural resource emerges as a baseline condition under this approach. Two filters help us screen resources in this respect. First, other competing values limit how far we would go on behalf of any natural resource. Where the benefits of protecting the natural resource are grossly disproportionate to the costs that doing so imposes on other values, we do not apply the maximum-extent-feasible principle.[48] Most of us would not, for example, protect a species, any species, if we knew the cost to human life would be substantial, or that doing so would jeopardize the existence of a multitude of other species. Second, less significant resources do not receive baseline condition protection. My backyard is not a baseline condition. The Everglades are. We can distinguish between the two based on significance as a resource—its contribution to ecological processes, service value to humans, sensitivity to disturbance, and so on.

Ultimately, these two filters mean that the process of selecting baseline conditions in the form of natural resource protection goals involves normative decisions. Identifying the competing values and the criteria of significance opens the door to normative decisions about what counts and what doesn't, and thus to controversy.[49] The point is that eco-pragmatism (a) demands that we identify the baseline conditions, (b) bases their identification on a pragmatic test for competing values and significance, and (c) once identified, expresses practical *behavioral* directives to ensure the baseline conditions are protected to the maximum extent feasible.

Of course, establishing the baseline conditions and the appropriate behavioral safeguards attached to them does not end the eco-pragmatist's inquiry. While most resources are not baseline conditions, my backyard for example, that does not

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46. *See* Emery N. Castle, *A Pluralistic, Pragmatic and Evolutionary Approach to Natural Resource Management*, *in* ENVIRONMENTAL PRAGMATISM, *supra* note 32, at 231, 246.

47. *See id.*

48. *See* FARBER, *supra* note 4, at 114-16, 131-32.

49. *See* Schroeder, *supra* note 19, at 1881-82 (commenting on Farber's "disproportionate costs proviso" and "insignificance proviso"). My description of the eco-pragmatic baseline principle is a variation on Farber's, influenced by the work of other environmental pragmatists.

mean they are altogether insignificant. Eco-pragmatism, thus, must supply a decision-making framework for what to do with these "ordinary" resources.[50] For that I turn to the precautionary principle and impact assessment methods and, more importantly, how they are conjoined in the system of eco-pragmatic instruments.

2. Institutionalizing the Precautionary Principle

In Farber's version of eco-pragmatism, a guiding principle for resolving questions of doubt on all applications of the feasibility baseline should be the so-called precautionary principle—when in doubt, exercise caution.[51] The precautionary principle is no stranger to environmental policy thought, and Farber is not alone in his calling for its explicit and widespread adoption as a central principle of environmental law and its eco-pragmatist baseline.[52] In the pragmatist spirit, however, I suggest that more deliberation over the role of the precautionary principle is called for.

Although many syntactic versions of the precautionary principle exist throughout the laws of many nations and in the text of many international treaties,[53] the 1992 Rio Declaration of the United Nations Conference on Environment and Development provides a useful prototype:[54]

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[55]

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50. For thoughts on how environmental policy loses track of "ordinary nature" and why it should not, see Holly Doremus, *Biodiversity and the Challenge of Saving the Ordinary*, 38 IDAHO L. REV. 325, 333-54 (2002), and Holly Doremus, *The Special Importance of Ordinary Places*, 23 ENVIRONS 3, 3-16 (2000).

51. *See* FARBER, *supra* note 4, at 170-74.

52. *See, e.g.*, PERSPECTIVES ON THE PRECAUTIONARY PRINCIPLE (Ronnie Harding & Elizabeth Fisher eds., 1999); PROTECTING PUBLIC HEALTH & THE ENVIRONMENT: IMPLEMENTING THE PRECAUTIONARY PRINCIPLE (Carolyn Raffensperger & Joel Tickner eds., 1999) (providing an overview of the precautionary principle as applied in national and international law contexts).

53. *See* Christopher D. Stone, *Is There a Precautionary Principle?*, 31 ENVTL. L. REP. 10790, 10790-91 (2001) (describing and explaining different versions).

54. U.N. CONFERENCE ON ENV'T & DEV., AGENDA 21: THE UNITED NATIONS PROGRAMME OF ACTION FROM RIO at 9 (Rio Declaration on Environment and Development), U.N. Sales No. E.93.I.11 (1993).

55. *Id.* at 10 (Principle 15). There are numerous variations on this theme,

Ignorance, in other words, should not justify the decision either to move forward with a proposed action that might threaten the environment, or to not regulate an activity on behalf of the environment.[56]

Clearly, "this idea is supposed to run counter to standard decision-making procedures (e.g., cost-benefit analysis), in which possible but unproven causal connections do not count."[57] As such, it has become the darling of preservationists, because it allows them to disguise their moral positivism as a kind of reasoned, neutral formula for decision making. Indeed, in theory the principle does lend itself to a technically-minded interpretation: We are to evaluate the magnitude and nature of potential risks to the environment, assess the body of scientific evidence about those risks and their causes, and devise cost-effective measures when the potential risk is high and the evidence of causation is incomplete.[58] The only normative component in that expression of the framework is the decision to favor the environment (as opposed, say, to the economy) when the stated conditions exist.

In practice, however, preservationists almost always get around to fitting these concepts around an idea that would more appropriately be called the "catastrophe principle."[59] Under this application, if we can identify a proposed activity

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with different emphases on the level of risk, the type of harm, the degree of uncertainty, and the character of the response. Stone, *supra* note 53, at 10799. This variety of expressions, and the failure of any one to rise to dominance, has led one commentator to conclude that "the precautionary principle—both the law and the literature—is in disarray. To begin with, there is no 'the' precautionary principle there. There are droves of different versions, none of which is particularly helpful. . . . I am questioning the claim that there is *a* precautionary principle." *Id.*

56. *See* Gail Charnley & E. Donald Elliott, *Risk Versus Precaution: Environmental Law and Public Health Protection*, 32 ENVTL. L. REP. 10363, 10363 (2002) ("Support for the precautionary principle is motivated in part by a desire for a more agile legal system that does not use incomplete science as a reason to postpone regulating.").

57. Neil A. Manson, *Formulating the Precautionary Principle*, 24 ENVTL. ETHICS 263, 264 (2002); *see also* Charnley & Elliott, *supra* note 56, at 10364 ("The rise of the precautionary principle can be viewed as an objection to the U.S. legal tradition of extensive administrative law requirements and court review of the factual basis of government decisions about environmental risks.").

58. *See* Manson, *supra* note 57, at 264-65. Manson does a superb job of articulating the precautionary principle in formal logic terms, showing its embedded formulaic qualities. *See id.*

59. *Id.* at 270.

and an environmental effect such that the environmental effect is catastrophic and it is merely possible that the proposed activity causes the catastrophic environmental effect, then the imposition of the precautionary remedy is justified regardless of the probability that the proposed activity causes the effect.[60] The catastrophe principle, thus, shifts an impossible burden onto the advocates of the proposed activity, making it appear that the preservationists' argument has advanced from "scientific" and "cost-benefit" principles, when in fact they have no intention of ever engaging in such a debate. Indeed, at this extreme the precautionary principle rewards ignorance as much as does incomplete cost-benefit analysis.[61]

Recognizing the folly made possible by that approach, Farber would apply the precautionary principle not based on worst-case scenarios but rather as a burden of proof on regulated entities to demonstrate their activities will do no harm.[62] This fails, however, to answer how speculative the case of harm must be before the regulated entity is relieved of the burden. I agree that such a burden is appropriate when the evidence indicates that the environmental baseline is threatened by the kind of activity a regulated entity contemplates in its proposed action. In that case, the regulated entity should be required to demonstrate that there is something different about its circumstances. For example, if we know a species is endangered, and the evidence strongly indicates that habitat loss in a particular area is the cause, development projects that propose additional habitat loss in the area ought to be subject to this burden of proof.

The point is that the precautionary principle *explicitly* anticipates variable conditions in our knowledge of (1) the threat to the baseline, and (2) the effect of the proposed action and its alternatives. Hence, the burden of proof ought to be variable as well, so that caution has less influence in the decision outcome as the data relevant to the decision become more reliable and robust. Indeed, at some point along that

60. *See id.* (stating a more technical expression of the principle).

61. *See* Charnley & Elliott, *supra* note 56, at 10365 ("There is a danger that if applied in the extreme, the precautionary principle will be used as a license to ignore [the] elements of risk management decisionmaking."); Manson, *supra* note 57, at 274 (warning that the precautionary principle should include "some sort of pledge to continue research, for otherwise the formulation might have the effect of rewarding ignorance").

62. FARBER, *supra* note 4, at 171.

spectrum of information quality the burden should shift to those making the case for exercising caution. To implement this shifting burden I turn to the next component of the eco-pragmatic system of instruments—impact assessment.

3. Integrating Impact Assessment

As much as the environmental baseline and precautionary principle are of primary importance to the eco-pragmatic approach, the rhetoric often associated with them can obscure the need to keep instrumental values in sight.[63] How, in other words, do we keep the tree huggers from running rampant with the baseline and precaution? For this purpose we turn in case-specific decision settings to impact assessment procedures, such as cost-benefit analysis,[64] so as "to ensure we do not allow our commitment to environmental ideals to turn into fanaticism."[65] The trick is to ensure that the instrumental values analysis will only "assist rather than control regulatory decisions."[66] Farber thus nests cost-benefit analysis within the other principles of eco-pragmatism to ensure that the purportedly neutral science of cost-benefit analysis does not lead to decisions that run afoul of important social values—i.e., "our national commitment to the environment."[67]

To that concern I would add that impact assessment analyses, particularly in the context of environmental protection, are immeasurably complicated once indirect effects of a proposed action are considered.[68] Even assuming the direct effects of a proposed action can be reliably calculated, all of the indirect effects cannot be reliably identified and quantified *ex ante*. Simply being aware that indirect effects can occur does not make them any more susceptible to complete identification and quantification. At best, pre-decision review can attempt to cabin the scope of indirect effects analysis, which can be done based only on normative considerations and which produces

63. *See id.* at 113-23, 170-74.

64. For a survey of cost-benefit analysis and related impact assessment procedures, see Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165, 225-38 (1999).

65. FARBER, *supra* note 4, at 119.

66. *Id.* at 122-23.

67. *Id.* at 122.

68. *See, e.g.*, Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1218-19 (5th Cir. 1991) (illustrating the wildly varying outcomes of cost-benefit analysis depending on the defined scope of indirect effects).

only a local sense of overall effects. The nature of indirect effects, however, is that effects of large magnitude can be experienced far away from the substantive, geographic, and temporal locus of the proposed action under study.[69] Anything less than a global analysis thus leaves open the possibility that a significant indirect effect, even if it could be predicted (which it cannot), will not enter the cost-benefit accounting. In most cases, however, a truly global analysis would be far too time consuming and costly to allow decision making to proceed in due course, and it would probably get many estimates of effects wrong in any event. Hence, the tighter the scope of impact analysis is cabined, the higher the potential for missing these

69. This quality is true of any complex system, such as the environment. Although the study of such systems can be quite technical in substance, many of the recent and most influential works in the field focus on applications of the technical theory to real world phenomena, such as ecosystems and biological evolution. *See, e.g.*, JOHN L. CASTI, COMPLEXIFICATION: EXPLAINING THE PARADOXICAL WORLD THROUGH THE SCIENCE OF SURPRISE (1994); JACK COHEN & IAN STEWART, THE COLLAPSE OF CHAOS: DISCOVERING SIMPLICITY IN A COMPLEX WORLD (1994); MURRAY GELL-MANN, THE QUARK AND THE JAGUAR: ADVENTURES IN THE SIMPLE AND THE COMPLEX (1994); BRIAN GOODWIN, HOW THE LEOPARD CHANGED ITS SPOTS: THE EVOLUTION OF COMPLEXITY (1994); JOHN HOLLAND, HIDDEN ORDER: HOW ADAPTATION BUILDS COMPLEXITY (1995); STEVEN JOHNSON, EMERGENCE: THE CONNECTED LIVES OF ANTS, BRAINS, CITIES, AND SOFTWARE (2001); STUART KAUFFMAN, AT HOME IN THE UNIVERSE: THE SEARCH FOR LAWS OF SELF-ORGANIZATION AND COMPLEXITY (1995); RICARD SOLÉ & BRIAN GOODWIN, SIGNS OF LIFE: HOW COMPLEXITY PERVADES BIOLOGY (2000). Complexity theory and the science of complex adaptive systems have radically altered the way in which scientists study physical systems as mundane as a dripping faucet and as grand as the weather. For centuries, the classical scientific method has approached such behavior in a reductionist manner, intent on studying components of whole complex systems at their most irreducible levels, based on the premise that by understanding how each part works in its simplest form, we can understand how the whole system works. *See* CASTI, *supra*, at 172; COHEN & STEWART, *supra*, at 33-34. The advent of high-speed computers that allow system modeling at levels of detail never before imagined opened the door to the alternative view of systems that complexity theory posits. JOHN L. CASTI, WOULD-BE WORLDS: HOW SIMULATION IS CHANGING THE FRONTIERS OF SCIENCE 35 (1997). Although it is relatively young as a scientific discipline, complexity theory has already emerged as an important force in virtually every field of the physical sciences as well as in a wide array of the social sciences. For histories of the development of complexity theory, see JAMES GLEICK, CHAOS: MAKING A NEW SCIENCE (1987); ROGER LEWIN, COMPLEXITY: LIFE AT THE EDGE OF CHAOS (1992); M. MITCHELL WALDROP, COMPLEXITY: THE EMERGING SCIENCE AT THE EDGE OF ORDER AND CHAOS (1992). Current information about the field is best obtained from the journal *Complexity*. *See, e.g.*, John H. Holland, *Explaining the Evolution of Complexity in Signaling Networks*, COMPLEXITY, Nov.-Dec. 2001, at 34-45 (describing adaptive evolution of complexity in a signaling network model).

distant effects; but the wider the scope of analysis is opened, the more difficult, costly, and unreliable is the process of assessing total indirect effects.[70]

In the eco-pragmatic view, therefore, cost-benefit analysis and other impact assessment procedures are most useful, are most pragmatic, when we use normative principles to define their purpose and scope. In case-specific applications of eco-pragmatism, then, the normatively-defined environmental baseline and the normatively-directed precautionary principle set the stage for when cost-benefit analysis is considered appropriate and its findings used as strongly influential in the decision-making process. Of course, a programmatic level of cost-benefit analysis is used to help define the environmental baseline in the first place, in that it assists in identifying cases of disproportionate costs and insignificant benefits that may result from extensive new regulatory programs (e.g., whether generally to protect endangered species) or large-scale land and resource development decisions (e.g., whether generally to allow ocean mineral extraction). That is where Farber largely puts and keeps cost-benefit analysis.[71]

In my framework for eco-pragmatism, by contrast, impact assessment procedures return to the analysis in case-specific decision scenarios (e.g., whether to build a particular road in an endangered species's identified habitat) as the counterweight to the precautionary principle. As the available body of relevant data becomes more robust and reliable, we become more comfortable that we can evaluate the risks a particular decision poses to the prescribed environmental baseline, and we understand more about the direct and indirect effects to interests of concern that flow from different case-specific decision alternatives. In those instances it is appropriate that, as the information becomes increasingly robust and reliable, we depart increasingly from the precautionary principle and move increasingly toward impact assessment procedures as the basis for decision.[72] As the two decision-making workhorses of eco-

70. *See* Adler & Posner, *supra* note 64, at 241-45 (describing cost-benefit analysis as a "useful decision procedure [that] should be routinely used by agencies," but also recognizing that "there are significant procedural costs in any scheme of multidimensional assessment where the number of pre-specified dimensions is large").

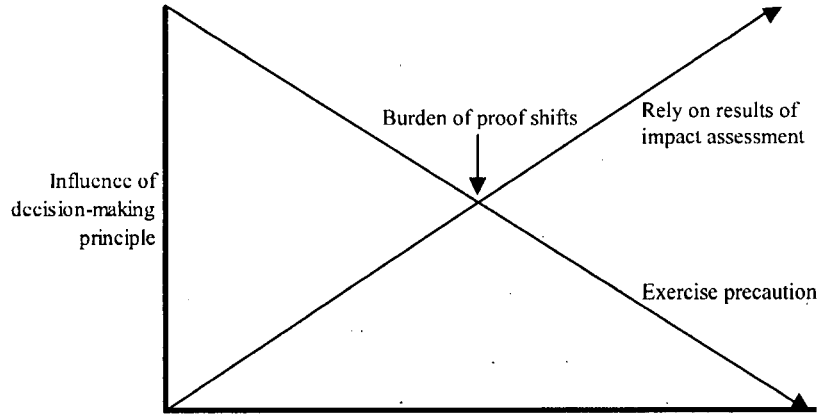
71. *See* FARBER, *supra* note 4, at 93-123.

72. Charnley and Elliott argue, for example, that

> the alleged choice between risk assessment and the precautionary principle is a false opposition. Risk assessment provides just part of

pragmatism, therefore, the precautionary principle and impact assessment should work along reverse sliding scales in terms of their influence in specific settings, and thus impose a shifting burden of proof between those advocating precaution with respect to a case-specific decision and those proposing to base the decision on impact analysis, as represented in the following model.

Figure 1: The Precautionary Principle and Cost-Benefit Analysis in Case-Specific Decision Settings



This, I propose, represents the essential model of eco-pragmatism—the way in which the environmental baseline, precautionary principle, and impact assessment procedure fit together in a working *system* of instruments. It is, in other words, the litmus test for whether a regulatory program is eco-

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> the information used to protect public health and the environment. The extent to which the precautionary principle is applied in regulatory decisionmaking depends partly on the confidence that can be placed in a risk assessment as well as on the nature and severity of the risk of concern, the likelihood that new data would change a risk management decision, the effectiveness and feasibility of the risk management action under consideration, and a wide variety of other considerations such as politics, public health, economics, and the law.

Charnley & Elliott, *supra* note 56, at 10365. Other commentators have suggested that cost-benefit analysis and the precautionary principle can co-exist and even lend mutual structure, *see* Mark Geistfeld, *Reconciling Cost-Benefit Analysis with the Principle that Safety Matters More than Money*, 76 N.Y.U. L. REV. 114, 120-21 (2001), and that cost-benefit analysis is most useful as a welfarist instrument, *see* Adler & Posner, *supra* note 64, at 194.

pragmatic. If this structure is not embedded in the program, the program is not and cannot be implemented eco-pragmatically. If it is in place, however, what next?

B. MEDIUM OF IMPLEMENTATION

Eco-pragmatism is about more than assembling the three core decision-making instruments into a system; equally as important is how the system is put into action. The reverse sliding scales, shifting burden of proof system can only work on a diet of robust, reliable information fed to an ongoing, adaptive decision-making culture. The last two pillars of eco-pragmatism—empiricism and adaptive management—thus are necessary and essential ingredients.

1. The Importance of Empiricism

The reverse sliding scales, shifting burdens of proof framework on which I propose to place the precautionary principle and cost-benefit analysis begs the question of how we achieve degrees of certainty as to threats to the environmental baseline and effects of decision alternatives. By placing the precautionary principle and impact assessment procedures in contraposition, but requiring them to work together, eco-pragmatism fulfills the core tenet of classical pragmatist philosophy—moral pluralism. One of the bedrock principles of eco-pragmatism is the rejection of positivist philosophies of the environment, replacing them with a heavy dose of experience and empiricism. This reflects the American pragmatists' strongly held conviction that "[a]ttempts to set down the 'final word' on what is right have a disturbing tendency to show up as incomplete, ambiguous or quaintly archaic in the next generation,"[73] and finds good company in those modern environmental pragmatists who are "highly critical of any notion of absolutes in either knowledge or metaphysics."[74] Indeed, to the extent that battling positivist theories frame issues, as Farber says is the case in modern environmental policy,[75] pragmatism often leads to a striving for "metatheoretical compatibilism between the opposing

73. *See* Parker, *supra* note 32, at 26.

74. Andrew Light & Eric Katz, *Introduction: Environmental Pragmatism and Environmental Ethics as Contested Terrain*, *in* ENVIRONMENTAL PRAGMATISM, *supra* note 32, at 1, 7.

75. *See supra* note 6 and accompanying text.

theories."[76]

Eco-pragmatism thus rejects moral foundationalism and assumes moral pluralism.[77] That, of course, is a serious challenge to conventional environmental policy discourse. As Light and Katz observe, one of the troubling features of modern environmental ethics scholarship is the speed with which it reached the "narrow predisposition that only a small set of approaches in the field is worthwhile," such that the only "adequate and workable environmental ethics must embrace non-anthropocentrism, holism, moral monism, and, perhaps, a commitment to some form of intrinsic value."[78] Pragmatism, by contrast, "maintains that no set of ethical concepts can be the absolute foundation for evaluating the rightness of our actions."[79]

Central in the pragmatist approach, therefore, is a willingness to test and discard theory where it does not fit the experience, rather than try to shape outcomes to fit the theory.[80] Thus, classical American pragmatism emphasizes a "practice over theory" approach in which "attention to the specific context of action reveals a methodology explicitly pragmatic, in that practice precedes the development of theory."[81] Empiricism, in other words, is the glue that holds together the moral and instrumental components of eco-pragmatism. Our moral commitment to the environment motivates the use of the environmental baseline and precautionary principle, but we depend on experience and empirical support for their formulations in specific policy contexts. Instrumental values grow in influence over decision making only as experience and empirical support justify. Empiricism *must* play this role—it must place demands on the moral and instrumental sides of eco-pragmatism—lest either side use ignorance to its advantage.

2. Adaptive Management

Eco-pragmatism's hybridization of environmental baselines, the precautionary principle, and impact assessment procedures calls for something other than business as usual in

76. Light & Katz, *supra* note 74, at 11.
77. *See* Hirokawa, *supra* note 19, at 247-53.
78. Light & Katz, *supra* note 74, at 2.
79. Parker, *supra* note 32, at 26.
80. *See* Hirokawa, *supra* note 19, at 250-52.
81. Light & Katz, *supra* note 74, at 10.

environmental law. A central point in Farber's thesis is that, however the hybrid approach might direct us to regulate today for a given issue, we have to be ready to revisit the question in the future as our knowledge base improves and environmental and economic conditions change. We must, in other words, design environmental law around a "centrality of learning to the enterprise."[82] This approach is characteristic of classical American pragmatists, who described nature as a complex system and human relations to it therefore equally as rich and varied.[83] Unfortunately, environmental law has not evolved in its short lifetime to become a particularly adept, nimble, and inquisitive student. Hence we find ourselves in the position of having to raise our "regulatory IQ" and teach the elephant how to waltz.[84]

This recipe for making environmental law more dynamic is found in the literature in ecological sciences and environmental pragmatism philosophy, which frequently demands that "policies . . . be evaluated on the basis of their capacity to take new information into account and thereby provide for adaptation and change."[85] The term in common usage for this style of governance is adaptive management.[86] Adaptive management theory traces its origins to C.S. Holling's influential book from the late 1970s, *Adaptive Environmental Assessment and Management*.[87] Holling and his fellow researchers found conventional environmental management methods at odds with the emerging model of ecosystem

82. FARBER, *supra* note 4, at 179.

83. *See* Hugh P. McDonald, *Dewey's Naturalism*, 24 ENVTL. ETHICS 189, 193 (2002).

84. *See* FARBER, *supra* note 4, at 179.

85. Castle, *supra* note 46, at 247.

86. For a more comprehensive treatment of the American pragmatist roots of modern adaptive management theory, see Bradley C. Karkkainen, *Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism*, 87 MINN. L. REV. 943, 948-60 (2003) [hereinafter Karkkainen, *Adaptive Ecosystem Management*]. Karkkainen elsewhere describes the application of adaptive management principles to a variety of ecosystem management oriented programs and policies. *See* Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 VA. ENVTL. L.J. 189, 200-33 (2001-02) [hereinafter Karkkainen, *Collaborative Ecosystem Governance*].

87. ADAPTIVE ENVIRONMENTAL ASSESSMENT AND MANAGEMENT (C.S. Holling ed., 1978) [hereinafter ADAPTIVE]; *see, e.g.*, Kai N. Lee & Jody Lawrence, *Adaptive Management: Learning from the Columbia River Basin Fish and Wildlife Program*, 16 ENVTL. L. 431, 442 n.45 (1986) (tracing the term "adaptive management" to Holling's book).

dynamics.[88] They focused on four basic properties of ecological systems to provide the premises of their new management method.[89] First, although the parts of ecological systems are connected, not all parts are strongly or intimately connected with all other parts.[90] It cannot possibly be the case, for example, that every species in an ecosystem depends for its survival on the survival of every other species. Second, events are not uniform over space, meaning, for example, that impacts of habitat loss do not gradually dilute with distance.[91] In particular, induced and other indirect effects of land developments such as pipelines and water reservoirs may be of greatest magnitude at distant points. Third, ecological systems exhibit multi-equilibrium states between which the system may move for unpredictable reasons, in unpredictable manners, and at unpredictable times.[92] Small variations in conditions such as temperature, nutrient content, or species composition can "flip" ecosystems into vastly different behavioral states, sometimes well after the event that started the reaction.[93] Finally, Holling's group observed that because ecosystems are not static but in continual change, environmental quality is not achieved by eliminating change.[94] Flood, fire, heat, cold, drought, and storm continually test ecosystems, enhancing resilience through system "self-correction."[95] The upshot is that the unexpected can happen, making it difficult to predict when, where, and to what degree policy outcomes depart from expectations.

Under this model of ecosystems, they concluded, management policy must put a premium on collecting information, establishing measurements of success, monitoring outcomes, using new information to adjust existing approaches, and a willingness to change.[96] Whereas resourcists and preservationists have battled to "lock in" positions through fixed rules and standards and preserve every inch of

88. ADAPTIVE, *supra* note 87, at 1.
89. *Id.* at 26-34.
90. *Id.* at 26-28.
91. *Id.* at 28-29.
92. *Id.* at 30-33.
93. *Id.*
94. *Id.* at 33-34.
95. *Id.*
96. *Id.* at 35.

incremental ground gained,[97] an adaptive management framework is more experimentalist, relying on iterative cycles of goal determination, performance standard setting, outcome monitoring, and standard recalibration.[98] The biologist Simon Levin recently defined it concisely as "maintaining flexibility in management structures and adjusting rules and regimes on the basis of monitoring and other sources of new data."[99] While it remains a flexible, and at times amorphous decision-making framework, this brand of adaptive management has evolved well beyond an idea; indeed, there is broad consensus today among resource managers and academics that adaptive management is the only practical way to implement ecosystem management policy.[100] I would go a step further and say it is the only effective way to implement eco-pragmatism.[101]

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97. *See* A. Dan Tarlock, *The Future of Environmental "Rule of Law" Litigation*, 17 PACE ENVTL. L. REV. 237, 244-54 (2000) (discussing the "rule of law" legal tactics of environmentalists which attempted to convince the judiciary that a specific environmental mandate existed).

98. ADAPTIVE, *supra* note 87, at 37.

99. *See* SIMON A. LEVIN, FRAGILE DOMINION 200 (1999); *see also* Simon A. Levin, *Towards a Science of Ecological Management*, 3 CONSERVATION ECOLOGY, Dec. 1999, *available at* http://www.consecol.org/vol3/iss2/art6.

100. *See* Ronald D. Brunner & Tim W. Clark, *A Practice-Based Approach to Ecosystem Management*, 11 CONSERVATION BIOLOGY 48, 54-56 (1997); Anne E. Heissenbuttel, *Ecosystem Management–Principles for Practical Application*, 6 ECOLOGICAL APPLICATIONS 730, 730 (1996); Paul L. Ringold et al., *Adaptive Monitoring Design for Ecosystem Management*, 6 ECOLOGICAL APPLICATIONS 745, 745 (1996). Indeed, the Ecological Society of America's comprehensive study of ecosystem management treats the use of adaptive management methods as a given. *See* Norman L. Christensen et al., *The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management*, 6 ECOLOGICAL APPLICATIONS 665, 670, 676 (1996).

101. This statement raises the broader and more general issue, not fully explored in this Article, of how to construct models of administrative law based on pragmatism. Particularly given its emphasis on public participation and judicial review, conventional administrative law may find itself uncomfortable with the dynamic form of decision making that eco-pragmatism anticipates. This is not a reason to reject eco-pragmatism, but rather a challenge that must be addressed. Indeed, a committed eco-pragmatist, because of the adaptive management component to the approach, would include reform of administrative law as a primary goal in the agenda. *See* Ruhl, *supra* note 11, at 403-07; Sydney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 U. KAN. L. REV. 689, 741-48 (2000). Other participants in this Symposium have addressed this consequence of eco-pragmatism more fully than I do here. *See* Karkkainen, *Adaptive Ecosystem Management*, *supra* note 86, at 975-97; A. Dan Tarlock, *Slouching Toward Eden: The Eco-pragmatic Challenges of Ecosystem Revival*, 87 MINN. L. REV. 1173, 1197-1203 (2003).

II. ECO-PRAGMATISM AND THE ESA

Part I of this Article lays out my general model of eco-pragmatism, drawing heavily from Farber's work as well as that of other philosophers of environmental pragmatism. One criticism of *Eco-pragmatism*, however, has been its lack of detail for what to do in case-specific settings.[102] Hence the main purpose of this Article, to which I now turn in Part II, is to ask how eco-pragmatism plays out in a concrete setting, in this case whether the ESA is eco-pragmatic in general structure as well as in case-specific applications.

Before moving to an analysis of whether the ESA incorporates and applies each of the five core principles of eco-pragmatism, a brief structural overview of the ESA and an example set of circumstances will assist the discussion. Depending on the type of species involved, the ESA is administered by the Secretary of the Department of the Interior, through its U.S. Fish and Wildlife Service (FWS) (for most terrestrial and freshwater species), and the Secretary of the Department of Commerce, through its National Marine Fisheries Service (NMFS) (for most marine and anadromous species).[103] These two agencies administer several core programs summarized below, the details of which are explored more fully later in the Article.

- Section 4 authorizes the FWS and the NMFS to identify endangered and threatened species, known as the "listing" function, and then to designate "critical habitat" and develop "recovery plans" for the species.[104]
- Section 7 requires all federal agencies to ensure that actions they carry out, fund, or authorize do not jeopardize the continued existence of listed species or adversely modify their critical habitat.[105]
- Section 9 requires that all persons avoid committing "take" of listed species of fish and wildlife.[106]
- Sections 7 and 10 establish a procedure and criteria for the FWS and the NMFS to approve "incidental

102. *See, e.g.*, Boudreaux, *supra* note 19, at 168.
103. 16 U.S.C. §§ 1532(15), 1533(a) (2000); *see also* 50 C.F.R. § 17.2 (2001).
104. 16 U.S.C. § 1533(a)-(f).
105. *Id.* § 1536(a)(2).
106. *Id.* § 1538(a)(1).

take" of listed species.[107]

In order to animate discussion of these provisions in the context of my eco-pragmatism model, I will use the following hypothetical case. The FWS has listed Bird, a species of songbird, as endangered, and has designated several thousand acres in County as its critical habitat. Federal Agency wishes to finance a portion of the costs of State's construction of a hospital within Bird's critical habitat. Developer wishes to develop a residential subdivision in County, in an area outside Bird's critical habitat.

A reader unfamiliar with the ESA may find its structure quite simple and its application in the hypothetical case quite straightforward. Nothing could be further from reality! The FWS, County, Federal Agency, State, Developer, and, not least of all, Bird, are about to dive together into one of the most convoluted, contentious statutory programs the human mind has devised. I never said eco-pragmatism is simple, or immune from controversy. What matters is whether eco-pragmatism produces sensible, sustainable decisions. The ESA, particularly after the Babbitt reforms, gets there frequently.

To be sure, there is room for improvement in the fit between the ESA and the eco-pragmatic model. Indeed, I make no claim that Congress had eco-pragmatism foremost in mind when it enacted or amended the ESA. I am forced, therefore, to "cut and paste" to some extent to find and piece together the statute's eco-pragmatic qualities, although I believe the manner in which I do so in no way distorts the statute's provisions or the practical interpretations they have received in the agencies or the courts. Even then, I make no attempt here to reconcile every nook and cranny of ESA law with the eco-pragmatic model. Nor do I profess to having come up with the only way to configure various ESA programs into an eco-pragmatic framework. What I do cover amounts to the major structural and programmatic weight of the ESA, assembled in a way that fits nicely into the eco-pragmatic model. Hence, while the ESA is neither explicitly nor completely eco-pragmatic in origin or in structure, its record of eco-pragmatic implementation is improving and the basic foundation is in place for more movement in the right direction—in the eco-pragmatic direction.

107. *Id.* §§ 1536(b)(4), 1539(a)(1).

A. SYSTEM OF INSTRUMENTS

Like many federal environmental laws of its vintage, the ESA has grown through a series of amendments, dozens of regulatory promulgations, and hundreds of judicial interpretations into a hodgepodge of provisions and programs. It would be preposterous of me to suggest that anything like the reverse sliding scales, shifting burden of proof system of decision-making instruments is to be found in the morass of ESA law in some neat and tidy package. With the eco-pragmatism model in hand, however, I believe I can ferret out its presence in the ESA. The three key instruments are there in close approximation to the general eco-pragmatism theme, and they not only can be, but also often are, worked out together in a way that maps remarkably well with the general model.

1. Environmental Baseline: The No Jeopardy Mandate

One does not have to search far in the law and policy of the ESA to find its environmental baseline: It is "to halt and reverse the trend toward species extinction, whatever the cost."[108] The starting point for that endeavor is section 4 of the ESA, authorizing the FWS and the NMFS to identify, or "list," any species that is endangered or threatened with extinction throughout all or a significant portion of its range.[109] Once the agency has listed a species, it must also designate the species's "critical habitat," defined as areas "essential to the conservation of the species."[110] In our hypothetical, for

108. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 184 (1978).

109. 16 U.S.C. § 1533(a), (c) (listing authority); *id.* § 1532(6), (20) (definitions of endangered and threatened).

110. *Id.* § 1532(5)(A)(i). For a description of the critical habitat designation process, see Murray D. Feldman & Michael J. Brennan, *The Growing Importance of Critical Habitat for Species Conservation*, 16 NAT. RESOURCES & ENV'T 88, 88-90 (2001); Robert Wiygul & Heather Weiner, *Critical Habitat Destruction*, ENVTL. F., May-June 1999, at 12, 13-21. Critical habitat has in recent years been the subject of tremendous controversy regarding the agencies' failure to complete designations for many listed species. Critical habitat is designated concurrently with the final listing rule unless the listing agency decides either that the listing action should not be delayed while the critical habitat designation is being completed, or that additional time of up to one year is needed to make the necessary biological and other determinations relating to critical habitat. 16 U.S.C. § 1533(b)(6)(C). The listing agency can decline to designate critical habitat if it finds that designation would not be prudent. *Id.* § 1533(b)(6)(C)(ii). Courts generally have held the Service strictly to those deadlines and to the duty to designate critical habitat. *See, e.g.*,

example, the FWS has listed Bird as endangered and has designated its critical habitat, which is found exclusively in County.

This package of listed species with critical habitat, both of which are decisions made about a species in general, defines the relevant baseline conditions for purposes of the ESA. Appropriately, economics does not play a significant role in this description of baseline conditions. For example, in reaching their species listing decisions, the ESA explicitly limits the agencies to considering "solely . . . the best scientific and commercial data available."[111] Congress clearly described the purpose of that provision as "prevent[ing] non-biological considerations from affecting such decisions."[112] When the FWS was considering whether to list Bird, for example, it could not consider the effect listing would have on the various plans of Federal Agency, State, or Developer, or on the economic conditions in County generally.

Eco-pragmatism's disproportionate costs and insignificance provisos, however, are both at play to define outer limits in this respect, albeit their effect is not to carve out much from the baseline. For example, the listing agency must assess the economic impacts of critical habitat designation and "may exclude any area from critical habitat if [the Secretary] determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless . . . failure to designate such area as critical habitat will result in the extinction of the species concerned."[113] Similarly,

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Natural Res. Def. Council v. United States Dep't of Interior, 113 F.3d 1121, 1124-27 (9th Cir. 1997). Nevertheless, the FWS has an unmistakable policy aversion to designating critical habitat, arguing on many occasions that it "provides little or no conservation benefit despite the great cost to put it in place." Endangered and Threatened Wildlife and Plants, 62 Fed. Reg. 39,129, 39,130 (July 22, 1997) (to be codified at 50 C.F.R. pt. 17). In addition, because few people understand its implications, the FWS believes that the critical habitat process "can arouse concern and resentment on the part of private landowners and other interested parties." *Id.* at 54,020, 54,025.

111. 16 U.S.C. § 1533(b)(1)(A).

112. H.R. REP. NO. 97-835, at 19 (1982).

113. 16 U.S.C. § 1533(b)(2). The FWS had for many years implemented this economic impacts analysis under the theory that critical habitat imposes no substantial impacts above the "baseline" of impacts imposed through the take prohibition of section 9 and the jeopardy prohibition of section 7, both discussed *infra*, and thus no probing analysis of critical habitat (or baseline) impacts is needed. A court recently demanded, however, that the FWS supply a thorough analysis of both the baseline and incremental effects. *See* N.M. Cattle Growers Ass'n v. U.S. Fish & Wildlife Serv., 248 F.3d 1277, 1278, 1285

species eligible for listing do not include any "species of the Class Insecta determined by the Secretary to constitute a pest whose protection . . . would present an overwhelming and overriding risk to man."[114] In other words, not all species are entitled to protection from extinction, and not all essential habitats are necessarily entitled to critical habitat status.

The practical behavioral expression of the environmental baseline then follows in section 7(a)(2) of the ESA, wherein federal agencies are instructed that they

> shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical.[115]

The FWS and the NMFS have defined "jeopardize the continued existence of" to mean "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of listed species in the wild."[116] In other words, the ESA draws a line across which, as a general matter, no federal agency is to cross: Do not appreciably reduce a listed species's viability.

That line is quite real and powerful. As the Supreme Court explained in *Tennessee Valley Authority v. Hill*, equitable considerations could not relieve the Tennessee Valley Authority (TVA) from its duty under the ESA to ensure that its construction and operation of a dam would not jeopardize the continued existence of the endangered snail darter.[117] The Court observed that the "plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost," and that in this regard the ESA "admits of no exception."[118] This baseline has served as the

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(10th Cir. 2001) (demanding an analysis of all of the economic impacts of a critical habitat designation).

114. 16 U.S.C. § 1532(6).

115. *Id.* § 1536(a)(2).

116. 50 C.F.R. § 402.02 (2001).

117. Tenn. Valley Auth. v. Hill, 437 U.S. 153, 174 & n.19 (1978).

118. *Id.* at 173, 184. As Farber has pointed out in some of his other work, the extreme position taken in *TVA v. Hill* is likely what set into motion the evolution of endangered species protection toward its present state, which is defined by more flexible tools such as the Habitat Conservation Plan discussed *infra*. *See* Daniel A. Farber, *A Tale of Two Cases*, 20 VA. ENVTL. L.J. 33, 37-39 (2001). While not framing that discussion in terms of eco-pragmatism, the

foundation from which resolution of many case-specific settings has proceeded since the *TVA v. Hill* case, leading one commentator to the following characterization of the ESA:

> [The ESA provides] the muscle for the discussions: a reason for them to take place, and a boundary below which they cannot fall. The reason is the presence of a salmon, owl, or desert tortoise, an ultimate indicator species. The boundary is impairment of these species' ability to maintain viable populations. These determinations are objective, science-based and enforceable. They are law to apply.[119]

This is an eloquent description of an environmental baseline if ever there was one.

Of course, that is not where eco-pragmatism would leave matters. The "no jeopardy" baseline would not be eco-pragmatic without room for the caveat "to the maximum extent feasible." A feasibility standard is embedded in the "no jeopardy" baseline in two ways. First, when the FWS or the NMFS concludes from its consultation with the action agency that jeopardy or adverse modification is likely, it must develop reasonable alternatives that will allow the action agency to accomplish the intended purpose of the proposed action without crossing the baseline.[120] An alternative is reasonable only if it is "economically and technologically feasible."[121] Of course, there may be no such alternative. What then? There was no further recourse provided in the statute for that situation at the time the Court decided *TVA v. Hill*, leading the Court to conclude that Congress intended that to be the end of the line for the action agency's proposed action.[122] Congress added an escape clause, however, in the 1978 amendments to the ESA to mediate the Court's "whatever the cost" and "no exceptions" interpretation of the statute.[123] An agency may cause jeopardy to a listed species if a committee of federal agency heads, referred to as the Endangered Species Committee[124] (more commonly known as the "God Squad"), finds that there are no reasonable alternatives to the proposed action, the benefits of

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time line Farber traces is, in my view, the process that advanced the ESA toward the eco-pragmatic model. The baseline, in other words, looks pretty harsh without the remaining apparatus.

119. Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 959-60 (1997).

120. *See* 16 U.S.C. § 1536(b)(3)(A).

121. 50 C.F.R. § 402.02.

122. *TVA*, 437 U.S. at 184.

123. *Id.* at 173, 184.

124. 16 U.S.C. § 1536(e).

the proposed action clearly outweigh the benefits of avoiding jeopardy, and the action is of regional or national significance.[125] Even then, such exemptions can be granted only if all reasonable mitigation measures are employed to minimize the adverse effects of the action.[126] One would anticipate few actions meeting those feasibility-based standards, and in fact few such exemptions have been sought, much less granted.[127]

In Bird's case, for example, Federal Agency's plan to finance State's hospital will trigger the section 7 consultation requirement between Federal Agency and the FWS. In most cases of this sort, the FWS would find that no jeopardy is likely to result from the project. But the hospital is planned within Bird's critical habitat, and thus the baseline is more acutely put at risk. Federal Agency may be prevented from funding State's project unless State agrees to reasonable alternatives the FWS believes will remove the risk to the baseline conditions. It is unlikely State and Federal Agency could obtain a God Squad exemption from the no jeopardy mandate in such a case, and thus in all likelihood the hospital project will be required to undergo design and location revisions that implement the proposed alternatives.

The overall approach of the ESA to defining its environmental baseline thus fits remarkably well with the eco-pragmatism model: It defines a set of baseline conditions taking into account narrowly defined cases of grossly disproportionate costs, and it defines a practical behavior requirement that decidedly favors the protection of the baseline from further risk, but which also incorporates a strictly defined feasibility caveat. As one would expect, most federal agency actions do not approach the baseline, and the consultation process established under section 7 is completed with little fanfare.[128] Yet in those cases where the baseline is put at risk

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125. *Id.* § 1536(h)(1)(A).

126. *Id.* § 1536(h)(1)(B). If national security is at stake, the exemption may be granted without the required findings or qualifications. *Id.* § 1536(j).

127. For a review of the small handful of matters that have even reached the level of committee review, much less been granted an exemption, see Patrick A. Parenteau, *The Exemption Process and the "God Squad," in* ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES, *supra* note 1, at 143-51.

128. One study found that for a five-year period in the late 1980s and early 1990s, the FWS reached a "jeopardy" finding in only 131 of 73,560 informal and formal consultations. Oliver A. Houck, *The Endangered Species Act and*

by proposed federal agency action, courts have consistently and aggressively implemented the message of *TVA v. Hill* notwithstanding the dramatic impacts to agency plans, private interests, and local and regional economies.[129]

The ESA's environmental baseline thus remains clear and unmistakable in orientation, a line infrequently approached but guarded tenaciously when it is. It is not always precisely clear where the line is in specific settings, however.[130] Eco-pragmatism must, in other words, be capable of implementing the generalized baseline concepts of "species," "critical habitat,"

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its Implementation by the U.S. Departments of Interior and Commerce, 64 U. COLO. L. REV. 277, 318-20 (1993). Similarly, the FWS reports that in the period 1998 through 2001, it conducted over 219,000 consultations, only 367 of which led to a "jeopardy" finding. U.S. FISH & WILDLIFE SERV., CONSULTATIONS WITH FEDERAL AGENCIES 2 (2002), *available at* http://endangered.fws.gov/consultations/consultations.pdf (last visited Jan. 22, 2003).

129. An example that has played prominently in the media this year is the Klamath River Basin in southern Oregon and northern California, where a set of biological opinions from the FWS (covering protected sucker fish) and the NMFS (covering protected coho salmon) forced the Bureau of Reclamation to shut off irrigation water to over 1000 farms. For detailed accounts of the incident, see Reed D. Benson, *Giving Suckers (and Salmon) an Even Break: Klamath Basin Water and the Endangered Species Act*, 15 TULANE ENVTL. L.J. 197, 198-99 (2002); Holly Doremus & A. Dan Tarlock, *Fish, Farms, and the Clash of Cultures in the Klamath Basin*, 30 ECOLOGY L.Q. (forthcoming 2003). The jeopardy consultation process has also had dramatic effects on logging in national forests in the Pacific Northwest, and consequently on the economy and culture of local communities, where numerous endangered birds and fish depend on forest ecosystems. Laura Hartt, Pacific Coast Federation of Fishermen's Associations v. NMFS: *A Case Study on Successes and Failures in Challenging Logging Activities with Adverse Cumulative Effects on Fish and Wildlife*, 32 ENVTL. L. 671, 678-98 (2002); William Stelle, Jr., *Implementing ESA Salmon Listings—Untangling Overlapping Programs*, 16 NAT. RESOURCES & ENV'T 112, 112 (2001); Rebecca W. Watson, *Ecosystem Management in the Northwest: "Is Everybody Happy?,"* 14 NAT. RESOURCES & ENV'T 173, 174-75 (2000).

130. An example that has received a remarkable level of media and political attention recently is, once again, the Klamath River Basin, see *supra* note 129, where scientists from federal, state, local, and tribal agencies as well as numerous private and nonprofit institutions have argued incessantly for years over what conditions will cause jeopardy to several species of sucker and salmon fish. Benson, *supra* note 129, at 214-24. A panel of independent experts from the National Academy of Sciences' National Research Council recently convened on the matter (of which I was the token lawyer) concluded in its interim report that there was "no substantial scientific evidence" for many of the positions the different disputants were maintaining. NAT'L RESEARCH COUNCIL, SCIENTIFIC EVALUATION OF BIOLOGICAL OPINIONS ON ENDANGERED AND THREATENED FISHES IN THE KLAMATH RIVER BASIN: INTERIM REPORT 4-5 (Nat'l Academy Press 2002).

and "jeopardy" in real-world contexts. With the baseline instrument in hand, then, the eco-pragmatist searches for the case-specific interplay of precautionary principle and impact assessment. It is to be found in the ESA.

2. Precautionary Principle: The Take Prohibition

The abstract "take care" message of the precautionary principle must be reduced to practical behavioral directives in order to have any meaningful effect in case-specific contexts. The expression of behavioral directives can be made either as an affirmative, as in "do good in such a way," or as a negative, as in "avoid doing harm in such a way." Although there are glimmers of affirmative expressions in the ESA, they have led almost nowhere in practical effect. For example, section 7(a)(1) of the statute provides that federal agencies "shall . . . utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered and threatened species."[131] That has a nice ring to it, certainly in keeping with the spirit of an affirmative statement of the precautionary principle. The statute, however, contains no additional implementing provisions for what, on its face, is a rather sweeping command. Perhaps recognizing the potentially boundless implications of this so-called "conservation duty," the courts have consistently resisted efforts to turn it into a general statement of affirmative behavioral expectations, leaving it to the discretion of each federal agency to determine how far to go with the "duty."[132]

No other provision of the statute comes close to section 7(a)(1) in expressing what could reasonably be interpreted as the affirmative style of the precautionary principle. Many commentators have nonetheless argued that the ESA inherently demands implementation under an implied background principle of affirmative conduct favoring conservation of protected species.[133] Indeed, the legislative

131. 16 U.S.C. § 1536(a)(1) (2000).

132. J.B. Ruhl, *Section 7(a)(1) of the "New" Endangered Species Act: Rediscovering and Redefining the Untapped Power of Federal Agencies' Duty to Conserve Species*, 25 ENVTL. L. 1107, 1125-37 (1995) (discussing cases in which section 7(a)(1) is used as a "shield," a "sword," and a "prod"). See Part III of this Article for more on this point.

133. The most prominent example is found in the 1995 report of the National Academy of Sciences' National Research Council (NRC) in which NRC engaged in a top to bottom review of the role of science in ESA decision making and concluded, among other things, that the precautionary principle

history of the jeopardy consultation provisions suggests that Congress believed the agencies should, or at least could, "give the benefit of the doubt to the species" when information is not conclusive.[134] In these and other decision-making settings where incomplete or inconclusive information requires the agency to make a close call, several courts have also endorsed the idea of giving the benefit of the doubt to the species,[135] and the NMFS has on occasion announced in listing and jeopardy consultation decisions that it would provide that benefit of the doubt to the species or, in the same spirit, would "err on the side of the species."[136] It is clear, however, that the statute imposes no such default rule, and the agencies have not officially adopted one as formal policy.[137] Any student of

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should be applied in ESA contexts so as to impose the burden of proving no harm on the proponent of an action. NATIONAL RESEARCH COUNCIL, SCIENCE AND THE ENDANGERED SPECIES ACT 132-34, 138 (Nat'l Academy Press 1995).

134. H.R. CONF. REP. NO. 96-697, at 12 (1979), *reprinted in* 1979 U.S.C.C.A.N. 2557, 2576.

135. *See* Conner v. Burford, 848 F.2d 1441, 1452, 1454 (9th Cir. 1988) (finding that when the FWS concluded that there was "insufficient information available to render a comprehensive biological opinion" concerning oil and gas leases, it must "give the benefit of the doubt to the species" (citations omitted)); Defenders of Wildlife v. Babbitt, 958 F. Supp. 670, 677, 680 (D.D.C. 1997) (stating that despite the FWS's claim that there was not "substantial information that the southern Rocky Mountain population of the Canada lynx meets the definition of a 'species,'" the agency must "give 'the benefit of the doubt to the species'" and list it (citations omitted)).

136. *See, e.g.*, 66 Fed. Reg. 29,502, 29,506-07 (May 31, 2001) (codified at 50 C.F.R. § 224.103 (2001)) (explaining in the Comments and Responses section that the promulgation of regulations under the ESA governing the approach of listed whales is in part to implement a precautionary approach principle); 56 Fed. Reg. 58,619, 58,621-23 (Nov. 20, 1991) (codified at 50 C.F.R. § 224.101(a)) (concluding in the explanatory sections that the Snake River Sockeye Salmon is a species under the ESA, notwithstanding uncertainty as to whether it is genetically distinct from other populations, and deciding to list it as endangered); PROTECTED RES. DIV., NAT'L MARINE FISHERIES SERV., SECTION 7 CONSULTATION BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT FOR BERING SEA/ALEUTIAN ISLANDS GROUNDFISH FISHERIES 133 (Oct. 19, 2001) (explaining that the agency conducted the consultation at all times giving the "benefit of the doubt" to the species); ENDANGERED SPECIES DIV., NAT'L MARINE FISHERIES SERV., SECTION 7 CONSULTATION BIOLOGICAL OPINION ON ATLANTIC HIGHLY MIGRATORY SPECIES FISHERY MANAGEMENT PLAN 99 (June 14, 2001) (explaining that in selecting takes of turtles from specified activities, the agency would "err on behalf of the species"); *see also* Oregon Natural Res. Council v. Daley, 6 F. Supp. 2d 1139, 1149 (D. Or. 1998) (quoting an NMFS official's rationale for recommending listing of a population of salmon as being to "err on the side of the conservation of the species").

137. Indeed, other than the instances referred to above, I have found no instances in which either the FWS or the NMFS so much as uses the phrases

administrative law knows that, in close call cases where some record evidence exists to support a decision in either direction and the statute imposes no default position, the courts generally defer to the agency's choice. Saying that the FWS and the NMFS *may* err on the side of the species in those settings, however, does not mean that they *must*. Nor, more importantly, does it directly impose any form of affirmative precautionary principle on anyone else.

By contrast, the ESA contains a negative expression of behavior, known as the "take prohibition," which ranks as one of the most powerful and broadly applicable statements of the precautionary principle on the books.[138] Section 9(a)(1) of the ESA instructs that, except as provided elsewhere in the ESA,[139] "with respect to any endangered species of fish . . . it is unlawful for any person subject to the jurisdiction of the United States to . . . (B) take any such species within the United States or the territorial sea of the United States."[140] Recognizing that the provision has defined limits—it does not apply to plant species[141] and does not apply automatically to threatened species of fish and wildlife[142]—but where it applies it does so sweepingly and with tremendous force. Persons subject to the prohibition include all federal, state, and local governments and all private organizations and individuals.[143] It applies

"precautionary principle," "benefit of the doubt," or "err on the side of the species" in any official ESA decision document the way that has been suggested the ESA should be implemented. In addition to traditional legal research methods, in October 2002 I conducted searches for these word combinations in both agencies' records using search engines on their web sites. *See* U.S. Fish & Wildlife Serv., *Search the Endangered Species Program Site*, http://endangered.fws.gov/search.html (last visited Jan. 22, 2003); Nat'l Marine Fisheries Service, *NOAA Fisheries—Search the Fisheries*, http://www.nmfs.noaa.gov/search.htm (last visited Jan. 22, 2003). I found no additional instances. While this may not represent a comprehensive set of available records, one would expect that if the agencies have widely used these phrases to represent general adoption of a precautionary principle as a matter of ESA implementation policy, more instances would have appeared. This is reinforced by the fact that one or more of the phrases did appear in numerous other documents implementing or associated with other authorities the two agencies administer.

138. 16 U.S.C. § 1538(a)(1) (2000).

139. For discussion of the exceptions, see *infra* text accompanying notes 149-165.

140. 16 U.S.C. § 1538(a)(1).

141. Plants receive more limited protection. *See id.* § 1538(a)(2).

142. The listing agency may by rule extend some or all of the take prohibition protections to threatened species. *Id.* § 1533(d).

143. All these entities fit the ESA's definition of "person." *Id.* § 1532(13).

"within the United States," on public and private lands alike.[144] It also applies to acts that "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" the protected species.[145] Within that list of prohibited activities, the FWS and the NMFS have defined "harm" to include any modification of the species's habitat—in this case not limited to designated critical habitat—that results in actual death or injury to species members,[146] an interpretation of the statute that the United States Supreme Court has upheld.[147]

The take prohibition, thus, imposes a negative behavioral directive that fulfills the precautionary principle element of eco-pragmatism. Whereas the "no jeopardy" environmental baseline draws a rigid line against extinction at the species level, the take prohibition operates at the level of individual species members. The underlying premise is that endangered *species* can be protected from extinction through a presumption against causing death or injury to any *individuals*. This presumption is given effect through a behavioral mandate that applies in principle regardless of the degree of evidence available as to the effects of a particular instance of take of an individual on the well-being of the species as a whole. In other words, the ESA does not require proof of jeopardy to the species as a whole in order to enforce the take prohibition with respect to individuals. Thus, even if State's hospital and Developer's subdivision do not jeopardize Bird as a species, State and Developer still must follow the take prohibition with respect to individual birds and their habitat. In the absence of such a precautionary approach, the cumulative effects of many federal, state, local, and private actions, each of which affects only an increment of habitat or only a small number of species members, could drive a species ever closer to jeopardy. The take prohibition guards against that possibility, imposing on *everyone* a duty to refrain from the risky behavior.

Indeed, the take prohibition is quite unusual in this respect, very much unlike other regulatory proscriptions found throughout environmental laws. Pollution control laws, for

144. *Id.* § 1538(a)(1)(B).

145. *Id.* § 1532(19).

146. 50 C.F.R. § 17.3 (2001) (FWS definition); *Id.* § 222.102 (NMFS definition).

147. Babbitt v. Sweet Home Chapter of Cmtys. for a Great Or., 515 U.S. 687, 708 (1995). For further discussion, see *infra* text accompanying notes 157-158, 161-163.

example, involve expansive regulatory programs in which agencies issue countless emission standards, force regulated entities to monitor and report a multitude of activities, and administer comprehensive permitting and enforcement efforts.[148] By contrast, the take prohibition, buried deep in the ESA, is sleek. It rests largely on the simple expression of a duty. The FWS and the NMFS do not implement that duty through nationwide technology standards, or landowner registration and reporting programs, or industry performance standards. There is no gargantuan set of "take regulations." Quite simply, people have a duty not to take endangered species.

The take prohibition, however, is not an unbridled version of the precautionary principle. True to the eco-pragmatism model, the "except as provided" caveat in the take prohibition opens the door to balancing through impact assessment. The take prohibition thus is not part of the environmental baseline, which is subject only to a feasibility exception; rather, it operates in the true sense of a precautionary, but rebuttable, presumption. Of course, the rebuttable quality of the presumption introduces controversy and contention; on the other hand, without this balancing force, the ESA would be so rigid it would likely have toppled long ago.

3. Impact Assessment: Incidental Take Permitting

The "except as provided" clause of the take prohibition[149] refers to section 10 of the ESA, the "permits" provision.[150] In particular, section 10(a)(1) establishes a procedure for the FWS and the NMFS to approve "incidental take" of species protected under the take prohibition.[151] This incidental take provision works with the take prohibition in a way that closely maps the reverse sliding scales, shifting burden of proof model I have described above as the workhorse of eco-pragmatism in case-specific settings.[152]

First, as the counterweight to the take prohibition's precautionary presumption, section 10(a)(1) allows the agencies

148. I have in mind, for example, the Clean Air Act, the text of which is almost ten times the length of the ESA. 42 U.S.C. §§ 7401-7671q (2000).

149. 16 U.S.C. § 1538(a)(1).

150. *Id.* § 1539.

151. *Id.* § 1539(a)(1)(B).

152. *See supra* Figure 1: The Precautionary Principle and Cost-Benefit Analysis in Case-Specific Decision Settings.

to approve actions that will cause take incidental to an otherwise lawful purpose *if* the applicant submits a Habitat Conservation Plan (HCP)[153] satisfying the agency that, among other things, "the applicant will, *to the maximum extent practicable*, minimize and mitigate the impacts of such taking"[154] and "the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild."[155] This set of standards allows the agency to condition approvals of case-specific takes on a scale of practicability, yet keeps the environmental baseline still ever present in the form of the proviso that no such activity, however much the practicability standard counsels in favor of allowing the take, may jeopardize the species's continued existence.[156]

Second, the Supreme Court supplied the variable burden of proof in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon* (*Sweet Home*),[157] in which, as previously mentioned, the Court approved the administrative regulation defining the harm component of the take prohibition.[158] The harm definition extends the take prohibition from cases in which the action causes direct death or injury (e.g., hunting, shooting, and trapping), to cases in which an indirect causal chain is present, i.e., loss of habitat leads in some way to actual death or injury "by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."[159] Theories of indirect take causation, however, can become quite attenuated and speculative, in which case it would be

153. The requirements for an HCP are set forth at 16 U.S.C. § 1539(a)(2)(A). "Incidental take," although not the subject of a specific statutory definition provision, is described elsewhere in the statute as a take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." *Id.* § 1539(a)(1)(B). The FWS and the NMFS have adopted this meaning for purposes of the regulations implementing section 7. 50 C.F.R. § 402.02 (2001).

154. 16 U.S.C. § 1539(a)(2)(B)(ii) (emphasis added).

155. *Id.* § 1539 (a)(2)(B)(iv).

156. Congress expressly intended that "[t]he Secretary . . . base his determination as to whether or not to grant the permit, in part, by using the same standard as found in section 7(a)(2) of the Act, . . . that is, whether the taking will appreciably reduce the likelihood of the survival and recovery of the species in the wild." H.R. REP. NO. 97-835, at 29 (1982), *reprinted in* 1982 U.S.C.C.A.N. 2807, 2870.

157. 515 U.S. 687 (1995).

158. *Id.* at 708; *see also supra* note 147 and accompanying text (discussing *Sweet Home*).

159. 50 C.F.R. § 17.3 (2001) (FWS definition); *id.* § 222.102 (NMFS definition).

unreasonable to enforce the take prohibition's rebuttable presumption against the activity as rigorously as in more obvious cases of direct take. For example, assume that Developer's plan to build a subdivision in County would locate new homes in an area within several hundred yards of habitat known to be occupied by members of the Bird species, but not in such habitat or critical habitat. Opponents of the project may argue that some of the residents of the new homes will have cats as pets, some of those cat owners will allow their cats to wander outdoors, some of those cats may venture into Bird's habitat, and some of those cats may eat birds, and some of those birds may be individuals of the Bird species. Anyone could speculate such possibilities, and it would be unreasonable to impose the burden on Developer of proving the postulated scenario is not possible.[160]

Thus, *Sweet Home* emphasized that the harm rule must "be read to incorporate ordinary requirements of proximate causation and foreseeability"[161] and acknowledged "strong arguments that activities that cause minimal or unforeseeable harm will not violate the [ESA] as construed."[162] In her concurrence, Justice O'Connor was more explicit, limiting the scope of the harm rule to "significant habitat modification that causes actual, as opposed to hypothetical or speculative, death or injury to identifiable protected animals."[163]

Since the Court established these evidentiary burdens, the lower courts have steadfastly refused to enforce the take prohibition based on attenuated indirect take theories, but have enjoined case-specific instances of take when death or injury was proven to be likely.[164] Similarly, courts have applied the sliding scale, shifting burden of proof approach by reviewing incidental take permits based on the degree to which

160. *See* Morrill v. Lujan, 802 F. Supp. 424, 424-29, 433-34 (S.D. Ala. 1992) (rejecting the ESA claim for injunctive relief based on this set of allegations). In settlement of another round of litigation, initiated following the denial of the injunction request, the developer in *Morrill* nonetheless agreed to prohibit house cats in the development. *See* William H. Satterfield et al., *Who's Afraid of the Big Bad Beach Mouse?*, NAT. RESOURCES & ENV'T, Summer 1993, at 13, 15.

161. *Sweet Home*, 515 U.S. at 696-97 n.9.

162. *Id.* at 699.

163. *Id.* at 708-09.

164. For a current and thorough survey of the post-*Sweet Home* cases, see Alan M. Glen & Craig M. Douglas, *Taking Species: Difficult Questions of Proximity and Degree*, 16 NAT. RESOURCES & ENV'T 65, 68-69, 132 (2001).

the record substantiated the agency's finding that the applicant had mitigated the impacts of take to the maximum extent practicable, the burden being on the person challenging the permit to demonstrate otherwise.[165]

Judicial review of HCP incidental take permits has been, for the most part, ad hoc and based on the available administrative record.[166] More definitive benchmarks are available and should be used to assist the agencies and the courts in determining where on the sliding scale particular cases rest. For example, in its recent study of incidental take permits, the Defenders of Wildlife suggested that whether or not the listing agency has promulgated a recovery plan for a listed species under section 4(f) of the ESA[167] should dictate the influence of the precautionary principle in incidental take permit decisions.[168] Listing decisions collect information about a species decline, whereas recovery plans collect information about how to improve a species's viability.[169] Thus, the advocacy group explained,

> Clearly, HCPs . . . must move forward in the absence of updated recovery plans. When recovery plans are not available, however, conservation plans should incorporate the precautionary principle strategy. That is, conservation plans should have better protection for species, to make up for uncertainties stemming from inadequate information and missing recovery plans.[170]

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165. *Compare* Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., 202 F. Supp. 2d 594, 622, 638, 646, 663 (W.D. Tex. 2002) (holding that the finding was supported by the record), *with* Sierra Club v. Babbitt, 15 F. Supp. 2d 1274, 1281-84 (S.D. Ala. 1998) (holding that the finding was not supported by the record).

166. *See supra* note 165 and accompanying text.

167. Section 4(f) requires the listing agency to "develop and implement plans (hereinafter in this subsection referred to as "recovery plans") for the conservation and survival of endangered species and threatened species." 16 U.S.C. § 1533(f) (2000).

168. DEFENDERS OF WILDLIFE, FRAYED SAFETY NETS: CONSERVATION PLANNING UNDER THE ENDANGERED SPECIES ACT 54 (1998).

169. Recovery plans are required to include "site-specific management actions" and "objective, measurable criteria" for the conservation of the species. 16 U.S.C. § 1533(f)(1)(B)(i)-(ii).

170. DEFENDERS OF WILDLIFE, *supra* note 168, at 54. By contrast, some endangered species advocates suggest a framework in which the precautionary principle is unyielding, that the burden of proof never shifts. For example, the director of the Endangered Species Coalition suggests,

> [W]e should not change the precautionary principle. This tenet of conservation biology holds that even when we do not have *all* the information, we should never take risks where an endangered species is involved. In legal terms, this means that the burden of proof is on

The corollary, of course, is that when a recovery plan and the information it contains about the species *is* available, the precautionary principle no longer should dominate decision making and impact assessment can rise in influence.

The point is that there are different stages of knowledge about endangered species, beginning with knowledge about its decline (the listing stage) and advancing to knowledge about its conservation (recovery plans) and, we hope, its return to viability (recovery and removal from the list). An eco-pragmatic approach would correspond decision making to this time-line of knowledge. For example, in the case of Developer seeking an incidental take permit to build out the subdivision in Bird's habitat, the information that the FWS should demand of Developer to overcome the precautionary take prohibition should depend on the timing of the permit application relative to this administrative knowledge time line. If Developer files immediately after the FWS lists Bird, well before the FWS has completed a recovery plan for Bird, Developer bears a heavy burden in order to overcome the agency's bias in favor of precaution. Once the recovery plan is prepared, however, Developer and the FWS can use it as the reference point for determining whether the permit criteria are satisfied, and thus rely less on precautionary measures.

With some measure of reconstructing, therefore, the pieces of the ESA begin to fit together in a way that closely tracks the eco-pragmatism model. The listing function and the "no jeopardy" mandate fulfill the objectives of the environmental baseline, defining a tangible set of baseline conditions and a clear behavioral directive.[171] The take prohibition is remarkably consistent with the purposes of the precautionary principle, establishing a normative direction in which human behavior generally is to be exercised with respect to protected species.[172] Lastly, the incidental take permitting procedure introduces a mechanism for impact assessment that rebuts the presumption against take when the permitting criteria are

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those who promote development to show that they would not harm an endangered species.

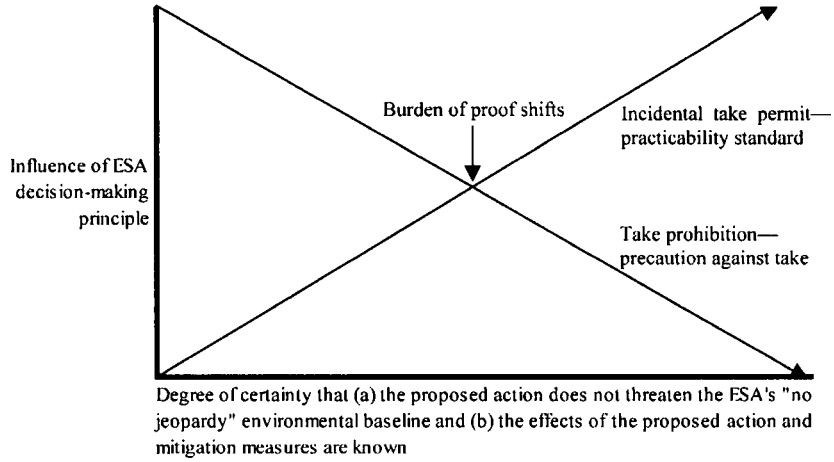
Brock Evans, *Crisis Is the Real Agent of Progress*, ENVTL. F., Mar.-Apr. 2002, at 48. This is, of course, not the standard the incidental take permit program employs.

171. *See supra* text accompanying notes 108-30.

172. *See supra* text accompanying notes 138-48.

satisfied in case-specific settings.[173] The ESA thus provides a real-world representation of the generalized model I developed above, as illustrated in the following model.

Figure 2: The Take Prohibition and Incidental Take Permitting In Case-Specific ESA Decision Settings



Of course, I am not suggesting that Congress had this model in mind when it enacted the ESA, or that Bruce Babbitt had a copy of this graph taped to his wall as he embarked on administrative reform of the ESA. I am suggesting, however, that it is an interesting and useful way to think about the ESA, about what it is and what it could be. Nothing about this model requires that we change anything about the three programs involved, except the way in which we think about how they fit together. Indeed, as reflected in the numerous citations to judicial opinions and administrative materials I have supplied along the way, for the most part the courts and the agencies have begun practicing this model.[174] The question that remains, therefore, is whether we will let them continue to do so, or even to strengthen its eco-pragmatic qualities. For that we turn to the last two pillars of eco-pragmatism—empiricism and adaptive management.

173. *See supra* text accompanying notes 149-70.
174. *See supra* text accompanying notes 108-70.

B. MEDIUM OF IMPLEMENTATION

The ESA, particularly when framed in the reverse sliding scales, shifting burden of proof model, forces many questions with few easy answers. What is jeopardy for a species? Is it a function of population size, population dispersal, habitat condition, or all of these? Will a particular action take individuals of a species? Which ones, and when? Is the mitigation proposed for an incidental take authorization adequate? Is it the maximum practicable? These are the right questions to ask—they are eco-pragmatic questions—but we must also find the right medium within which to process them. For eco-pragmatism that means a medium steeped in empiricism and adaptive management. Here again, the ESA comes out looking remarkably eco-pragmatic.

1. Empiricism: The Best Available Evidence Standard

As an intersection between science and law, the reliability of decision making under the ESA necessarily depends on the quantity and quality of scientific information available to and used by the decision makers. The eco-pragmatic model of the ESA described above could hardly operate on less than sufficient and reliable scientific data. Accordingly, the ESA incorporates several information requirements and standards in the three programs that provide the statute its eco-pragmatic structural foundation.

For example, the listing and critical habitat programs that define the environmental baseline conditions specify the decision criteria the agencies must use and impose a quality standard for information, known as the "best available evidence" standard, that the agencies must follow in evaluating those criteria.[175] Thus, when deciding whether to list a species, the FWS and the NMFS must consider factors such as loss of habitat[176] using "the best scientific and commercial data

175. *See* 16 U.S.C. § 1533(b)(1)(A) (2000) ("[T]he Secretary shall make determinations . . . solely on the basis of the best scientific and commercial data available . . . ."). *See generally* Laurence Michael Bogert, *That's My Story and I'm Stickin' to It: Is the "Best Available" Science* Any *Available Science Under the Endangered Species Act?*, 31 IDAHO L. REV. 85, 88, 118-40 (1994); Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029, 1051-54, 1074-87 (1997).

176. 16 U.S.C. § 1533(a)(1)(A).

available."[177] Similarly, the "no jeopardy" behavioral directive relies on a consultation procedure between the action agency and agency with jurisdiction over the species in question, in which the agencies exchange detailed information regarding the impacts of the proposed action on the species,[178] all of which is subject to the "best available evidence" quality standard.[179]

Although the statute leaves this "best evidence" standard of data quality undefined, its "obvious purpose . . . is to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise."[180] It is, in other words, a check on both the hasty application of the precautionary principle and the uninformed use of impact assessment. Accordingly, the courts have interpreted it to impose several practical guidelines on the agencies.[181] The agencies are prohibited from manipulating their decisions "by unreasonably relying on certain sources to the exclusion of others,"[182] from disregarding "scientifically superior evidence,"[183] and from declaring scientific data unreliable due to "[r]elatively minor flaws."[184] The agencies must use the best data available, not the best data possible;[185] therefore, they may not insist on conclusive data in order to make a decision.[186] The agencies are not required to conduct independent research to improve the pool of available data, however.[187] Thus, they "must rely on even inconclusive or uncertain information if that is the best available at the time of the listing decision."[188] Through all of this, the agencies must manage and consider the data in a transparent administrative process.[189]

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177. *Id.* § 1533(b)(1)(A).

178. *Id.* § 1536(a)(2).

179. *See id.* § 1536(c); 50 C.F.R. § 402.14(g)(8) (2001).

180. Bennett v. Spear, 520 U.S. 154, 176 (1997).

181. *See* Southwest Ctr. for Biological Diversity v. Norton, 2002 WL 1733618, at *8-*9 (D.D.C. July 29, 2002) (summarizing the existing body of case law); *see generally* Doremus, *supra* note 175, at 1051-56, 1074-87 (1997).

182. *Southwest Ctr.*, 2002 WL 1733618, at *8.

183. *Id.*

184. *Id.*

185. *Id.* (citing Building Indus. Ass'n of Superior Cal. v. Norton, 247 F.3d 1241, 1246-47 (D.C. Cir. 2001)).

186. *Id.* at 9.

187. *Id.* (citing Southwest Ctr. For Biological Diversity v. Babbitt, 215 F.3d 58, 60 (D.C. Cir. 2000)).

188. *Id.*

189. Doremus, *supra* note 175, at 1084-87.

Similarly, in 1994 the FWS and the NMFS issued a joint policy providing guidelines for how the agencies will ensure that their ESA decisions incorporate this evidentiary standard.[190] The policy directs the agencies to follow six guidelines in ESA implementation decisions vital to the eco-pragmatic approach, such as species listing, jeopardy consultations, and incidental take authorizations: (1) require that all biologists evaluate all scientific and other information that will be used to make the decision;[191] (2) "[g]ather and impartially evaluate biological, ecological, and other information that disputes official positions, decisions, and actions proposed or taken by the [FWS or the NMFS]";[192] (3) ensure that biologists "document their evaluation of information that supports or does not support a position being proposed" by the agency;[193] (4) use primary and original sources of information as the basis for consultation decisions or recommendations;[194] (5) adhere to the time frames or "schedules" established by the ESA;[195] and (6) "conduct management-level review of documents developed by [the agency] to verify and assure the quality of the science used to establish official positions."[196]

In other words, information is valued in the ESA, not merely in quantity but also in quality. The agencies must respect the value of empirical experience and take all available reliable information into account, but must move forward with decision making even in the face of limited information. This approach thus puts into play both the precautionary principle and impact assessment: Decision makers cannot undermine the precautionary principle by pointing to a lack of data, but nor can they undermine impact assessment by selectively ignoring available data. As implemented, therefore, the best available evidence standard advances the purpose of empiricism in eco-pragmatism, doing so with explicit recognition of the roles of the precautionary principle and impact assessment.[197]

190. 59 Fed. Reg. 34,271 (July 1, 1994).
191. *Id.*
192. *Id.*
193. *Id.*
194. *Id.*
195. *Id.*
196. *Id.*
197. Proposed legislation in Congress, the Sound Science for Endangered Species Act Planning Act of 2002, would make the empiricism purpose of the best available science standard even more explicit, mandating that the FWS

Yet two questions linger with respect to the best available evidence standard, one directed to the "best" factor in the equation and the other to the "available" factor. The first is whether adding "best" to the standard has made any appreciable difference in the outcome of ESA decisions. Most other environmental laws do not contain the same or any similar condition on the quality of the evidence that an agency may consider. The default rules for those statutes are provided in the judicial review provisions of the Administrative Procedure Act (APA), under which a court could find that an agency's reliance on sloppy, filtered, or haphazard science is arbitrary and capricious.[198] Why not just leave it at that for the ESA? What does "best" add?

I confess it is difficult to pinpoint the incremental effect of the best available evidence standard.[199] On the one hand, the courts behave as if the best available evidence standard means *something*,[200] yet it is not clear that any of the decisions finding the standard satisfied or violated would have turned out differently under the conventional APA test. Turning to a different forum, I venture to guess that we would witness lively debate in Congress, and a packed house of lobbyists representing all variety of interests, were a serious movement afoot to add the best available evidence standard to all the other environmental laws. Legislative posturing, however, does not equate with legal significance. Overall, the practical effect of the best available evidence standard may simply be to reinforce the empirical theme of ESA decision making, and thus to support implementing the statute through eco-pragmatism. Even if that is all that it does, then, I find eco-pragmatic value added by the "best" factor in the ESA's best available evidence standard.

The second question raises a more problematic concern for

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and the NMFS ensure that their species listing decisions "give greater weight to any scientific or commercial study or other information that is empirical or has been field-tested or peer-reviewed." H.R. 4840, 107th Cong. § 2 (2d Sess. 2002). As noted previously, this already is the policy of the agencies. *See supra* note 190.

198. 5 U.S.C. § 706 (2001).

199. This is a question that, to my knowledge, has received little attention in commentary or judicial treatments of the best available evidence standard, and which deserves more attention than time and space provide here. I thank Rob Fischman for raising the question and exploring it with me to the extent discussed in the text.

200. *See supra* notes 180-89 and accompanying text.

eco-pragmatic implementation: Does the "available" factor in the standard unduly limit its eco-pragmatic force? It does, after all, scale back the standard from "best *possible*" to "best *available*," thus relieving the agency of any duty to conduct independent empirical research and requiring that the agency make a decision even in the face of incomplete or inconclusive data. All agencies—indeed, all decision makers—face this struggle to know when to cut off the quest for new data and make a decision based on the data at hand, however. It is a struggle that screams out for pragmatic approaches, such as the reverse sliding scale, shifting burden of proof model developed above. Adding "available" after "best" simply acknowledges that, in the general case, the FWS and the NMFS have to place a limit on how far they take the "best" factor.

There will be cases, however, for which the "available" limit, if rigidly applied, could handcuff the agencies from making eco-pragmatic decisions. The final pillar of eco-pragmatism, adaptive management, responds to that concern. Adaptive management necessarily requires an emphasis on empiricism; however, empiricism does not lead inevitably to adaptive management. Indeed, rigid application of the "available" factor could suppress adaptive management. The incorporation of adaptive management into the ESA implementation program thus broadens the program's use of empiricism to respond to the need, in certain contexts, continuously to feed new information into the decision-making process.

2. Adaptive Management: Habitat Conservation Plans

The eco-pragmatic model of the ESA I have defined above is, like any eco-pragmatic program, dynamic in its decision-making process. Information about imperiled species is not static. Our understanding of what contributes to their imperilment and to their recovery is in flux. Our conception of where any one case rests on the sliding scales graph will change over time. Decisions and decision-making processes under the ESA must change over time as well. To be carried out eco-pragmatically, in other words, the ESA must rely on adaptive management styles of governance and use adaptive instruments of regulation and policy. This, the last pillar of eco-pragmatism, is Bruce Babbitt's true legacy to the ESA.

Babbitt took charge of the ESA at a time when its

reputation had reached a low point in the Republican-controlled Congress, where the statute had become the whipping boy for property rights advocates.[201] At the same time, the statute had amassed a reputation with environmental protection interests for under performing in its species conservation mission.[202] How, then, could Babbitt enhance the species conservation performance of the ESA without running more afoul of property rights resentment? With Congress poised to gut the statute, he had to think fast about a way out of that dilemma.

His stroke of brilliance was to forge a two-part agenda that sought to resolve both issues through innovative interpretations of ESA authorities.[203] One side of the agenda focused on enhancing species conservation through greater emphasis of ecosystem-level management of habitat and other resources vital to the sustainability of imperiled species.[204] The other side of the agenda focused on providing a greater voice and more fairness to landowners on whose property the imperiled species are found.[205] This double-barreled agenda took many forms and led to numerous regulatory innovations.[206]

The most prominent example of the impact this approach

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201. For a more thorough account of the factors that set the stage for the actions discussed in this portion of the text, see Leshy, *supra* note 22, at 208-12.

202. *See, e.g.*, DEFENDERS OF WILDLIFE, *supra* note 168, at 3 ("[C]onservationists assert that the ESA is not adequately enforced .... [C]onservationists ask whether it makes sense to focus some effort on conserving species before their numbers drop so low and their habitat shrinks so much that listing becomes necessary.").

203. Once again, an insider's account provides a thoughtful perspective on the strategic approach the Babbitt administration took. *See* Leshy, *supra* note 22, at 212-14.

204. *See, e.g.*, Interagency Cooperative Policy for the Ecosystem Approach to the Endangered Species Act, 59 Fed. Reg. 34,273 (July 1, 1994); George Frampton, *Ecosystem Management in the Clinton Administration*, 7 DUKE ENVTL. L. & POL'Y F. 39, 40 (1996) (authored by a DOI official). For a survey of the policies the Babbitt administration collected under the ecosystem management theme, see J.B. Ruhl, *Who Needs Congress? An Agenda for Administrative Reform of the Endangered Species Act*, 6 N.Y.U. ENVTL. L.J. 367, 374-87 (1998).

205. *See* Ruhl, *supra* note 204, at 388-400 (surveying the policies serving economic interests).

206. For a summary of the current status of the various regulatory innovations attributable to the Babbitt-era FWS, see EUGENE H. BUCK ET AL., CONG. RES. SERV., ISSUE BRIEF NO. IB10072: ENDANGERED SPECIES: DIFFICULT CHOICES 9-12 (Jan. 7, 2003).

has had on the ESA is the Habitat Conservation Plan (HCP) program, which another eco-pragmatist has described as "a sweeping new approach to protecting endangered species."[207] As described above, landowners prepare HCPs as part of the application for incidental take permits under section 10(a)(1) of the ESA.[208] Although Congress added the so-called "HCP permit" program to the ESA in 1982, by 1990 only a handful of HCP permits had been requested and issued.[209] The program was simply not on the radar screen of landowners or the agency. Babbitt saw it, however, as the perfect medium for resolving the ever increasing instances of collision between the ESA take prohibition and urban growth.[210] Beginning primarily in Austin, Texas, and in southern California, the number of HCP permits began to grow in the early 1990s.[211] With experience, the agency added structure and standards to the program.[212] Landowners increasingly participated in HCPs as a means of resolving ESA issues with lasting certainty, while the agency increasingly promoted the program as a means of managing species conservation across ecosystem-level scales.[213]

To fuse these two objectives, Babbitt made adaptive

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207. *See* Farber, *supra* note 118, at 38.

208. 16 U.S.C. § 1539(a)(1) (2000).

209. By 1992, for example, the FWS had issued only 12 HCP permits, whereas it had issued 225 by October 1, 1997. DEFENDERS OF WILDLIFE, *supra* note 168, at vi. For background on these developments and the HCP program in general, see Eric Fisher, *Habitat Conservation Planning Under the Endangered Species Act: No Surprises & the Quest for Certainty*, 67 U. COLO. L. REV. 371, 381-87 (1996); Shi-Ling Hsu, *The Potential and the Pitfalls of Habitat Conservation Planning Under the Endangered Species Act*, 29 ENVTL. L. REP. 10,592 (1999); Albert C. Lin, *Participants' Experiences with Habitat Conservation Plans and Suggestions for Streamlining the Process*, 23 ECOLOGY L.Q. 369, 374-409 (1996); Ruhl, *supra* note 3; Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings & Incentives*, 49 STAN. L. REV. 305, 335-47 (1997); Robert D. Thornton, *Habitat Conservation Plans: Frayed Safety Nets or Creative Partnerships*, 16 NAT. RESOURCES & ENV'T 94 (2001).

210. *See* Leshy, *supra* note 22, at 213-14.

211. *See* Thornton, *supra* note 209, at 95 (discussing the southern California HCP experience).

212. For example, the FWS has published a lengthy handbook describing the steps required to obtain an HCP permit. U.S. FISH AND WILDLIFE SERV. & NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES HABITAT CONSERVATION PLANNING HANDBOOK (1996) [hereinafter HCP HANDBOOK].

213. *See* Thornton, *supra* note 209, at 95 (stating that the use of HCPs "skyrocketed" after the announcement of the Babbitt reforms).

management a core feature of HCP permits.[214] Near the end of his tenure, by the time the HCP permit program had gotten fully on its feet, the FWS announced it would henceforth administer permits under the ESA, where gaps in information can run high, using adaptive management as a means to "examine alternative strategies for meeting measurable biological goals and objectives through research and/or monitoring, and then, if necessary, to adjust future conservation management actions according to what is learned."[215] The FWS thus portrayed adaptive management as an important practical tool that "can assist the Services and the applicant in developing an adequate operating conservation program and improving its effectiveness."[216] The integration of adaptive management in the HCP process, which is by no means required or even signaled in the statute, is what sealed HCP as "a system of negotiation rather than one of unilateral federal imposition on landowners."[217] Adaptive management, as the FWS uses it, also leads to continuing relations between the parties after issuance of the incidental take permit, which

214. *See* HCP HANDBOOK, *supra* note 212, at 3-24.

215. Notice of Availability of a Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 64 Fed. Reg. 11,485, 11,486-87 (Mar. 9, 1999). HCPs thus are acknowledged to be working hypotheses of how species will respond to changes in habitat size, location, configuration, and quality. To truly integrate adaptive management into an HCP, the plan must include a monitoring program to evaluate the performance of mitigation measures and a system that automatically triggers alternative conservation actions in the event that performance fails to meet conservation goals. Gregory A. Thomas, *Where Property Rights and Biodiversity Converge Part III: Incorporating Adaptive Management and the Precautionary Principle into HCP Design*, 18 ENDANGERED SPECIES UPDATE 32, 34-35 (2001); George F. Wilhere, *Adaptive Management in Habitat Conservation Plans*, 16 CONSERVATION BIOLOGY 20, 26 (2002).

216. *See* Notice of Availability of a Final Addendum to the Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 65 Fed. Reg. 35,242, 35,252 (June 1, 2000). For an in-depth discussion of the integration of adaptive management into the HCP program during Babbitt's tenure, see Holly Doremus, *Adaptive Management, the Endangered Species Act, and the Institutional Challenges of "New Age" Environmental Protection*, 41 WASHBURN L.J. 50, 68-74 (2001).

217. Farber, *supra* note 118, at 43. Other commentators have stressed the negotiation-based character of the HCP program. *See* Hsu, *supra* note 209, at 10,594-600 (describing the HCP negotiation process between agency and permittee, and concluding that HCPs may provide environmental benefits when "valuable habitat and low-quality development land is exchanged for valuable development land and low-quality habitat"); Ruhl, *supra* note 3, at 391-96 (describing the HCP mitigation negotiation process); Wilhere, *supra* note 215, at 25.

serves the agencies' goal of fostering long-term collaborative "conservation partnerships" with landowners.[218] Negotiation and collaboration both thrive in the context of empiricism and working in the reverse sliding scale, shifting burden of proof model.[219] Not surprisingly, therefore, HCP permits proliferated under Babbitt's tenure and continue to do so in the current administration, coming in all sizes and flavors and adapting to local circumstances and the record of available evidence to meet the national policy goal of species conservation.[220]

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218. As one FWS official has explained,

> We will continue to incorporate contingency planning within all types of HCPs. In the future, HCPs will have improved structure in their adaptive management strategies. . . . Increased structure in adaptive management strategies will require increased vigilance on the part of the permittees and the Service during implementation of long-term plans; this reflects the nature of the conservation partnership created by HCPs.

Marj Nelson, *The Changing Face of HCPs*, ENDANGERED SPECIES BULL., July/Aug. 2000, at 4, 7; *see also* Karkkainen, *Collaborative Ecosystem Governance*, *supra* note 86, at 190. To be sure, adaptive management, to be implemented, does not *require* establishing collaborative relations between regulators and other interested parties. Most adaptive management advocates, however, portray it as most effective when it is housed in a collaborative framework. *See* John Schelhas et al., *Introduction* to BIOLOGICAL DIVERSITY: BALANCING INTERESTS THROUGH ADAPTIVE COLLABORATIVE MANAGEMENT at xix, xxv (Louise E. Buck et al. eds., 2001).

219. One commentator recognizes the continuing, but declining, role of the precautionary principle in this model, suggesting that where information critical to the HCP design is scarce or uncertain, application of the precautionary principle counsels that the HCP should "be shorter in duration, cover a smaller area, avoid irreversible impacts, require that mitigation measures be accomplished before take is allowed, include contingencies, and have adequate monitoring." Thomas, *supra* note 215, at 36. Thus, as information becomes more robust, the permit term can lengthen, the area covered can enlarge, and so on.

220. As of December 12, 2002, the FWS had approved 414 HCPs ranging in scope from a few acres to over 1 million acres and covering a total of 30 million acres and 200 listed species. *See* U.S. Fish & Wildlife Serv., *Endangered Species Habitat Conservation Planning*, http://endangered.fws.gov/hcp/index.html (last visited Feb. 14, 2003); *cf.* U.S. FISH & WILDIFE SERV., HABITAT CONSERVATION PLANS AND THE INCIDENTAL TAKE PERMITTING PROCESS 1 (Nov. 2001) (stating that as of September 2001, over 360 HCPs had been approved). For a running count, see U.S. Fish & Wildlife Serv., *General Statistics for Endangered Species*, http://ecos.fws.gov/servlet/TessStatReport (last visited Feb. 2, 2003). For an excellent statistical summary of the 208 HCP permits that the FWS had issued nationally by August 1997, including acreage statistics, see PETER KAREIVA ET AL., NAT'L CTR. FOR ECOLOGICAL ANALYSIS AND SYNTHESIS & AM. INST. OF BIOLOGICAL SCIS., USING SCIENCE IN HABITAT CONSERVATION PLANS 2-4, 14-18 (1999), http://www.nceas.ucsb.edu/nceas-web/projects/97KAREI2/hcp-1999-01-14.pdf (last visited Feb. 2, 2003). HCP permits cover areas that vary widely in terms of size, with some

There was not universal support for this shift toward eco-pragmatic implementation of the HCP program. There are, unquestionably, practical concerns about the rigor with which adaptive management will be used, to which I respond that adaptive management is, unquestionably, still a work in progress in the HCP program.[221] Resistance to HCPs spread

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covering a few acres while others cover in excess of 1.6 million acres. *Id.* at 14. For a history of some of the early regional HCP efforts, see TIMOTHY BEATLEY, HABITAT CONSERVATION PLANNING: ENDANGERED SPECIES AND URBAN GROWTH 23-39 (1994).

221. Skepticism in this sense falls into two categories. The first questions the ability of agencies to fulfill the purposes of adaptive management in the face of political pressures from resourcist interests. For example, Holly Doremus argues that adaptive management, because of its inherent flexibility, may in practice be subject to politically motivated abuse in the individualized negotiation framework of HCPs, as well as to being diminished in effectiveness by the parallel objective of providing fairness to landowners, which often is translated into the provision of long-term certainty in the permitting context. *See* Doremus, *supra* note 216, at 71-74. True enough, adaptive management, to be effective, does require institutions that ensure a rigorous framework and implementation policy, meaning that successful adaptive management requires attention to institutional concerns as well to the fabric of adaptive management itself. This does not, however, distinguish adaptive management from any other resource management decision-making approach, and it cannot reasonably be expected that the institutions necessary for adaptive management to flourish will be in place before adaptive management can be tested. The institutional question is, in other words, adaptive in its own right. The second category of skepticism focuses on the interplay between the adaptive management policy and another policy the Babbitt administration introduced to the HCP process, the so-called "No Surprises" provision. This policy relieves the HCP permittee of any additional conservation obligations beyond those specified in the HCP with regard to unforeseen circumstances that arise after the HCP is issued. *See* Habitat Conservation Plan Assurances ("No Suprises") Rule, 63 Fed. Reg. 8859 (Feb. 23, 1998) (to be codified at 50 C.F.R. pt. 17). The policy has been described as an essential component of the HCP program, necessary to make HCPs attractive to landowners. *See* Fred P. Bosselman, *The Statutory and Constitutional Mandate for a No Surprises Policy*, 24 ECOLOGY L.Q. 707, 717-19 (1997). Other commentators, however, point out that the "No Surprises" policy may constrain the use of adaptive management, as it cuts off revision of prior agreements about the HCP's conservation measures. *See* Doremus, *supra* note 216, at 72-73. In fact, the "No Surprises" policy simply defines who is responsible for those measures, and a robust adaptive management provision in an HCP negates the argument that matters contemplated as the subject of adaptive management were unforeseen for purposes of the "No Surprises" policy. Hence, with deliberate attention by the permitting agency to the contours and interplay of the adaptive management and "No Surprises" provisions of an HCP, the two seem perfectly capable of meeting their respective objectives. *See* Jan S. Pauw & James R. Johnston, *Habitat Planning under the ESA on Commercial Forestlands*, 16 NAT. RESOURCES & ENV'T 102, 104-05 (2001) (discussing the relationship between "No Surprises" and other policies).

well beyond those who focus on the practical effects, however. Simply put, advocates of the strongly moralistic vision of the ESA have a hard time handling the notion that endangered species can be killed, which is the premise of an HCP, and that the forum for doing so is a negotiation between landowners and a government agency.[222] The reality, however, is that the longer ESA implementation clung to the moralistic vision, the more perverse its effect on the goal of species protection. Lack of flexibility in the incidental take program, coupled with the threat of liability for take of species on private property, sent all the wrong messages to landowners about endangered species. Consider that when land development is a major contributing cause of a species's endangerment, which is true of most listed species, those landowners who developed in the species's habitat before the listing, and who thus caused the problem, escape regulation, whereas the poor souls who maintained the species's habitat shoulder all the land use constraints.[223] That is simply unfair. Under such a regime, no economically rational landowner would: (1) conserve habitat of a species known to be a candidate for listing in the near future; (2) promote the introduction of habitat for species already listed; or (3) do anything to call attention to the presence of a listed species or its habitat.[224] Yet these are the behaviors the ESA should seek to promote.

Recognizing this irony, Babbitt not only stuck to the HCP program reforms in the face of intense opposition from preservationists,[225] he broadened them to address all of these policy perversions, with adaptive management as the central implementation approach. As his administration wound down, it adopted the Candidate Conservation Agreement mechanism

222. Thus, I recognized that my choice of title for a previous article describing the "nuts and bolts" of the HCP program—*How to Kill Endangered Species, Legally*—was likely to "leave most readers somewhere between uncomfortable and incensed." Ruhl, *supra* note 3, at 349. The point is that we have to be able to talk about the ESA for what it is—a law that has to be implemented in case-specific settings, many of which involve some loss of an endangered species or its habitat.

223. *See* J.B. Ruhl, *The Endangered Species Act and Private Property: A Matter of Timing and Location*, 8 CORNELL J.L. & PUB. POL'Y 37, 42-43 (1998) (discussing the "unfairness" of this aspect of the ESA).

224. *Id.* at 44-48.

225. *See, e.g.*, John Kostyack, *Surprise!*, ENVTL. F., Mar./Apr. 1998, at 19 (presenting extensive criticism of the Babbitt administration's HCP reforms from the perspective of a National Wildlife Federation attorney); Thornton, *supra* note 209, at 95-96 (describing other organizations' criticisms).

to provide incentives to landowners to conserve habitat of candidate species,[226] and developed the Safe Harbors mechanism to provide incentives to promote the introduction of habitats of species already listed.[227] Neither of these mechanisms would have been conceived under the moralistic vision of the ESA, because both rely on landowners being able to take protected species. Yet, with these tools now in place, and if rigorous adaptive management is allowed to guide them, it is fair to say that the agency will be able to point to numerous instances in which landowner and agency combine efforts to yield something for both (and the species).[228] In the end, eco-pragmatism did more to advance the underlying normative concern of the ESA than the moralistic vision would have accomplished, and did so even while enhancing fairness to landowners.

III. WHAT ABOUT RECOVERY?

I have painted a rosy picture of the ESA with eco-pragmatic paint. Indeed, some may say it is a whitewash, as I have barely mentioned the central goal of the ESA—that of recovering species—embodied in the recovery plan program of section 4(f) of the ESA. Where does that appear in the model? The answer is, it doesn't. Notwithstanding that the stated purpose of the ESA is to "provide a program for the conservation of . . . endangered species and threatened species,"[229] that the statute defines conserve to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary,"[230] and that section 4(f) provides that the FWS and the NMFS "shall develop and implement" recovery plans for

226. Announcement of Final Policy for Candidate Conservation Agreements with Assurances, 64 Fed. Reg. 32,726 (June 17, 1999); *see also* Francesca Ortiz, *Candidate Conservation Agreements as a Devolutionary Response to Extinction*, 33 GA. L. REV. 413, 462-82 (1999) (explaining the CCA mechanism and comparing it to the former policy).

227. Announcement of Final Safe Harbor Policy, 64 Fed. Reg. 32,717 (June 17, 1999).

228. For a discussion of how the realigned incentives have produced positive endangered species outcomes, see Michael J. Bean, *Overcoming Unintended Consequences of Endangered Species Regulation*, 38 IDAHO L. REV. 409, 414-20 (2002).

229. 16 U.S.C. § 1531(b) (2000).

230. *Id.* § 1532(3).

listed species,[231] recovery efforts have been resigned to an adjunct status. There is latent potential there,[232] but it is yet unfulfilled and thus not a part of my ESA eco-pragmatic model.

As I explained earlier, the ESA, as implemented, uses a negative "no jeopardy" baseline rather than an affirmative "promote recovery" baseline.[233] That could have been different for federal agencies, however, as section 7(a)(1) could reasonably be construed as imposing an affirmative recovery duty on federal agencies. Judicial and administrative reluctance to fill out the duty so broadly has taken that possibility off the table.[234] Similarly, the courts have construed the "shall implement" language of section 4(f) to impose only a discretionary recovery plan implementation duty.[235]

With sections 7(a)(1) and 4(f) off the table, the recovery goal has no remaining teeth. The take prohibition in section 9 requires only that actors avoid take, not that anyone help the species along the road to recovery. Indeed, the standard for incidental take permits—that the applicant's project "will not appreciably reduce the likelihood of the survival and recovery of the species in the wild"[236]—expressly contemplates that permits may impose some marginal cost to recovery of the species.[237] Hence, either by explicit statutory containment or by administrative or judicial construction, recovery has been eviscerated as a meaningful component of the ESA's implementation model. It is, instead, a satellite program that occupies much of the agencies' aspirations but little of their

231. *Id.* § 1533(f).

232. For a thorough description of the origins, current framework, and future potential of the ESA recovery program, see Federico Cheever, *Recovery Planning, the Courts and the Endangered Species Act*, 16 NAT. RESOURCES & ENV'T 106 (2001).

233. *See supra* Part II.A.1.

234. *See supra* note 132 and accompanying text (stating that courts have allowed agencies to determine the extent of their duty).

235. *See* Fund for Animals, Inc. v. Rice, 85 F.3d 535, 547 (11th Cir. 1996) (commenting that "recovery plans are for guidance purposes only"); Defenders of Wildlife v. Lujan, 792 F. Supp. 834, 835 (D.D.C. 1992) (stating that a recovery plan is not an "action document"); *see also* Cheever, *supra* note 232, at 108-09 (discussing the inability to enforce recovery planning provisions).

236. 16 U.S.C. § 1539(a)(2)(B)(iv).

237. For a thorough discussion of this feature of the HCP criteria and the manner in which it suppresses a "promote recovery" baseline behavior under the ESA, see Robert J. Fischman & Jaelith Hall-Rivera, *A Lesson for Conservation from Pollution Control Law: Cooperative Federalism for Recovery Under the Endangered Species Act*, 27 COLUM. J. ENVTL. L. 45, 70-72, 144-46 (2002).

time and money.[238]

What should the eco-pragmatist make of this? Does this expose a flaw or weakness in eco-pragmatism generally, or in the eco-pragmatic model of the ESA specifically? Or does it simply reveal eco-pragmatism at work, doing its job of shaping outcomes that balance conflicting goals? Full recovery of the complete list of endangered species, after all, may not even be feasible.

These are by no means inconsequential questions. Under its "no jeopardy" baseline, the ESA has in fact kept many species from extinction,[239] but has recovered very few.[240] There is, in other words, very little recovery "bounce" to be gained from the "no jeopardy" approach.

Preservationists, I expect, will point to this performance reality as evidence that, in the end, eco-pragmatism will invariably cave in to economic interests, or at least be subjugated to them, and that eco-pragmatists may have insufficient political will or power to carry the day. In fact, however, it shows that the decisions about how to define baseline conditions and baseline behavior are fundamentally normative in character. In the case of endangered species, our society is not, at this time, ready to commit to a "promote

238. As has been observed, "[b]ecause recovery of listed species . . . is the goal of the ESA, it is somewhat surprising that recovery planning has maintained such a low profile among the Act's programs." Fischman & Hall-Rivera, *supra* note 237, at 57.

239. Only seven species have been removed from the list of endangered and threatened species because of post-listing extinction. U.S. GEN. ACCOUNTING OFFICE, REPORT TO THE CHAIRMAN, COMMITTEE ON GOVERNMENT REFORM, HOUSE OF REPRESENTATIVES, ENDANGERED SPECIES PROGRAM: INFORMATION ON HOW FUNDS ARE ALLOCATED AND WHAT ACTIVITIES ARE EMPHASIZED, No. GAO-02-581, at 6 (June 2002), http://www.gao.gov/new.items/d02581.pdf [hereinafter GAO REPORT]. Almost half of the listed species are considered stabilized or improving in population size. BUCK, *supra* note 206, at 5. For descriptions of the post-listing removals due to recovery and extinction, see ROBERT J. NOECKER, CONG. RES. SERV., REPORT FOR CONGRESS NO. 98-32: ENDANGERED SPECIES LIST REVISIONS: A SUMMARY OF DELISTING AND DOWNLISTING, http://www.cnie.org/nle/crsreports/biodiversity/biodv-18.cfm (Jan. 5, 1998). One recent study suggests rather strongly that the success of the ESA in achieving recovery of species is correlated closely, and not surprisingly, with appropriations. Julie K. Miller et al., *The Endangered Species Act: Dollars and Sense?*, 52 BIOSCIENCE 163, 167 (2002).

240. As of June 2002, twenty-nine years after the ESA was enacted, over 1200 animal and plant species found in the United States have been listed as endangered or threatened. In that period, only thirteen species have been removed from the list because of having achieved recovery from their imperiled status. GAO REPORT, *supra* note 239, at 6.

recovery" baseline, but has endorsed a "no jeopardy" baseline with considerable vigor and over the objections of many resourcists. From that starting point, as I have demonstrated above, the Babbitt administration's implementation of the ESA strongly supports using eco-pragmatism as a model for the ESA's future.[241]

Whether we *should* move the starting point from "no jeopardy" to "promote recovery" is a different question. It is one the answer to which could benefit from an open, honest, focused dialogue, a forum that seems never to materialize in the legislative, administrative, and judicial battles between preservationists and resourcists. Indeed, it is perhaps *the* fundamental question for the formulation of endangered species policy. Either approach, however, leaves the door wide open to eco-pragmatic implementation solutions, and society's choice of one over the other as the baseline reveals no weak underside to eco-pragmatism.

CONCLUSION

It is frequently argued that the ESA is a failure because so few listed species have been recovered and more species keep getting listed.[242] If that is an indictment of the ESA, it is an indictment of far more about humanity as well. The better question is, how many species once listed have nonetheless crossed the ESA's baseline and vanished forever? From that perspective, as noted above, the ESA is a success. Moreover, that number has been kept low notwithstanding that a great deal of economic activity and land development has proceeded under the ESA's watchful tenure. We have, in other words, held the "no jeopardy" baseline and found pragmatic solutions in case-specific decision settings when the baseline is not at risk.

The preservationists and the resourcists, not surprisingly,

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241. Although not framed explicitly as an eco-pragmatic undertaking, several commentators have proposed further evolution of the ESA toward goals that fulfill the eco-pragmatic agenda through greater emphasis on the use of specialized rules under section 4(d) of the statute, which allows the FWS and the NMFS to craft particularized conservation and regulation measures for threatened species. *See* Fischman & Hall-Rivera, *supra* note 237, at 133-60. This and other continued explorations of the eco-pragmatic potential of the ESA may prove fruitful.

242. *See* Michelle Desiderio, *ESA Reform: Facing Hard Truths*, *in* ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES, *supra* note 1, at 533, 549-50.

each have their alternative stories. Preservationists liken the ESA to plugging holes in the dike, and the dike is going to burst any moment under pressure from the "biodiversity crisis."[243] What appears to be working is simply holding off the catastrophe. All will soon be lost, irreversibly. On the other side, resourcists tell stories of outlandish applications of the ESA—the hospital that had to move to save a fly; the kindly old lady who lost her nest egg to save a bird—as if to say that the entire undertaking is a cost-benefit failure.[244] Financial ruin is around the corner.

There is some truth in both stories, but the ESA, now almost thirty years old, has evolved with them. Secretary Babbitt saw opportunities to address both concerns and seized on them in ways that were remarkably consistent with the eco-pragmatist model.[245] My advice is that, short of building a new eco-pragmatic statute from scratch (something I would be happy to think about some other time), we work on finding more such opportunities under the ESA. Indeed, that they have been there, and more may yet remain to be tapped, is no accident. I have suggested that, with some creative thinking, the ESA closely maps what I have described as the essential model of eco-pragmatic regulatory programs.

The point not to be lost, however, is that eco-pragmatism is a package of elements, all of which must be in place for any to work. The three-part instrumental framework of environmental baseline (the ESA's jeopardy prohibition), precautionary principle (the ESA's take prohibition), and impact assessment (the ESA's incidental take procedure) must fit together, working seamlessly as a system of decision-making instruments. Leaving any one part out means we have something other than eco-pragmatism in place. Moreover, the three parts cannot work to their fullest potential as a system in the absence of the two implementation elements—empiricism (the ESA's best available evidence standard) and adaptive management (as in the ESA's HCP program).[246]

Clearly, all the eco-pragmatism pieces are there for the ESA; Bruce Babbitt simply put them into play as a coherent

243. *See* William J. Snape III, *The Endangered Species Act: Anatomy of an Environmental Scapegoat*, *in* ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES, *supra* note 1, at 519, 519-26.

244. *See* Desiderio, *supra* note 242, at 533-49.

245. *See supra* notes 225-27 and accompanying text.

246. *See supra* Parts I.B.1-2.

whole. The preservationists and resourcists may prefer the old set of rules, but I believe, and hope I can convince others to believe, that we ought to take advantage of what Babbitt put in place, to run with that underlying structure for a while and let it play out. In short, when we think ESA, to think eco-pragmatically.