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A Manifesto for the Radical Middle

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I. INTRODUCTION

Nobody likes a bully. Yet I find myself surrounded by them in the field of environmental law. Nice people, really, until the discussion turns to topics such as endangered species, biodiversity, cost-benefit analysis, property rights, and ski-mobiles in national forests. Then they turn wild, pick sides, and begin waging war, with little care for the casualties to us in "the middle."

Alas, that has been the fate of those in the middle of environmental law and policy for decades. Our cries for moderation and reason are drowned out by the shrill rhetoric of the preservationist "tree huggers" on the one side, and the resourcist "bean counters" on the

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other side.[1] We are the weenies of environmental law--traitors to both sides. When the extremes do not outright ignore us, they portray us as gutless, spineless, passionless, malleable, and shameless shills for the "other side." I believe the term in vogue is to say that we have been marginalized. Well hear me now, fellow fence-sitters, it is time for the middle to fight back!

Perhaps I overstate the case, but it is hard to deny the contentious, hyper-binary nature of environmental law and policy these days and the lack of a defining, as opposed to defined, middle ground. As Dan Farber describes the chasm, the tree huggers are really the environmental version of neo-republicans, eschewing the individualistic tool of the market for pluralistic political institutions where public values, such as the environment, can be integrated in decision-making.[2] Their controlling metric for environmental policy is "willingness to vote."[3] The bean counters, by contrast, cling to the view that economic efficiency as mediated in the market is *the* measure of social welfare, requiring that we assess all environmental decisions according to their relative cost and benefit.[4] Their ultimate metric for environmental policy is "willingness to pay."[5] At bottom, the dispute is over the extent to which the market or politics should decide environmental policy issues.[6] These two sides share only "a belief that environmental policy can be based on a single overriding value, whether that value is economic or environmental."[7]

The metric of the middle is, of course, always defined by the extremes. Medium pants are the size somewhere between extra small and extra large. The middle thus always requires at least two points of reference to define its own identity. Indeed, the middle in environmental law most often is simply wherever the dust settles after the

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1. I borrow the terms "preservationist" and "resourcist" from J. Baird Callicott & Karen Mumford, *Ecological Sustainability as a Conservation Concept*, 11 CONSERVATION BIOLOGY 32, 34 (1997), wherein the authors identify these opposing philosophies as having dominated the first three quarters of the twentieth century. They refer, of course, to those on the one hand who wish to preserve nature, and those on the other hand who wish to use it. Using the more descriptive terms "tree huggers" and "bean-counters" to represent these combating perspectives, Dan Farber expertly outlines the positions each side takes in vociferous opposition to the other in DANIEL A. FARBER, ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD (1999).

2. *See* FARBER, *supra* note 1, at 43.

3. *Id.* at 42.

4. *See id.* at 39-41.

5. *Id.* at 42.

6. *See id.* at 41.

7. *Id.* at 9. *See also* David R. Spence, *The Shadow of the Rational Polluter: Rethinking the Role of Rational Actor Models in Environmental Law*, 89 CAL. L. REV. 971 (2001).

fray between the extremes. Don Elliott's masterful account of the enactment of the National Environmental Policy Act illustrates how a *passive* middle must accept what drops from the sky after the two extremes duke it out.[8] The result is a mish-mash that neither of the warring sides wanted and the middle had no hand in crafting. Most of the war afterwards is about which side can twist the outcome closer to what it had originally intended.

But it could happen that the middle draws its lines in the sand first (it will need to draw at least two), and assumes a *resistive* posture, defending its territory from incursions by the extremes. In this scenario, the middle has a hand in defining where it is, rather than being completely defined by the extremes. This more active middle is usually represented in environmental law through calls for more pragmatic decision-making frameworks, such as Dan Farber makes in his recent *tour de force*, *Eco-pragmatism*.[9] Under this posture, at least the middle can take credit for having had a hand in the outcome.

I have in mind something a step further, however. I have in mind an *aggressive* middle. An aggressive middle—what I will call, for purposes of rallying the troops, the *radical middle*—is a bully in its own right. It not only refuses to compromise its compromise position, it also roughs up anyone it thinks might dare to do so. It comes out swinging. It fights dirty too. It has passion.

The middle in environmental law has been mostly passive, sometimes resistive, and hardly ever aggressive. Of course, in the long run, it may not make much difference which approach the middle takes in terms of where the outcomes of policy debates land. It may be that an aggressive middle fights hard for an outcome that would have happened anyway. But I suspect that will not always, or even frequently, be the case. Moreover, the distinction between the passive, resistive, and aggressive middles runs deeper than outcomes; rather, it speaks to the underlying philosophy and passion of the people involved. A radical middle stands for something, believes in something. A passive middle is just there, in the middle.

It is, therefore, important to me to articulate the distinction between the passive, resistive, and aggressive middles with concrete examples, which I do in Part I of this Essay through policy issues par-

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8. *See* E. Donald Elliott et al., *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L. ECON. & ORG. 313, 326-38 (1985).

9. *See* FARBER, *supra* note 1. *See also* J.B. Ruhl, *Working Both (Positivist) Ends Toward a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522 (2000); Sidney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 U. KAN. L. REV. 689 (2000); Robert R.M. Verchick, *Feathers or Gold? A Civic Economics for Environmental Law*, 25 HARV. ENVTL. L. REV. 95 (2001).

ticularly relevant to the issue of biodiversity conservation and private lands: endangered species protection (passive middle), sustainable development (resistive middle), and the emerging policy of ecosystem management (aggressive middle). Part II then explores the tools a radical middle would use in its battle with the extremes. Principally, these are a richer base of information; more sophisticated models of ecological, economic, and social systems; and an adaptive management method of decision-making. Part III outlines some of the dangers this radical middle approach poses to the conventional environmental law decision-making system—the one the preservationists and resourcists have crafted and used to their advantage. In particular, the greater reliance on expert-derived data, complex models, and fluid management styles threaten the settled frameworks for public participation, agency discretion, and judicial review.

I will confess that, of the three themes covered in Parts I, II, and III, their order of discussion reflects not only what I consider to be a logical organization, but also corresponds to a declining level of detail in my development of the ideas. Part I re-orients some of my previous work with a new perspective not previously considered—that of how the middle position in environmental law and policy materializes. Part II fuses some of my current, less refined work in related fields to offer a game plan for what the radical middle needs to do to define itself and take the offensive. Using this theme, but offering relatively little detail, Part III outlines topics from my future research agenda that I believe will define the policy-making battleground between the radical middle and its foes on either extreme.[10] Indeed, the greatest fight ahead for the radical middle is not defining itself, but applying its message in a policy context that has become acculturated to battle by use of citizen participation and the rule of law as subversive weapons rather than constructive tools. A radical middle must be radical not only about changing policy, but also about transforming this process context.

II. THE MIDDLE—DEFINED OR DEFINING?

I will indulge in another overstatement and suggest that modern environmental law, what has happened from 1970 forward, began with an orgy of consensus. After all, the Endangered Species Act (ESA),[11] today's villain of the property rights movement, was the sub-

10. I am thankful to the *Idaho Law Review* for the opportunity to discuss these topics early in my formulation of their parameters and without the curse of obsessive "cite-itis."

11. 16 U.S.C. §§ 1531-1544 (2000). This Essay is by no means intended to provide a comprehensive overview of the law, policy, and practice under the ESA. For that

ject of relatively little debate in Congress and enjoyed broad, enthusiastic public support.[12] That did not last long. A middle materialized between two extremes. The question that motivates this section is, how did it materialize? Is the middle in environmental law and policy, or any field of law and policy for that matter, just a point defined as half-way between the two ends of a spectrum, or does it take an active role in defining the spectrum itself? The history of modern environmental law suggests a trend over the past three decades from the former dynamic toward the latter.

A. The Passive Middle—Dodging Endangered Species Act Bullets

The ESA, though hatched from consensus, quickly devolved into a pitched battle between preservationists and resourcists. An important component of environmentalism as it emerged out of the euphoria of the first Earth Day was the Deep Ecology movement: an ardent, ideological, fervent, yet ultimately small movement of deeply committed preservationists whose intensity fueled the early advancement of environmentalism.[13] The ESA, it turned out, was the perfect medium within which to move the Deep Ecology movement into the position of defining one end of the spectrum for environmental policy. Though the other laws enacted in the same time period clearly were meant to change the playing field in terms of the role markets and property rights would play in resource use decisions, the other laws contained numerous concessions to the cost-benefit approach of resourcism.[14] The ESA, by contrast, was susceptible to a more single-minded focus and unyielding demands. With only narrow exceptions, the ESA's

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background see STANFORD ENVTL. LAW SOC'Y, THE ENDANGERED SPECIES ACT: A GUIDE TO ITS PROTECTIONS AND IMPLEMENTATION (2001); MICHAEL J. BEAN & MELANIE ROWLAND, THE EVOLUTION OF NATIONAL WILDLIFE LAW 193-276 (3d ed. 1997); TONY A. SULLINS, THE ENDANGERED SPECIES ACT (2001).

12. *See* STANFORD ENVTL. LAW SOC'Y, *supra* note 11, at 20-21.

13. Deep Ecology, or ultra-preservationism, represents the most transformative-minded brand of environmental policy, highly biocentric in orientation and deeply committed to the singular goal of environmental preservation. Its defining works include ALDO LEOPOLD, *The Land Ethic*, *in* A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE (Ballantine Books 1970); JAMES LOVELOCK, THE AGES OF GAIA: A BIOGRAPHY OF OUR LIVING EARTH (1988); Bill Devall, *The Deep Ecology Movement*, 20 NAT. RESOURCES J. 299 (1980).

14. For example, the promulgation of effluent discharge limitations under the Clean Water Act involved a complex series of cost-benefit analyses with increasingly more stringent outcomes phased in over time. *See* 33 U.S.C. §§ 1311-1314 (1994). *See generally* E.I. du Pont de Nemours & Co. v. Train, 430 U.S. 112 (1997); Jonathan K. Baum, *Legislating Cost-Benefit Analysis: The Federal Water Pollution Control Act Experience*, 9 COLUM. J. ENVTL. L. 75 (1983).

prohibition of "take"[15] of protected species applied everywhere and to everyone in the United States.[16] In unequivocal terms, the ESA prevented federal agencies from causing or authorizing the extinction of species.[17] The ESA was potentially closer to zero tolerance than any other major environmental law passed in its day.[18]

This extreme application of the ESA remained a latent potential in the few years after enactment,[19] until the event that marks the icon of preservationism in environmental law: the Supreme Court decision in *Tennessee Valley Authority (TVA) v. Hill*.[20] In that case the Court halted the construction of a nearly completed federally-financed dam project because the federal agencies involved had not complied with the ESA.[21] When asked to refuse to enjoin the construction as a matter of equity and common sense, the Court found that the ESA "admits of no exception"[22] and "indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities."[23] The Court refused to "make such fine utilitarian calculations" given that "Congress viewed the value of endangered species as 'incalculable.'"[24] The Court thus exorcised utilitarian resourcism from the ESA.

TVA v. Hill earned the ESA the reputation of "pit bull of environmental law"[25] and began a two-decades long battle between pres-

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15. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19) (2000).

16. *See id.* § 1538(a)(1)(B). For an overview of the take prohibition as implemented, see Alan M. Glen & Craig M. Douglas, *Taking Species: Difficult Questions of Proximity and Degree*, 16 NAT. RESOURCES & ENV'T 65 (2001).

17. *See* 16 U.S.C. § 1536(a)(2) (2000). For an overview of the scope of federal agency duties with respect to species protected under the ESA, see STANFORD ENVTL. LAW SOC'Y, *supra* note 11, at 78-103; BEAN & ROWLAND, *supra* note 11, at 235-65; SULLINS, *supra* note 11, at 29-39, 59-87.

18. Because of this quality, "the act just didn't *look* like other legislation." CHARLES C. MANN & MARK L. PLUMMER, NOAH'S CHOICE: THE FUTURE OF ENDANGERED SPECIES 161 (1995). Although Congress may not have been aware of the ramifications of the ESA's different look, congressional staffers and others close to the drafting and enactment of the original version of the ESA have suggested that they both understood and intended the different look to carry the ESA where other laws enacted in the same time period had not ventured. *See id.* at 156-62.

19. *See* STANFORD ENVTL. LAW SOC'Y, *supra* note 11, at 21.

20. 437 U.S. 153 (1978).

21. For a thorough history of the project and its fate under the ESA, including how Congress later authorized finalization of the dam by special legislation and amended the ESA to create an exemption from the extinction prohibition, see MANN & PLUMMER, *supra* note 18, at 164-69.

22. *TVA*, 437 U.S. at 173.

23. *Id.* at 174.

24. *Id.* at 187.

25. *See, e.g.*, Steven P. Quarles, *The Pit Bull Goes to School*, THE ENVTL. FORUM, Sept.-Oct. 1998, at 55. The case has been described as a "ringing endorsement of the envi-

ervationists and resourcists in which the middle suffered extensive collateral damage. The ESA quickly became both the litigation weapon of choice for preservationists intent on slowing land development, and the whipping boy of resourcists stirring up a property rights rebellion in Congress. The pendulum swung back and forth many times during the 1980s and through the early 1990s.[26] Resourcists had their moments under the Reagan Administration, which saw James Watt in the position of Secretary of the Interior overseeing a "sagebrush rebellion," and in the Republican 104th Congress's short-lived assault on environmental law, which backfired politically. Preservationists scored victories mainly in the courts, such as the litigation leading to the listing of the northern spotted owl and the massive effect that it since has had on land-use in the western states. The pendulum swung indeed, but spent very little time in the middle as a result. The middle was simply a point being passed by during this period, and all those who advocated some level of balance and compromise in ESA policy were, for the most part, irrelevant. This defines a *passive middle.*

B. The Resistive Middle—Keeping All the Sustainable Development Parts Together

During its first two decades, as noted above, environmental law and policy retained sharp boundaries between environment and economy. Both themes were potent forces in shaping outcomes, and thus acted as mortal enemies. While this battle raged, however, social equity was hardly recognized as a player in the evolution of environmental law policy.[27] By contrast, the emergence of sustainable development in the 1990s as part of the "next generation" of environmental

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ronmentalists' proposition (and the basis of their empowerment strategy) that if citizens are able to prove a statutory violation, the court must enforce the law without equitable balancing." ZYGMUNT J.B. PLATER, ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 681-82 (2d ed. 1998).

26. For a good summary of the events discussed in the text that follows, see STANFORD ENVTL. LAW SOC'Y, *supra* note 11, at 22-30.

27. *See* CHRISTOPHER H. FOREMAN, JR., THE PROMISE AND PERIL OF ENVIRONMENTAL JUSTICE 1 (1998) ("Although environmentalists as individuals often sympathized with, and even actively supported, the political struggles of ethnic minorities (and African Americans in particular), environmentalism and civil rights/social welfare evolved as distinct issue spheres . . . . Environmentalism, especially at the national level, had little racial aspect as such."); Alice Kaswan, *Environmental Justice: Bridging the Gap Between Environmental Laws and "Justice,"* 47 AM. U. L. REV. 221, 256-78 (1997) (describing in detail the "tense history" between mainstream environmentalism and the civil rights/environmental justice movement).

policy[28] fused environment, economy, and equity into one policy triad.[29] To assemble its multi-dimensional policy agenda, sustainable development necessarily must borrow from mainstream environmentalism, market economics theory, *and* social equity causes such as environmental justice. However, sustainable development can only thrive if it resists being captured and dominated by any one of those three policy legs. It must stake out and remain in the middle if it is to remain relevant.

Nothing illustrates this quality of sustainable development better than the 1997 report of the President's Council on Sustainable Development (PCSD).[30] The PCSD summarized its report with a sixteen-point *"We Believe"* statement that completely abandons the preservationism-resourcism dichotomy.[31] Central to the statement was a ring-

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28. A working definition of sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." GRO HARLEM BRUNDTLAND, REPORT OF THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT: "OUR COMMON FUTURE" 43 (1987). At its broadest, sustainable development is the philosophy that today's progress must not come at tomorrow's expense and that human progress thus must be sustained not just in a few places for a few years, but for the entire planet into the distant future. *See* Jonathan Lash, *Toward a Sustainable Future*, 12 NAT. RESOURCES & ENV'T 83 (1997). Only recently have policy makers and commentators begun to hash out the legal framework for implementing sustainable development as a principle of governance rather than merely one of philosophy. *See* THINKING ECOLOGICALLY: THE NEXT GENERATION OF ENVIRONMENTAL POLICY (Marian R. Chertow & Daniel C. Esty eds., 1997) (exploring sustainable development concepts in a variety of applications demonstrating how sustainable development differs from traditional environmental law and policy); John C. Dernbach, *Sustainable Development as a Framework for National Governance*, 49 CASE W. RES. L. REV. 1 (1999).

29. *See* John Dernbach et al., *U.S. Adherence to Its Agenda 21 Commitments: A Five-Year Review*, 27 Envtl. L. Rep. (Envtl. L. Inst.) 10,504, 10,507 (1997) (Sustainable development "requires us to see that there is virtually no such thing as a purely economic, environmental, or social problem."); Susan L. Smith, *Ecologically Sustainable Development: Integrating Economics, Ecology, and Law*, 31 WILLAMETTE L. REV. 261, 263 (1995) ("Integrating economic and environmental concerns is the controlling policy objective of sustainable development.").

30. The PCSD issued its report in February 1997. *See* PRESIDENT'S COUNCIL ON SUSTAINABLE DEV., SUSTAINABLE AMERICA: A NEW CONSENSUS (1997) [hereinafter SUSTAINABLE AMERICA]. President Clinton commissioned the PCSD by executive order on June 29, 1993, to "develop and recommend to the President a national sustainable development action strategy that will foster economic vitality." Exec. Order No. 12,852, 58 Fed. Reg. 35,841 (July 2, 1993). The PCSD issued additional reports focusing on translating its recommended policies into concrete measures, see PRESIDENT'S COUNCIL ON SUSTAINABLE DEV., BUILDING ON CONSENSUS: A PROGRESS REPORT ON SUSTAINABLE AMERICA (1997), and was authorized "to continue its work by continuing to forge consensus on policy, demonstrating implementation, getting the word out about sustainable development, and evaluating progress." 62 Fed. Reg. 45,283 (Aug. 26, 1997). For further background and description of the PCSD's work and its place in the emerging domestic sustainable development policy, see Lash, *supra* note 28, at 83-84; Dernbach et al., *supra* note 29, at 10,507-08.

31. SUSTAINABLE AMERICA, *supra* note 30, at v-vi.

ing endorsement of the fusion of economy, environment, and equity into a united policy triad. For example, the PCSD prominently declared that "[e]conomic growth, environmental protection, and social equity are linked,"[32] reiterating that theme in several different points of the *"We Believe"* statement[33] as well as in the body of the report.[34] The PCSD also contended that the primary lesson learned from the last twenty years of environmental policy is that "[e]conomic, environmental, and social problems cannot be addressed in isolation."[35] The PCSD report thus demonstrates that sustainable development policy in the United States affirmatively and strategically treats economy, environment, and equity as three inseparable dimensions in order to avoid any one of those policy nodes from defining the new concept.

Indeed, from its earliest emergence, the sustainable development movement has steadfastly fused the economic, environmental, and social realms, demanding that they be balanced spatially and intergenerationally. It has resisted efforts by resourcists, preservationists, and culturalists to emphasize one leg over the other three, and, quite expectedly, has been roundly criticized by those camps.[36] Sustainable development policy thus defined itself, albeit by picking and choosing policies from among three polar extremes, and has since defended its centrist policy amalgam. This defines a *resistive middle*.

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32. *Id.* at vi (point 10).

33. *Id.* at v (point 2) (Sustainable development will help "lead to the mutually reinforcing goals of economic growth, environmental protection, and social equity."); *id.* at v (point 3) (Steady progress in reducing social disparities "is essential to economic growth, environmental health, and social justice."); *id.* at v (point 5) (Economic growth is "essential for progress toward greater prosperity, equity, and environmental quality."); *id.* at vi (point 9) (Local communities must increase their roles "in decisions about environment, equity, natural resources, and economic progress."); and, *id.* at vi (point 16) (Citizens must be educated "to understand the interdependence of economic prosperity, environmental quality, and social equity.").

34. *See, e.g., id.* at 12 (stating the first three goals of the PCSD's work are to help secure health and the environment, economic prosperity, and equity); *id.* at 25 (the essential components of sustainable development are environmental health, economic prosperity, and social equity and well-being).

35. *Id.* at 26.

36. *See, e.g.*, Bill Willers, *Sustainable Development: A New World Deception*, 8 CONSERVATION BIOLOGY 1146 (1994) (objecting to the economic component of the sustainable development message); J. William Futrell, *The Transition to Sustainable Development Law*, ENVTL. L. INST. RESEARCH BR. No. 3, Apr. 1994, at 1 ("some American environmentalists see the sustainable development movement as a threat undermining the environmental protection efforts of the last generation"); ALLAN K. FITZSIMMONS, DEFENDING ILLUSIONS: FEDERAL PROTECTION OF ECOSYSTEMS 149 (1999) ("New paradigmists seize the issues of sustainability and sustainable development as a means of using the political process to protect their goddess, Mother Earth.").

C. The Aggressive Middle—Ecosystem Management Stirs the Pot

The mid-1990s witnessed the emergence of new perspectives on environmental policy-particularly for biodiversity conservation-that openly challenged the conventional binary division of resourcist and preservationist approaches. Ecosystem management, championed by Bruce Babbitt as the Clinton Administration's Secretary of the Interior, as well as by many leaders in other federal and state agencies, puts a spin on environmental policy that is clearly at odds with both extremes and is gaining ground on them.

Ecosystem management is not simply the dust that has settled from the preservationist-resourcist ESA battles, or an overt attempt to fuse contrasting policies such as sustainable development has done, but rather a new idea that the middle hatched on its own. It is defined, loosely, as "management driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function."[37] This pins down little, but that is by design. Ecosystem management is as slippery as it needs to be to win the day. And its advocates, particularly Babbitt, came out fighting with it.

And there is plenty with which to fight. Ecosystem management has scientific nobility in its roots. Charles Darwin focused the scientific community's attention on the importance of ecological contexts with the publication of his works on natural selection beginning in 1859, though the term ecology did not surface until 1869, and the science of ecology did not begin in earnest before 1890.[38] The Oxford ecologist Sir Alfred George Tansley first introduced the term ecosystem in 1935 to describe the basic functional unit in the study of ecology.[39] The idea stuck, and through the efforts of ecologists such as Eugene P. Odum in the 1950s, it evolved into the core of modern ecology research.[40] Odum subscribed to the "homeostasis" view of ecosystems positing that, much like the growth of individual organisms toward a homeostatic state:

37. Norman L. Christensen, *The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management*, 6 ECOLOGICAL APPLICATIONS 665 (1996).

38. For an excellent lawyers' history of the discipline of ecology and the role the ecosystem concept has played in it, see Fred P. Bosselman & A. Dan Tarlock, *The Influence of Ecological Science on American Law: An Introduction*, 69 CHI.-KENT L. REV. 847, 849-70 (1994).

39. *See id.* at 861.

40. *See id.* at 862-63.

> [E]quilibrium between organisms and environment may also be maintained by factors which resist change in the system as a whole. Much has been written about this "balance of nature" but only with the recent development of good methods for measuring rates of function of whole systems has a beginning been made in the understanding of the mechanisms involved.[41]

As it turned out, however, the beginning to which Odum referred, propelled later by the advent of the high-speed computer, led to research that blew past the homeostasis thesis to forge the theory of "nature as flux."[42] Under this emerging model, the richness and diversity of ecological systems in the environment will forever defy our full grasp, as they are "continually in flux and exhibit a wondrous panoply of interactions such as mutualism, parasitism, biological arms races, and mimicry . . . . Matter, energy, and information are shunted around in complex cycles."[43] In other words, the environment operates in a state of highly complicated organized disorder.

This new take on ecosystem dynamics led directly to ecosystem management policy.[44] Threads of scientific research and commentary consistent with the ecosystem management theme extend back well into the 1980s, but until the early 1990s writers did not routinely use the phrase ecosystem management as a familiar term of art. It is rare in the current scientific literature on ecosystem management to find references to books and articles published before 1990. One of the formative scientific writings on the subject, cited in virtually every subsequently published treatment, is from 1994.[45] On the other hand, the number of writings focused on ecosystem management has exploded in the short amount of time since then. A recent article that attempts to synthesize many of the themes of ecosystem management commentary cites over 100 scientific books and articles with publication dates after 1990.[46] This volume of publications and the variety of respected journals in which they appear indicates that ecosystem management has become an important and widely described idea. In-

41. *Id.* at 866 (quoting EUGENE P. ODUM, FUNDAMENTALS OF ECOLOGY 25 (2d ed. 1959)).

42. *See id.* at 869-70.

43. JOHN H. HOLLAND, HIDDEN ORDER: HOW ADAPTATION BUILDS COMPLEXITY 3 (1995).

44. *See* John M. Blair et al., *Ecosystems as Functional Units in Nature*, 14 NAT. RESOURCES & ENV'T 150 (2000) (describing the connection between advances in ecology research and the formation of ecosystem management policy).

45. *See* R. Edward Grumbine, *Reflections on "What Is Ecosystem Management?"* 11 CONSERVATION BIOLOGY 41 (1997).

46. *See* Steven L. Yaffee, *Three Faces of Ecosystem Management*, 13 CONSERVATION BIOLOGY 713 (1999).

deed, environmental law scholarship has been quick to embrace this new policy thrust and its underlying "nature as flux" view.[47] Broad policy agendas have been outlined extending "systems management" thinking in a broad array of environmental law contexts.[48] It has even worked its way into law school case books![49]

Over at the Department of the Interior, Babbitt deliberately and skillfully used the emerging policy idea of ecosystem management as the theme for carrying out a transformation of ESA policy.[50] As administered through the U.S. Fish and Wildlife Service (FWS) from within Interior for terrestrial and freshwater species, and through its sister agency under the ESA for marine and anadromous species, the National Marine Fisheries Service (NMFS) of the Department of Commerce, the ESA had long been hemmed in by its species-specific focus. The story of these two agencies' aggressive effort to infuse the ESA with ecosystem management policy began in March 1994 with FWS's publication of *An Ecosystem Approach to Fish and Wildlife Conservation*, which the agency portrayed as its road map for applying "the concept of managing and protecting ecosystems to everything the Service does."[51] FWS announced through this publication that, where it can, it will attempt to use its powers to manage on the ecosystem level, for protection of ecosystem dynamics, and thereby promote conservation of all the assembled species and environmental qualities. The agency promised that specific ecosystem-based reform measures for the ESA would follow.

FWS soon lived up to its promise through other initiatives, often hand-in-hand with NMFS. Shortly after FWS published the *Ecosystem Approach* agenda, FWS and NMFS adopted a series of significant policies designed to take the new focus on ecosystem dynamics straight to the ESA. The engine behind the agencies' approach was

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47. *See, e.g.*, Jonathan Baert Wiener, *Beyond the Balance of Nature: Environmental Law Faces the New Ecology*, 7 DUKE ENVTL. L. & POL'Y F. 1 (1996); Symposium, *Ecology and the Law*, 69 CHI.-KENT L. REV. 847 (1994). For the most current, comprehensive, and coherent synthesis of the scientific basis of ecosystem management and its implications for law and policy, see Fred Bosselman, *What Lawmakers Can Learn from Large-Scale Ecology*, J. LAND USE & ENVTL. L. (forthcoming Apr. 2002) (manuscript on file with author).

48. *See, e.g.*, THINKING ECOLOGICALLY, *supra* note 28.

49. *See, e.g.*, FREDERICK R. ANDERSON ET AL., ENVIRONMENTAL PROTECTION: LAW AND POLICY 28-70 (1999).

50. For insider descriptions of Babbitt's agenda in this regard, 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).

51. U.S. FISH & WILDLIFE SERV., AN ECOSYSTEM APPROACH TO FISH AND WILDLIFE CONSERVATION: AN APPROACH TO MORE EFFECTIVELY CONSERVE THE NATION'S BIODIVERSITY 5 (Mar. 1994).

the realization that, whereas the agencies do not have the discretion to transform the ESA into an ecosystem protection statute, nothing in the statute prevents the agencies from considering ecosystem factors in making species-specific decisions. For example, the agencies announced that they would "promote healthy ecosystems through activities undertaken by the Services under authority of the Endangered Species Act" by, among other things, incorporating ecosystem-level considerations into species listings and recovery planning under § 4 of the Act.[52] FWS and NMFS cemented their ecosystem management policies for the ESA in a number of subsequent publications and announcements during the 1990s.[53]

By the late 1990s ecosystem management had become the new defining model for how the ESA can be implemented as a matter of official policy. Other federal and state agencies were following suit.[54] The success of what Babbitt had started can be measured in the ire ecosystem management policy has raised in preservationists and resourcists alike. At one extreme, some people decry ecosystem management *on any basis* as an unwarranted human interference with nature. This "nature knows best" and "leave only footprints" camp follows the ultra-preservation principle of "nondestruction, noninterference, and generally, nonmeddling."[55] Wildness is their currency, and "many who value wildness, although unable to say exactly what it is, are nonetheless positive that less management is better manage-

52. Notice of Interagency Cooperative Policy for the Ecosystem Approach to the Endangered Species Act, 59 Fed. Reg. 34,273 (July 1, 1994).

53. For example, in 1997 the two agencies jointly published a policy statement emphasizing how the emerging ecosystem management approach would guide their ESA implementation in a variety of specific programs. *See* U.S. FISH & WILDLIFE SERV., MAKING THE ESA WORK BETTER: IMPLEMENTING THE 10 POINT PLAN . . . AND BEYOND (June 1997). For descriptions of the specific policies Interior adopted under Babbitt and the reactions of preservationist and resourcist interests, 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 (1998); Robert D. Thornton, *Habitat Conservation Plans: Frayed Safety Nets or Creative Partnerships?*, 16 NAT. RESOURCES & ENV'T 94 (2001).

54. *See* CONG. RESEARCH SERV., ECOSYSTEM MANAGEMENT: FEDERAL AGENCY ACTIVITIES (Apr. 19, 1994) (canvassing ecosystem management policy development efforts of federal land management agencies); U.S. GEN. ACCOUNTING OFFICE, ECOSYSTEM MANAGEMENT: ADDITIONAL ACTIONS NEEDED TO TEST A PROMISING APPROACH (Aug. 1994) (canvassing ecosystem management policy development efforts of federal land management agencies); U.S. ENVTL. PROT. AGENCY, ECOSYSTEM PROT. WORKGROUP, TOWARD A PLACE-DRIVEN APPROACH: THE EDGEWATER CONSENSUS ON AN EPA STRATEGY FOR ECOSYSTEM PROTECTION (Mar. 15, 1994 Draft) (outlining ecosystem management policy development initiative); FLA. DEP'T OF ENVTL. PROT., BEGINNING ECOSYSTEM MANAGEMENT (1994) (outlining ecosystem management policy development initiative).

55. Tom Regan, *The Nature and Possibility of an Environmental Ethic*, 3 ENVTL. ETHICS 19, 31 (1981).

ment."[56] For them, therefore, ecosystem management is an unwarranted intrusion on the soul of ecosystems.

Others, however, condemn ecosystem management as an unwarranted intrusion on private property rights. Allan K. Fitzsimmons, for example, contends that ecosystem management, "if fully implemented, would greatly intrude on the property rights of all Americans."[57] It is a form of "national land use planning wherein nature protection takes precedence over improvements in human well-being."[58] For Fitzsimmons and others of this view, therefore, ecosystem management is a form of "nature worship," overly biocentric in perspective and relying too heavily on management of private land to achieve its goals.

Ecosystem management thus is squarely in the middle, but this is a different kind of middle. Ecosystem management defined itself and aggressively challenged the status quo. It is not simply a compromise position. It advances a philosophy independent of the two extremes. It represents something concrete, albeit defined in such a way as to escape being pinned down. It is crafty in that sense. It also forces the question–are you for ecosystem management or against it, in which case you are for ecosystem *mis*management! Maybe all this is dirty pool, but who among the preservationists and resourcists can cast the first stone? Ecosystem management is the kind of middle I am talking about. This defines the aggressive middle, the *radical middle*.

III. TOOLS OF THE TRADE—FIGHTING FIRE WITH FIRE

It is significant that ecosystem management has deep and respected roots in science. When asked to defend itself, to support its position, the passive middle has nothing to say. It has no "position" in the advocacy sense—it just happened. The resistive middle, by contrast, can defend its position by pointing to the compromise lines it drew and articulating their merit. Sustainable development policy, for example, can argue that it has combined the best from economic, environmental, and social domains into a new policy recipe. While this may result in a normative position in the true sense of the word, it is not a position born of *invention*. Ecosystem management, however, is its own world view based on its own set of principles. It is not a recipe or amalgam, but an independently-devised, scientifically-based policy position in its own right.

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56. Peter Alpert, *Incarnating Ecosystem Management*, 9 CONSERVATION BIOLOGY 952 (1995).

57. FITZSIMMONS, *supra* note 36, at 16.

58. *Id.*

This is the defining characteristic of the radical middle. *This* is what gives the radical middle something with which to fight. Just as its extremist foes have so successfully done for decades, the radical middle will enter the fray armed with three weapons: (A) its own set of information; (B) its own model of how the world works; and (C) its own method of policy implementation.

A. Information

Our economic system generates and assesses mountains of data every day with which to make short-range and long-range policy decisions. Social and demographic statistics also are abundant. Where we are lacking in adequate databases, however, is with respect to the environment and, more importantly, the dynamics of ecosystem processes. Increasingly, environmental policy is appreciating the importance of filling those information gaps and the usefulness of rich information bases in shaping policy and influencing behavior toward the environment.[59] The radical middle, whether through its ecosystem management policy or other initiatives, will not prevail in its policy agenda until it builds and taps into this source of power.

The challenge in this regard goes deeper than simply collecting lots of information; rather, we have to decide what information is relevant. National and international organizations have for several years been searching for the right "indicators" of sustainable development.[60] But to the extent these indicators reflect discrete sets of environmental, economic, and social data, multi-factorial decisions will remain difficult. Thus, an emerging trend has been to identify interdisciplinary indicators that focus on more than one domain at once.

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59. *See* David W. Case, *The Law and Economics of Environmental Information as Regulation*, 21 Envtl. L. Rep. (Envtl. L. Inst) 10,773 (2001); David P. Clarke, *EPA In the Information Age*, THE ENVTL. F., May-June 2001, at 22; Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 GEO. L.J. 257 (2001).

60. In *Sustainable America*, the PCSD recognizes that we must identify indicators of national environmental, economic, and equity progress. SUSTAINABLE AMERICA, *supra* note 30, at 14-16. The PCSD devotes several pages of the report to the topic of information, noting that present databases are not always in a form useful to sustainable development decision-making and that the relations between environment, economy, and equity are an important but largely unaddressed topic of research. *Id.* at 58-69. *See also* U.S. INTERAGENCY WORKING GROUP ON SUSTAINABLE DEV. INDICATORS, SUSTAINABLE DEVELOPMENT IN THE UNITED STATES—AN EXPERIMENTAL SET OF INDICATORS (final review draft) (Apr. 16, 1998). This effort is also the focus of the United Nation's Commission on Sustainable Development, which has been working toward developing a set of indicators of sustainable development for all countries to use by the year 2000. UNITED NATIONS, DEP'T FOR POLICY COORDINATION AND SUSTAINABLE DEV., DIV. OF SUSTAINABLE DEV., INDICATORS OF SUSTAINABLE DEVELOPMENT *available at* http://www.un.org/esa/sustdev/isd.htm (last visited Feb. 26, 2002).

For example, efforts to quantify the value of "nature's services" and to develop a more rigorous discipline of environmental economics are designed to produce data and indicators in a form more relevant to ecological conditions.[61]

Evidence that information building has become the primary mission of the ecosystem management movement is solidified by the June 1998 report of a panel of the President's Committee of Advisors for Science and Technology (PCAST), *Teaming With Life*.[62] PCAST recognizes that in order "to optimize the union between the environment and the economy" we need "an extensive and frequently updated environmental knowledge base."[63] One of its key recommendations is that "[s]teps should be taken to focus interdisciplinary economic, sociological, and ecological research on the relationship between the market economy and natural capital, between society and the biosphere."[64] The PCAST's recommendations in that regard must be aggressively implemented for the radical middle to take off its gloves and fight.

B. Models

Data without theory is just data. Banks of information about the environment and ecosystems will do us little good without some model with which to put the data to use. The middle in environmental policy has lacked its own theories of how the world works, its own models of the environment. Thus, a key tool of the radical middle will be incorporating the information it collects into more sophisticated models of ecological, economic, and social systems and their interface, to allow the manipulation of data in "what if" scenarios, to test different policy solutions, and to refute the claims of the extremes. As PCAST recognized with respect to ecosystem management policy, "increasingly sophisticated modeling paradigms and algorithms will be important tools, not only for conducting theoretical research to understand our living resources, but also for translating the research results into use-

61. *See* NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen C. Daily ed., 1997); GEOFFREY HEAL, NATURE AND THE MARKETPLACE: CAPTURING THE VALUE OF ECOSYSTEM SERVICES (2000). For discussions of how the results of these research efforts can be translated into legal doctrine, see James Salzman, *Valuing Ecosystem Services*, 24 ECOLOGY L.Q. 887 (1997); James Saltzman et al., *Protecting Ecosystem Services: Science, Economics, and Law*, 20 STAN. ENVTL. L.J. 309 (2001).

62. *See* PRESIDENT'S COMM. OF ADVISORS ON SCI. AND TECH., PANEL ON BIODIVERSITY AND ECOSYSTEMS, TEAMING WITH LIFE: INVESTING IN SCIENCE TO UNDERSTAND AND USE AMERICA'S LIVING CAPITAL (1998), *available at* http://www.ostp.gov/environment/html/teamingcover.html) [hereinafter TEAMING WITH LIFE].

63. *Id.* at 1.

64. *Id.* at 4.

ful and useable tools for ecosystem management."[65] Serious work on that front is beginning to emerge.

The most promising modeling tool for such purposes is known as Geographic Information Systems (GIS). Defined formally as "a system of hardware, software, data, people, organizations and institutional arrangements for collecting, storing, analyzing and disseminating information about areas of the earth,"[66] GIS is not limited to working within the traditional cartographic discipline of geography. Rather, its ability to work with "surfaces" and "vectors" of any variable or set of variables that has a geographic or other dimensional component,[67] proves very useful not only as a way of displaying static ecological conditions, but also as a tool for more efficiently and reliably modeling factors that affect those conditions and immediately seeing how manipulations of those factors affect overall ecosystem dynamics. As with any computer software, however, GIS is only as good as the algorithms it uses to do its work, and thus using GIS will require that we explicitly develop reliable algorithms for ecosystem management rather than depend exclusively on expert judgments about the future.[68]

To do so, the PCAST has called for a "next generation" National Biological Information Infrastructure to create a "fully digitally accessible, distributed, interactive research library system,"[69] and for GIS-based and similar modeling tools that can "efficiently search through terabytes of . . . biodiversity and ecosystems datasets, make correlations among data from disparate sources, compile those data in new ways, analyze and synthesize them, and present the resulting information in an understandable and useable manner."[70] In essence, the radical middle must bring its arsenal of information and modeling up to the level already achieved for economic and social data and theory. Until that vision is achieved, ecosystem management will remain a

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65. *See id.* § II, at 12. The scientific community is in agreement that substantial progress is needed on this front. *See* Robert Costanza, *Ecological Economics: Reintegrating the Study of Humans and Nature*, 6 ECOLOGICAL ECON. 978 (1996); 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 (1996) ("Ecosystem management should be rooted in the best current models of ecosystem functioning."); James S. Clark et al., *Ecological Forecasts: An Emerging Imperative*, 293 SCI. 657 (2001).

66. NICHOLAS CHRISMAN, EXPLORING GEOGRAPHIC INFORMATION SYSTEMS 5 (1997).

67. *See id.* at 157-83.

68. *See, e.g.*, Stuart L. Pimm & John H. Lawton, *Planning for Biodiversity*, 279 SCI. 2068 (1998) (discussing the importance of GIS algorithms in the discipline of biogeography, using the example of studies correlating land values and endangered species locations).

69. TEAMING WITH LIFE, *supra* note 62, § IV, at 1.

70. *Id.*

policy that is difficult to know how to practice. Indeed, it will be difficult for the radical middle to advance its agenda in general until it develops these robust models.[71]

C. Method

Armed with its model of ecosystem dynamics, the essence of ecosystem management policy is a management philosophy that maps ecosystem dynamics onto policy implementation. Ecosystem management, in other words, must be every bit as dynamical as the ecosystems it seeks to manage. Ecosystem management policy statements and scientific literature thus refer to a set of policy implementation methods intended to move decision-making from a process of battling over standards to be fixed permanently or nearly so, to one of experimentation using continuous monitoring, assessment, and recalibration. This management theory, known as adaptive management, traces its origins to C.S. Holling's influential book from the late 1970s, *Adaptive Environmental Assessment and Management*.[72]

Holling and his fellow researchers found conventional environmental management methods at odds with the emerging model of ecosystem dynamics. They focused on four basic properties of ecological systems to provide the premises of a new management method. First, although the parts of ecological systems are connected, not all parts are strongly or intimately connected with all other parts. 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. The connections within ecosystems are themselves selective and variable, meaning what should be measured will depend on our understanding of the way the system as a whole works. Second, events are not uniform over space, meaning that impacts of development do not gradually dilute with distance from the development. In particular, induced effects of 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. Small variations in conditions such as temperature, nutrient content, or species composition can "flip" ecosystems into

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71. Indeed, keen to the power of models, some critics from the extremes have already begun to attack the "flux" model of ecosystems upon which ecosystem management (and the radical middle) bases itself. *See* FITZSIMMONS, *supra* note 36, at 144.

72. ADAPTIVE ENVIRONMENTAL ASSESSMENT AND MANAGEMENT (Crawford S. Holling ed., 1978). *See, e.g.*, Kai N. Lee & Jody Lawrence, *Restoration Under the Northwest Power Act: 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).

vastly different behavioral states, sometimes well after the event that started the reaction. The upshot is that the unexpected can happen, and it will be difficult to predict when, where, and to what degree. Finally, Holling's group observed that because ecosystems are not static but in continual change, environmental quality is not achieved by eliminating change. Flood, fire, heat, cold, drought, and storm continually test ecosystems, enhancing resilience through system "self-correction." Efforts to suppress change are thus not only futile, but counter-productive.

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. Whereas resourcists and preservationists have battled to "lock in" positions through fixed rules and standards and preserve every inch of incremental ground gained, an adaptive management framework is more experimentalist, relying on iterative cycles of goal determination, performance standard setting, outcome monitoring, and standard recalibration. This brand of adaptive management has evolved well beyond an idea, as FWS and NMFS have 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."[73] Indeed, there is broad consensus today among resource managers and academics that adaptive management is the only practical way to implement ecosystem management.[74] Going a step further, it is the only way to implement the radical middle agenda.

IV. POINTS OF FRICTION—CAN THE CONVENTIONAL ENVIRONMENTAL LAW SYSTEM HANDLE THE RADICAL MIDDLE?

The radical middle's agenda threatens the resourcists and preservationists not only because it challenges their creeds, but because it subverts the policy-making processes they use to carry out their bat-

73. 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).

74. *See* Ronald D. Brunner & Tim W. Clark, *A Practice-Based Approach to Ecosystem Management*, 11 CONSERVATION BIOLOGY 48 (1997); Paul L. Ringold et al., *Adaptive Management Design for Ecosystem Management*, 6 ECOLOGICAL APPLICATIONS 745 (1996); Anne E. Heissenbuttel, *Ecosystem Management—Principles for Practical Application*, 6 ECOLOGICAL APPLICATIONS 730 (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., *supra* note 37.

tle. Indeed, if anything is a live-or-die proposition for the radical middle, it is the battle over process, not position. This battle will take place on three fronts: (A) the role of public participation; (B) the discretion afforded to administrative agencies; and (C) the standards of judicial review.

A. Public Participation

Public participation, in the form of notice and comment rule making, environmental impact statements, and citizen suits, has been the workhorse of preservationist tactics in environmental policy, and more recently of resourcists who have learned by observation.[75] Each side claims to represent the "public interest" while claiming the other side advances "special interest" agendas. What is "public" and what is "special" has become a matter simply of who is doing the talking.

As these two "publics" have increasingly demanded "a seat at the table" in all agency decision deliberations,[76] public participation has

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75. *See* Jim Rossi, *Participation Run Amok: The Costs of Mass Participation for Deliberative Agency Decisionmaking*, 92 NW. U. L. REV. 173 (1997).

76. *See, e.g.*, DEFENDERS OF WILDLIFE, FRAYED SAFETY NETS 59-61, 80-81 (1998). The Defenders of Wildlife issued the following critique of the Endangered Species Act permitting program known as the Habitat Conservation Plan (HCP) permits based on lack of public participation:

> Citizens from various stakeholder groups have no formal role in the HCP process except through the public comment period and, for some plans, through the National Environmental Policy Act or requirements of state or local law. Often, by the time public meetings occur or official drafts are released for comment, however, both the regulated interests and the services have invested so much money and time in plan development that they are unlikely to change course. . . . [C]itizens (including those representing the environmental community) generally have not had a seat at the negotiating table in many major recent negotiations despite the fact that conservationists (in addition to FWS) represent the public's interest in protecting endangered species . . . .
>
> For the vast majority of plans . . . public participation was not adequate, given the plans' large effects on public resources. The most glaring examples are large-scale, single-landowner plans that significantly affect public resources. . . . While those plans did have public meetings and/or formal comment periods, the conservation strategies resulted from private negotiations with largely token attempts at listening to the public's concerns. In addition, numerous small-scale HCPs reviewed here involved exclusive negotiations between the landowner and FWS . . . . This lack of public participation has resulted from an absence of formal requirements to involve the public and the limited leverage of citizens who do not have a direct financial stake in negotiations.

See id. at 41, 43-44.

become not the engine of policy deliberation, but an impediment.[77] Adaptive management cannot work if citizens can challenge every recalibration decision with this full range of public participation tools. There must be some insulation of the adaptive management process from the debilitating participation of every interest group demanding a "seat at the table" and right to challenge each and every move the agency makes.

In return for placing a moderating boundary on public participation, the radical middle offers (1) greater transparency of decisionmaking, and (2) open access to the information stream upon which adaptive management depends. Adaptive management is not black box management. Because it thrives on and generates information and constant deliberation, it is an open, team-oriented decisionmaking process that offers a richer field of information to the public. Public participation, therefore, can shift from being a force of obstruction to one that promotes more effective collection and use of information. The public, in this model, becomes part of a team, not party to a negotiation. This, of course, runs contrary to the way in which preservationists and resourcists have used information in the past as something to filter, spin, and then "put in the record" for use later in litigation against the agency and the other side.

B. Agency Discretion

Perhaps adaptive management is the only practical way to implement ecosystem management, but is adaptive management *politically* feasible? Holling himself has recognized that adaptive management requires flexible institutions, as in "ones where signals of change are detected and reacted to as a self-correcting process."[78] But how, politically and legally, would this "self-correcting process" be constructed within resource management agencies? Will the public have a right to participate in the "self-correction process," and how will judicial review be conducted of the "self-correction process" decisions? In short, is our political context willing to give agencies the discretion they would need to engage in constant "self-correction" free of legislative, judicial, and citizen oversight and challenge? As one of the leading figures in ecosystem management has observed, agencies "have

77. *See* Rossi, *supra* note 75, at 179 ("When the ideals produce conflicting demands on decisionmakers or participants, there is a trade-off between participation and deliberation: increased participation comes only at the cost of diminished deliberation.").

78. C.S. Holling, *Surprise for Science, Resilience for Ecosystems, and Incentives for People*, 6 ECOLOGICAL APPLICATIONS 733, 735 (1996).

not often been rewarded for flexibility, openness, and their willingness to experiment, monitor, and adapt."[79]

Perhaps agency discretion under adaptive management frameworks will need to be enhanced within the sharply bounded range of variability of outcomes contemplated under the particular adaptive management regime. Deference to agency action outside this range could be diminished. This form of "bounded discretion" relies on citizen groups to act as watchdogs to identify when the agency has violated the boundaries, but not as functional participants in the constant self-correction process of monitoring, assessment, and recalibration. Again, that is going to be a big pill for resourcists and preservationists to swallow.

C. Judicial Review

Dan Tarlock has observed that the rhetoric of preservationism shares many traits with the post-modern, transformative theories of critical legal studies, as both seek to destabilize and redistribute the boundaries of property and power.[80] But preservationism in *practice*—that is, the way it approaches environmental law—has taken all its cues from the brand of die-hard positivism associated with the conservative interests of resourcism.[81] True to the positivist theory of rules as communication of pre-existing binding standards, environmentalists have stood on, not deconstructed, the rule of law as resolutely as would any resourcist.[82] Their litigation record to uphold the law, not change it, is impressive. As Tarlock puts it, the preservationists are "thinking Unger but pleading Hart."[83] The resourcists, of course, are thinking *and* pleading Hart.

The radical middle has something completely different in mind. For the radical middle, there are no *a priori* "right" outcomes to enforce in court. There are no prescriptive rules with which to test the merit of the present and future, for the future will necessarily involve new sets of conditions and new rules of ecological dynamics. To be sure, there are reference points, procedures to follow, and mistakes that can happen. Decisions under adaptive management can be wrong. But the issue is how to involve the courts in identifying which are wrong and deciding what to do about them. The radical middle, through its tool of adaptive management, leaves much of that to the

79. Grumbine, *supra* note 45, at 41.

80. *See* A. Dan Tarlock, *The Future of Environmental "Rule of Law" Litigation*, 17 PACE ENVTL. L. REV. 237 (2000).

81. *See id.* at 247-54.

82. *See id.* at 251-52.

83. *Id.*

agencies charged with policy implementation. Again, this difference over policy process, far more than any debate over policy position, will be what pits the radical middle against the extremes.

V. CONCLUSION

As Robert Keiter has observed, "[u]ntil Congress speaks, ecosystem management can only claim a tenuous legitimacy, which also leaves the concept undefined for legal purposes."[84] Maybe this is true of the radical middle in general. Until it convinces legal institutions to adopt, not merely compromise positions, but the wholesale philosophy of the new middle, it is not a real player. But that is precisely what Bruce Babbitt set out to do at the Department of the Interior, and with much success. That is what the radical middle must continue to do, to define the battlefield and make the first move. To those who would stand in our way, I say bring it on!

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84. Robert B. Keiter, *Toward Legitimizing Ecosystem Management on the Public Domain*, 6 ECOLOGICAL APPLICATIONS 727, 728 (1996). He elaborates:

> An antagonistic and recalcitrant Congress can impede and even reverse agency policies with which it disagrees. Congressional funding for key ecosystem initiatives can be stopped through appropriations riders without full debate over the merits of the policy. Administrative regulations that are not statutorily mandated can always be revised by a subsequent, unsympathetic administration, just as policies lacking congressional support can be abandoned or reformulated. And courts inclined to defer to legislative or administrative discretion are unlikely to intervene in the absence of an express ecosystem management law.

Id. at 729.