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# The Myth of What is Inevitable Under Ecosystem Management: A Response to Pardy

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In *Changing Nature: The Myth of the Inevitability of Ecosystem Management*,<sup>1</sup> Professor Bruce Pardy convincingly refutes the position that natural resources policy should be directed at “changing ecosystems to suit human preferences.”<sup>2</sup> Unfortunately, two serious flaws muddy Pardy’s argument against what I will call the Change Nature policy model. First and foremost, he incorrectly associates the policy model known as Ecosystem Management with the Change Nature message. Indeed, he grossly mischaracterizes Ecosystem Management through a series of straw man arguments based on positions to which no serious advocate of Ecosystem Management adheres. Second, Pardy does not clearly define the policy model he advocates, which I will call Ecosystem Preservation. As best as I can tell, what Pardy has in mind for Ecosystem Preservation is precisely what Ecosystem Management would posit for many natural resource policy settings. Because Pardy correctly identifies me as an advocate of Ecosystem Management, but incorrectly identifies Ecosystem Management as embracing Change Nature policy and rejecting Ecosystem Preservation policy, I find myself compelled to set the record straight.

## What Ecosystem Management Is and Is Not

Ecosystem Management is a relatively new natural resources policy model that focuses decision-making on the consequences of

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1. Bruce Pardy, *Changing Nature: The Myth of the Inevitability of Ecosystem Management*, 20 PACE ENVTL. L. REV. 675 (2003).

2. *Id.* at 677.

policy choices to the integrity of functioning ecosystems.<sup>3</sup> In what remains the most authoritative description of the early roots of Ecosystem Management, Edward Grumbine describes it as “integrat[ing] scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term[.]”<sup>4</sup> He explains the five principal goals of Ecosystem Management as:

- 1 Maintain viable populations of all native species in situ[;]
- 2 Represent, within protected areas, all native ecosystem types across their natural range of variation[;]
- 3 Maintain evolutionary and ecological processes (*i.e.*, disturbance regimes, hydrological processes, nutrient cycles, etc.)[;]
- 4 Manage over periods of time long enough to maintain the evolutionary potential of species and ecosystems[;]
- 5 Accommodate human use and occupancy within these constraints[.]<sup>5</sup>

Although debate remains strong in discrete settings over how much to emphasize maintenance of native ecosystems versus accommodation of human use and occupancy,<sup>6</sup> Grumbine’s description of Ecosystem Management is widely cited to this day by preeminent ecologists as an appropriate description of the core principles and values of the policy approach.<sup>7</sup> It is also the basic thrust of Ecosystem Management as many others and I have translated it into legal frameworks.<sup>8</sup>

Imagine my surprise, therefore, to find Pardy’s description of Ecosystem Management as a policy designed to “measure, control and change ecosystems to produce the most desirable environment in human terms” and a “utilitarian approach in which

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3. For a review of the history and content of Ecosystem Management, see generally JOHN COPELAND NAGLE & J.B. RUHL, *THE LAW OF BIODIVERSITY AND ECOSYSTEM MANAGEMENT* 299-802 (2002).

4. R. Edward Grumbine, *What Is Ecosystem Management?*, 8 CONSERVATION BIOLOGY 27, 31 (1994).

5. *Id.* at 31.

6. See NAGLE & RUHL, *supra* note 3, at 329-33.

7. See, e.g., 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); see generally NAGLE & RUHL, *supra* note 3, at 332.

8. See, e.g., J.B. Ruhl, *A Manifesto for the Radical Middle*, 38 IDAHO L. REV. 385, 394-97 (2002). In my article, I advocate Ecosystem Management law as the approach “necessary to sustain ecosystem composition, structure, and function.” *Id.* at 394 (quoting Christensen et al., *supra* note 7, at 665).

human ends define what kind of ‘nature’ managers will choose to make.”<sup>9</sup> My hunch is that Grumbine would not agree with this characterization of Ecosystem Management, and I know for a fact I have never described it in terms that would support Pardy’s claim.

I can only conclude that Pardy has unnecessarily and inaccurately portrayed Ecosystem Management as he does to provide a foil for his proposed Ecosystem Preservation policy model. He claims, for example, “the competing options” in natural resources policy “are ecosystem management and ecosystem preservation.”<sup>10</sup> Leaving for later what Pardy may have in mind for his Ecosystem Preservation policy, he completely mischaracterizes the other of the alleged “competing options.”<sup>11</sup> In a section of his article entitled “Critiquing the Arguments for Ecosystem Management,”<sup>12</sup> Pardy presents an expert refutation of a series of arguments, but none of the series of arguments is an argument anyone representing Ecosystem Management would make.

Pardy erects five straw man arguments in this section, each of which builds from a set of premises that both Pardy and Ecosystem Management accept (such as that ecosystems are dynamic systems with no final or stable state), but which reaches a conclusion no advocate of Ecosystem Management would ever advance. The five false conclusions—false not only in fact, but also as representations of Ecosystem Management—are:

- 1 “Whatever humans do is natural.”<sup>13</sup>
- 2 “Any change is a natural [thing].”<sup>14</sup>
- 3 “[A] natural state cannot be preserved.”<sup>15</sup>
- 4 “[I]t is not possible to preserve, but only to manage.”<sup>16</sup>
- 5 “[T]here is no nature left to preserve.”<sup>17</sup>

These principles clearly do not match up with Grumbine’s five goals of Ecosystem Management, or anyone else’s for that matter. Indeed, if anyone purporting to represent Ecosystem Management has ever advanced any of these propositions, you would think

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9. Pardy, *supra* note 1, at 675.

10. *Id.* at 679.

11. *Id.*

12. *Id.* at 682-91.

13. *Id.* at 682.

14. *Id.* at 685.

15. Pardy, *supra* note 1, at 687.

16. *Id.* at 689.

17. *Id.* at 690.

Pardy would cite them prolifically. But in this ten-page stretch of the article, he quotes no author espousing the views he associates with Ecosystem Management. Indeed, particularly given the abundance of scholarship in Ecosystem Management,<sup>18</sup> Pardy's work is remarkably barren of references. His few citations are either to scholars who question the potential of Ecosystem Management,<sup>19</sup> or to scholars who lay out some of the foundational premises of Ecosystem Management with which Pardy agrees,<sup>20</sup> or to scholars who advocate Ecosystem Management but do not say what Pardy suggests they say Ecosystem Management is about.

The latter category is, of course, the one that concerns me. Pardy devotes most of his attention in this regard to an early work of Daniel Botkin, who, for example, wrote that "life and environment are one thing, not two, and people, as all life, are immersed in the one system."<sup>21</sup> He also refers to my more recent work, in which I have posited that "all environmental values—or all the environmental values that count—are those that derive from the *human* experience, about which *humans* converse, and which only *humans* measure."<sup>22</sup> I would defy anyone, however, to equate these contentions with the propositions that whatever humans do is natural, or any change is natural change, or a natural state cannot be preserved, or it is not possible to preserve, but only to manage, or that there is no nature left to preserve. Pardy in fact cites nobody who has ever said such things, much less anyone who has said such things as an advocate of Ecosystem Management. Pardy has, in short, dramatically misrepresented Ecosystem Management and the work of scholars, researchers, and resource managers who support it.

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18. In searches I conducted on November 18, 2003 of publications with "Ecosystem Management" in the *title* alone, I found sixty-three books listed on Amazon.com, thirty-nine articles listed in ecology journals carried on JSTOR.org, and fifty-eight law publications carried on Westlaw.

19. See, e.g., Pardy, *supra* note 1, at 682 n.22 (citing Oliver A. Houck, *Are Humans Part of Ecosystems?*, 28 ENVTL. L. 1, 5 (1998)).

20. See, e.g., Pardy, *supra* note 1, at 681 n.16 (citing A. Dan Tarlock, *The Nonequilibrium Paradigm in Ecology and the Partial Unraveling of Environmental Law*, 27 LOY. L.A. L. REV. 1121, 1122 (1994)).

21. Pardy, *supra* note 1, at 682-83 (quoting DANIEL BOTKIN, *DISCORDANT HARMONIES: A NEW ECOLOGY FOR THE TWENTY-FIRST CENTURY* 188 (1990)).

22. J.B. Ruhl, *Working Both (Positivist) Ends Towards a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522, 532 (2000) (emphasis added).

## Preserving Nature—When, Where, How, and How Much?

Part of what may have led Pardy to his grossly mistaken description of Ecosystem Management is a misunderstanding of what it means to say that humans are immersed in nature. Pardy makes a syllogistic error in concluding that if one accepts the premise that “humans are immersed in nature,” one necessarily must also accept the conclusion that “all human effects are natural. . . .”<sup>23</sup> Naturally (no pun intended), the idea that all human effects are natural is nonsensical, for, as Pardy points out, saying so squeezes all the life out of the term “natural.”<sup>24</sup> But one can argue that humans are immersed in nature without insisting that humans *are* nature.

Indeed, one underlying premise of Ecosystem Management is that it is impossible to define “nature” or “naturalness” without reference to humans. This is what I meant when I said that we have only our *human* experience on which to base natural resources policy, even when that policy is directed at the question of “nature.” Pardy himself promises to deliver a definition of nature, which one might reasonably expect of someone who so aggressively criticizes others for failing to take nature into account sufficiently, but the closest I can find to one is that “ecosystems continue to change through time even when they are *free from human influence*.”<sup>25</sup> Ah, there we are again—humans. Even Pardy cannot keep humans out of the definition of nature.

He attempts to finesse this problem by constructing a model of “disproportionate influence,” under which humans are part of nature until we “exert a disproportionate influence on the state of the system,” in which case we “stand outside [of] it.”<sup>26</sup> Disproportionate to what? Pardy suggests that anything more than eating, breathing, dying, and decaying is beyond natural.<sup>27</sup> Is a hog farm—something we use to get food to eat—therefore within nature? Well, that’s an entirely different topic.<sup>28</sup> My point for these purposes is that the concept of “disproportionate influence” is as slippery as anyone wants to make it. The simple truth is that

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23. Pardy, *supra* note 1, at 683.

24. *Id.*

25. *Id.* at 681 (emphasis added).

26. *Id.* at 684-85.

27. *Id.* at 685.

28. See, e.g., J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 *ECOLOGY L.Q.* 263 (2000).

humans have an influence on the environment—we are immersed in it—and thus, because we and we alone have a choice about how to act, we are locked in a search for the way to behave toward it.

Pardy offers as his answer to the search an alternative to Ecosystem Management he calls Ecosystem Preservation. But Ecosystem Preservation as Pardy describes it is not very clear as a “competing option.”<sup>29</sup> He says that its objective is to “maximize the ‘naturalness’ of ecosystems. . . .”<sup>30</sup> Based on his definition (of sorts) of nature, Pardy could have one of three possible approaches in mind.

### 1. Blockade Human Effects

Pardy suggests that maximizing the naturalness of ecosystems could involve “preserving the present state that [the] systems are in. . . .”<sup>31</sup> This, presumably, means keeping them “free from human influence.”<sup>32</sup> How Pardy would do this remains a mystery, particularly given his acknowledgment that ecosystems are open dynamic systems subject to influences from outside their human-drawn boundaries.<sup>33</sup> He suggests that “[h]uman actions that will alter an ecosystem’s state can be identified and prohibited so that the only changes the system experiences are natural ones.”<sup>34</sup> We will be doing a lot of prohibiting in that case. Consider, for example, an estuary. We could, I suppose, prohibit humans from entering the boundaries of the estuary. But, even putting aside the obvious point that doing so is in itself a management decision, it would not prevent human influence—*i.e.*, it would not ensure that the only changes the system experiences are natural ones. An estuary, as the end of a larger watershed system, is greatly influenced by what transpires upstream in the watershed. The watersheds of our National Estuaries, for example, cover quite a bit of inland territory.<sup>35</sup> And the air sheds of those watersheds—the areas within which pollutants mix and could land within the watershed—are even larger.<sup>36</sup> The air sheds of the National Estuaries on the East Coast reach inland to

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29. See Pardy, *supra* note 1, at 679.

30. *Id.* at 677.

31. *Id.*

32. *Id.* at 681.

33. *Id.* at 680-81.

34. *Id.* at 689-90.

35. See NAGLE & RUHL, *supra* note 3, at 671-72.

36. *Id.* at 672.

the Mississippi and Ohio Rivers.<sup>37</sup> How, precisely, would one preserve the present state of such an estuary?

The reality is that there simply is no way to “preserve” nature without in some sense managing it somewhere with some human-defined purpose. Pardy agrees that there are no pristine ecosystems left and humans have changed all ecosystems.<sup>38</sup> This makes preserving ecosystems quite problematic. If we were to make “preservation” of an estuary our overriding purpose, we would have to manage upstream watershed and distant air shed locations in some way. Assuming those locations are in ecosystems too, well, then we would be managing those ecosystems in order to preserve other ecosystems. Also assuming we do not intend to drive humans completely out of all ecosystems, we would necessarily be confronted with the need to manage some ecosystems in order to preserve other ecosystems. So, even under a “preserve the present state” model of Ecosystem Preservation, we will in fact be engaged in Ecosystem Management.

Pardy would likely respond that, while his Ecosystem Preservation model does call for “management,” it is not management borne of human-serving utilitarian goals. It is not clear from which philosophical paradigm Pardy wishes us to set our natural resource policy goals—it seems to be founded in some form of human preference—but it is clear, as noted above, that utilitarianism is not the driver for Ecosystem Management. Nowhere in Grumbine’s or my descriptions of Ecosystem Management does utilitarianism rule the day. Acknowledging that humans are immersed in nature, and thus any natural resources policy must accommodate human use of and occupancy in the environment, does not require hard adherence to utilitarian goals. The bottom line is that whether utilitarian or other goals lead one to seek to preserve the present state of an ecosystem, the present state of the world is such that one thereby will be led inevitably to Ecosystem Management.

## 2. Restore Ecosystems, then Blockade Human Effects

Pardy also suggests that Ecosystem Preservation may lead to “restoring them to a former state.”<sup>39</sup> This presents quite a puzzle. To what state would they be restored, and how exactly would this

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37. *Id.* at 672-73.

38. Pardy, *supra* note 1, at 690.

39. *Id.* at 677.



happen without Ecosystem Management? Surely, Pardy appreciates that there are almost no remnants of pre-Columbian ecosystem left in the United States,<sup>40</sup> and that restoring any transformed area to that or a different snapshot of the past is basically impossible. Ecosystems are not clocks—they cannot be set back to a prior time. It is even more unrealistic a proposition than trying to preserve them in their present state by blockading the effects of humans. In any event, if restoration were to be undertaken, it would require a constant barrage of the management measures Pardy seems to abhor—*i.e.*, to measure, control, and change—and then would require ongoing operation and maintenance efforts to prevent the effects not only of humans, but of present day ecosystems, from creeping back in.<sup>41</sup> This sounds like management to me. Once again, the ecological restoration approach to Ecosystem Preservation would lead inevitably to Ecosystem Management.

### 3. Let Ecosystems Go Their Ways

Maybe Pardy means simply that we should leave ecosystems alone, not necessarily preserving or restoring them, but just letting them run their courses as dynamic, naturally changing systems. The problem is that very few ecosystems are immune to the effects of humans, some of which have nothing directly to do with humans anymore. Consider invasive species, which have become a severe ecological disturbance in even the most remote ecosystem settings.<sup>42</sup> Would a policy of letting ecosystems go mean letting an invasive species have its way? Or letting an endangered species slowly sink to extinction? Or letting toxic metals drift in by air or water? No intervention at all? Never?

It would be nice if we did not need Ecosystem Management. The dream of letting nature alone is quite appealing. But it is too late. The only purpose that approach would serve is to satisfy some humans that we are not “messing” with nature, when in fact we would be through our inaction. That would be ecosystem *mis*-management. Rather than letting ecosystems go their ways, we

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40. In the east, for example, only a few scraps of virgin forestland remain intact, though persistent researchers have found more examples of such in remote locations. See Kevin Krajick, *Methuselahs in Our Midst*, 302 SCI. 768 (2003).

41. For an examination of some of these difficulties, see NAGLE & RUHL, *supra* note 3, at 385, 391, 471.

42. See *id.* at 566-68. Pardy recognizes that effects such as these have reached areas “including those that appear to consist of wilderness.” Pardy, *supra* note 1, at 679.

do need to intervene if we hope to keep them healthy and operating with ecological integrity. That will require intervention and, yes, management. I am afraid, Professor Pardy, that Ecosystem Management is simply inevitable any way you look at it.

### **Conclusion**

Once the word “ecosystem” rolls off your tongue, there really is no way around the inevitability of Ecosystem Management. The very act of defining an ecosystem is management.<sup>43</sup> Of course, I mean Ecosystem Management as others and I have described it, not as Pardy has described it. Pardy’s Ecosystem Preservation, at least what I think he means by it, fits squarely within the domain of Ecosystem Management, and would often serve as the default policy position. I am not sure, therefore, what gripe he would have with Ecosystem Management, if he would take it on its own terms.

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43. For discussion of how we draw such boundaries, see NAGLE & RUHL, *supra* note 3, at 302-05.

