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# CHANGING VIEWS OF WHAT THE WILDERNESS SYSTEM IS ALL ABOUT

MICHAEL MCCLOSKEY\*

## INTRODUCTION

Success in building the National Wilderness Preservation System to more than 100 million acres over the past thirty-five years has masked rising challenges to the idea of wilderness itself. These come not from those who regularly oppose additions to the system but from members of the environmental community, academia, and those who are charged with administering the areas.

The Wilderness Act of 1964<sup>1</sup> was established “in order to assure that an increasing population . . . does not occupy and modify all areas within the United States.”<sup>2</sup> The Act’s definition of wilderness begins with a declaration that “[a] wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man.”<sup>3</sup> Thus, these were to be areas where natural processes would be unhindered. They would be areas which would not be dominated by human intervention. They would be administered under a “hands off” approach.

Such an approach would be necessary if wilderness areas were to serve as benchmarks, or control areas, that would allow scientists to compare natural areas with disturbed places.<sup>4</sup> This was one of the ends that Congress sought to serve when it set up the wilderness program.<sup>5</sup>

But now more and more are questioning the “hands off” approach.<sup>6</sup> They are also questioning whether these are undisturbed areas, and they are suggesting other ends that might better be served.

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1. Wilderness Act of 1964, Pub. L. No. 88-557, 78 Stat. 890 (codified as amended at 16 U.S.C. §§ 1131–1136 (1994)).

2. Wilderness Act § 2(a), 16 U.S.C. § 1131(a).

3. Wilderness Act § 2(c), 16 U.S.C. § 1131(c).

4. See Aldo Leopold, *Wilderness As a Land Laboratory*, 6 LIVING WILDERNESS 3, 3 (1941) (wilderness provides a “base datum of normality”); see also WILLIAM S. ALVERSON ET AL., *WILD FORESTS: CONSERVATION BIOLOGY AND PUBLIC POLICY* 190 (1994).

5. For a discussion of the intended scientific purposes of the Wilderness Act, see Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288, 293 (1966).

6. For example, Stephen Buidiansky asserts that “[s]trict preservation through a hands off or ‘natural’ management policy has destroyed many of the very things that nature lovers claim to value

Some are even denouncing the idea. In a recent book two environmental philosophers have concluded that "wilderness preservation, as envisioned by Muir and his successors, is [as flawed as Gifford Pinchot's ideas of utilitarian resource management]." They believe the "wilderness idea is . . . ethnocentric, androcentric, phallogentric, unscientific, unphilosophic, impolitic, outmoded, even genocidal."<sup>8</sup>

The constituency for wilderness needs to understand these criticisms and changes in perspective. The points at issue should be debated openly.

### I. BROAD CHALLENGES

Stephen Budiansky argues that "[t]he great American wilderness was . . . a product of human will."<sup>9</sup> He points to evidence that native populations regularly burned large portions of the American landscape to shape its flora and fauna.<sup>10</sup> He contends, thus, that there was no pristine wilderness here to preserve.

Since the Wilderness Act was passed in 1964, more has become known too about worldwide stresses on the environment, including wilderness. With the thinning of the ozone layer, ultraviolet light intensity has grown, resulting in more pronounced impacts on high elevation areas. Carbon dioxide levels have also grown, which may be inducing changes in climate and shifts in patterns of vegetation. Sulfates and other pollutants migrate long distances to turn to acid rain and cripple high elevation forests, as well as lowering visibility. Pesticides that drift long distances may be destroying frog populations. Long continued suppression of fire may have significantly changed the succession of forest vegetation in wilderness.<sup>11</sup> All of these factors reduce the naturalness of wilderness. Indeed, René Dubos asserts that "[n]ot even the strictest conservation policies would restore the primeval environment."<sup>12</sup>

Are our wilderness areas undisturbed anymore, and can they be considered to be pristine?<sup>13</sup> The simple answer is that they are not.<sup>14</sup> But they

the most." STEPHEN BUDIANSKY, *NATURE'S KEEPERS: THE NEW SCIENCE OF NATURE MANAGEMENT* 8 (1995).

7. J. Baird Callicott & Michael P. Nelson, *Introduction* to *THE GREAT NEW WILDERNESS DEBATE* 1, 20 (J. Baird Callicott & Michael P. Nelson eds., 1998).

8. *Id.* at 2.

9. BUDIANSKY, *supra* note 6, at 103.

10. *See id.* at 103-11; cf. William S. Denevan, *The Pristine Myth*, in *THE GREAT NEW WILDERNESS DEBATE*, *supra* note 7, at 414, 414-24 (presenting, however, little data on the western United States). For a rebuttal, see Thomas Vale, *The Myth of the Humanized Landscape: An Example from Yosemite National Park*, 18 *NAT. AREAS J.* 231, 231-36 (1998).

11. *See* BILL MCKIBBEN, *THE END OF NATURE* 56-60 (1989) (discussing anthropocentric changes to nature and wildlands).

12. RENÉ J. DUBOS, *SO HUMAN AN ANIMAL* 199 (1968).

13. *See* MCKIBBEN, *supra* note 11, at 56-60.

14. The eastern wilderness, moreover, was certainly not pristine because it had recovered from exploitation.

are still less disturbed than other areas outside the wilderness system. Clearly, this does reduce their value as benchmarks.

The system was not set up only to provide protection to pristine areas. The entry criteria are heavily qualified.<sup>15</sup> Units have been admitted which only “generally appear[] to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable.”<sup>16</sup> The areas admitted to the system do not need to be pristine. The wilderness system is a practical, legal zoning tool to put given areas off limits to development. It was not designed to shield areas from global influences, nor to provide a warranty of pristineness.

Is the wilderness system really an anachronism—an historical oddity? William Tucker thinks so. He suggests that “[w]ilderness today means the land *after* the Indians have been cleared away but *before* the settlers have arrived.”<sup>17</sup>

Scant evidence, however, exists for the notion that these generally inhospitable lands, which are the lands now included in the National Wilderness Preservation System, ever supported substantial native populations, or that they were burned regularly. In fact, they rarely include the lower areas with open pine forests and savannas. Many of them are in alpine zones where winter snows are simply too heavy. Furthermore, these were the sites that were unlikely for the settlers to ever reach. They have been saved because they never were reached, with the exception of areas in the East that recovered.

In an era of ecological consciousness, the wilderness idea is seen by some as old-fashioned and anthropocentric.<sup>18</sup> They decry elitists for “wanting to preserve wilderness as ‘scenery’ and as places to take vacations.”<sup>19</sup> William Cronon asserts that “elite urban tourists and wealthy sportsmen projected their leisure-time frontier fantasies onto the American landscape and so created wilderness in their own image.”<sup>20</sup> He also looks askance at a “wilderness ideology that devalues productive labor.”<sup>21</sup>

Some even lump those concerned with aesthetics in with those concerned with profits and maximum yields.<sup>22</sup> By using wilderness to back-

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15. See McCloskey, *supra* note 5, at 307 (explaining the qualifications presented in the Wilderness Act § 2(c), 16 U.S.C. § 1131(c) (1994)).

16. Wilderness Act § 2(c), 16 U.S.C. § 1131(c) (emphasis added).

17. William Tucker, *Is Nature Too Good for Us?*, in *TAKING SIDES* 17, 19 (Theodore D. Goldfarb ed., 3d ed. 1989).

18. See R. EDWARD GRUMBINE, *GHOST BEARS: EXPLORING THE BIODIVERSITY CRISIS* 142–43, 176–77, 184–85 (1992); cf. MAX OELSCHLAEGER, *THE IDEA OF WILDERNESS: FROM PREHISTORY TO THE AGE OF ECOLOGY* 292–93 (1991) (differentiating anthropocentrism from ecocentrism and biocentrism).

19. BILL DEVALL & GEORGE SESSIONS, *DEEP ECOLOGY* 122 (1985).

20. William Cronon, *The Trouble with Wilderness*, in *THE GREAT NEW WILDERNESS DEBATE*, *supra* note 7, at 471, 482.

21. *Id.* at 490.

22. GRUMBINE, *supra* note 18, at 29.

pack and by their concern for the options of future generations, they are put in the same category as exploiters—they are said to be anthropocentric “resourcists.”

Others denigrate those who would preserve wilderness because of their supposed narrowness and lack of social sensitivity. Social ecologist Murray Bookchin laments those who would “mystically confus[e] wilderness with the real world.”<sup>23</sup> William Cronon also writes in a similar vein and finds the intellectual influence of the wilderness idea to be “insidious.”<sup>24</sup> He feels that “wilderness offers us the illusion that we can escape the cares and troubles of the world in which our past has ensnared us.”<sup>25</sup> He asserts that “[b]y teaching us to fetishize sublime places and wide open country, these peculiarly American ways of thinking about wilderness encourage us to adopt too high a standard for what counts as ‘natural.’”<sup>26</sup> And, radical writers fault preservationists because they do not seek to alter “the distribution of power and control over production.”<sup>27</sup>

Of course, in reality, organizations such as the Sierra Club work not only on preserving wilderness but also on combating pollution, curbing population growth, and on issues of human rights and environmental justice. They have not neglected other issues, nor have they behaved as if protecting wilderness alone would address the full environmental agenda.

Restoration ecologists William Jordan and Frederick Turner castigate those who take “human beings out of nature altogether and mak[e] wilderness of it.”<sup>28</sup> Turner asserts that wilderness areas are “the most astonishingly unnatural places on earth.”<sup>29</sup> The issue of whether it is unnatural to take humans out of wilderness is part of the never-ending philosophical conundrum of what it means to suggest that “man is part of nature.” The problem with pressing this argument has been aptly put by Max Oelschlaeger: “If humankind is part of nature, then human actions cannot be construed as anything other than natural even if detrimental to the larger natural community.”<sup>30</sup> The worst crimes against nature can all be excused on this basis.

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23. OELSCHLAEGER, *supra* note 18, at 307.

24. Cronon, *supra* note 20, at 475.

25. *Id.* at 483.

26. *Id.* at 491–92.

27. ALLAN SCHNAIBERG & KENNETH ALAN GOULD, ENVIRONMENT AND SOCIETY: THE ENDURING CONFLICT 144 (1994).

28. G. Stanley Kane, *Restoration or Preservation?*, in BEYOND PRESERVATION: RESTORING AND INVENTING LANDSCAPES 69, 70 (1994) (citing Frederick Turner, *Cultivating the American Garden: Toward A Secular View of Nature*, HARPER'S MAG., Aug. 1985, at 45, 45–52).

29. *Id.* at 70.

30. OELSCHLAEGER, *supra* note 18, at 296.

## II. CONSERVATION BIOLOGISTS

Efforts to apply the latest insights of biology to public policy have prompted the emergence of a group who call themselves "conservation biologists." They are uncomfortable with the lack of biological grounding in the Wilderness Act.<sup>31</sup> They are not content with the notion that "nature knows best."<sup>32</sup>

They see units of protected wilderness as building blocks for megareserves that they are promoting. These would be managed for different purposes, such as maximizing biodiversity. They would "build upon and revise the earlier Wilderness Area designations established largely for other purposes."<sup>33</sup>

They are critical of the existing systems of protected areas, including wilderness, because they are seen as too small, or put in the wrong places, or they are too far apart. In terms of protecting biodiversity, Reed Noss believes the "National Wilderness Preservation System does a poor job."<sup>34</sup> Only 19 of 261 ecosystems in the United States are represented. Conservation biologists apparently do not understand that the National Wilderness Preservation System, in contrast to the National Park System, was not set up to represent various ecosystems.

Some of these critics regard the more than 104 million acres in this system as only "token environmental reform."<sup>35</sup> They fear that tokenism will engender a feeling of "free license" elsewhere.<sup>36</sup> They seem to have little sense of the effort that it took to get Congress to act over one hundred times so far or of the resistance that was faced.

They also scoff at many reserves as either "worthless" or "empty." Alfred Runte has popularized the notion that, for the most part, lands devoid of economic value were put into national parks.<sup>37</sup> Reed Noss makes a similar assertion for national forest wilderness, pointing out that selections for it have been "biased toward low-diversity lands such as alpine zones."<sup>38</sup>

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31. See ALVERSON ET AL., *supra* note 4, at 296.

32. *Id.* at 194.

33. *Id.* at 194; see John Freemuth, *Ecosystem Management and Its Place in the National Park Service*, 74 DENV. U. L. REV. 697, 715 (1997) (discussing National Park Service officials' concerns about overzealously applying ecosystem management, thereby altering traditional conceptions of park management).

34. GRUMBINE, *supra* note 18, at 92.

35. *Id.* at 227.

36. Peter Brussard et al., *Strategy and Tactics for Conserving Biological Diversity in the United States*, 6 CONSERVATION BIOLOGY 157, 159 (1992).

37. See ALFRED RUNTE, NATIONAL PARKS: THE AMERICAN EXPERIENCE 50-51 (1979); see also ROBERT GOTTLIEB, FORCING THE SPRING: THE TRANSFORMATION OF THE AMERICAN ENVIRONMENTAL MOVEMENT 27 (1993) (stating that Yellowstone was set aside as a national park because Congress considered the land commercially worthless).

38. ALVERSON ET AL., *supra* note 4, at 191 (quoting Reed F. Noss, *From Endangered Species to Biodiversity*, in BALANCING ON THE BRINK OF EXTINCTION 227, 227-46 (K.A. Kohm ed., 1991)).

Others speak of "living dead" species that are doomed in wilderness because of fragmented habitat and failure to establish ecosystem-based mega-reserves. It is feared that these species will die out in time.<sup>39</sup> Others see areas with vacant niches for top carnivores as empty places.<sup>40</sup>

Calling these areas "worthless" or "empty" has the unfortunate effect of questioning their continuing value as public reserves. It is also historically incorrect to assert that only worthless alpine areas were set aside. Many wilderness reservations were bitterly resisted precisely because they were not devoid of commercial timber, minerals, or power sites.<sup>41</sup>

Finally, some of these conservation biologists would relax the restrictions on what can be done in wilderness—ostensibly for the purpose of making it easier to get more land into the wilderness system.<sup>42</sup> They would allow firewood cutting and snowmobiling. Such concessions, however, would do little to reduce opposition from major commercial interests, which have provided the mainstay of opposition historically.

### III. AGENCY MANAGERS

Four different federal agencies administer wilderness in the National Wilderness Preservation System: the Forest Service, the National Park Service, the Fish and Wildlife Service, and the Bureau of Land Management. These agencies participate in research on wilderness management through the Aldo Leopold Wilderness Research Institute in Missoula, Montana. Publications of researchers at the Institute reveal a desire to move toward active manipulation of the wilderness environment. They are not content with merely managing the impacts of those who use these areas recreationally, nor with protecting them from external threats. They point out that because "all wildernesses have already been compromised to some extent," managers must be helped "to restore natural conditions and processes."<sup>43</sup> They assert that this, in many cases, "will require active manipulation of ecosystems."<sup>44</sup>

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39. See BILL DEVALL, *SIMPLE IN MEANS, RICH IN ENDS* 163 (1988).

40. See, e.g., O.H. FRANKEL & MICHAEL E. SOULÉ, *CONSERVATION AND EVOLUTION* 118 (1981) (concluding that "[s]ome large . . . species will not be adequately protected in even the largest reserves").

41. For instance, great controversies attended the establishment of wilderness in East Meadow Creek in Colorado, in the Gospel Hump area of Idaho, and in the French Pete Creek area of Oregon.

42. See ALVERSON ET AL., *supra* note 4, at 243.

43. See David N. Cole & Peter B. Landres, *Threats to Wilderness Ecosystems: Impacts and Research Needs*, 6 *ECOLOGICAL APPLICATIONS* 168, 179 (1996) (emphasis added); see also David N. Cole, *Ecological Manipulation in Wilderness*, *INT'L J. WILDERNESS*, May 1996, at 15, 15-18 (arguing that "the task of wilderness management is largely to optimize trade-offs between three goals"); Reed F. Noss, *Soul of the Wilderness*, *INT'L J. WILDERNESS*, Aug. 1996, at 5, 5 (stressing "the need for active management, at least of a restorative nature, for wilderness areas too small to manage themselves"). But see Bill Worf, *Response to "Ecological Manipulation in Wilderness"* by

In their classic monograph on wilderness management, Hendee, Stankey, and Lucas call for agency managers to decide "the degree of naturalness desired" in protected wilderness.<sup>45</sup> They "must decide what is desired in types and distribution of ecosystems."<sup>46</sup> They may choose to "return to presettlement condition," or to perpetuate "a particular species, ecosystem, or community mosaic," or to maintain "the *status quo*."<sup>47</sup> Others see choices in terms of the attributes of "composition, structure, and function" which they believe are the "three primary ecological attributes of wilderness character."<sup>48</sup>

These actions are built on the legal premise that "[t]he mandate of the Wilderness Act is to protect and preserve natural conditions."<sup>49</sup> The phrase "natural conditions" does appear in section 2(c) of the Act, which defines "wilderness."<sup>50</sup> In that extended definition, it is stated that federal wilderness will be "protected and managed so as to preserve its natural conditions."<sup>51</sup> However, there are other sections of the Act that more specifically address the question of how these areas are to be managed, and there is also much more to the definition of it.

The language in the definition that specifies at the outset that a wilderness is "hereby recognized as an area where the earth and its community of life are *untrammeled* by man"<sup>52</sup> would suggest that man's intervention in controlling that life should be minimized. The dictionary defines "untrammeled" as unhindered.<sup>53</sup> Thus, the key idea of what wilderness is all about is to make sure that humans do not hinder the development of that "community of life,"—the flora and fauna that grow there.

Both the policy section contained in section 2(a) of the Act and the management section contained in section 4(b) of the Act specify that the aim of administration is to preserve "the wilderness character" of the areas. What that character was intended to be can only be determined by looking to the definition of wilderness. And in the definition, the section referring to "natural conditions" follows the key initial point about it being untrammeled, while further embellishing it in a second sentence. Any meaning given to the phrase "natural conditions" should be consis-

David N. Cole, INT'L J. WILDERNESS, June 1997, at 30, 30 (disagreeing with David Cole's argument "that the Wilderness Act gives managers three conflicting goals").

44. See Cole & Landres, *supra* note 43, at 179.

45. JOHN C. HENDEE ET AL., WILDERNESS MANAGEMENT 252 (2d ed. 1990).

46. *Id.*

47. *Id.*

48. Peter Landres et al., *A Monitoring Strategy for the National Wilderness Preservation System*, in INTERNATIONAL WILDERNESS ALLOCATION, MANAGEMENT, AND RESEARCH 194, 194 (John C. Hendee & Vance G. Martin eds., 1994).

49. Peter B. Landres, *The Role of Ecological Monitoring in Managing Wilderness*, 32 TRENDS/WILDERNESS RESEARCH 10, 13 (1995).

50. Wilderness Act § 2(c), 16 U.S.C. § 1131(c) (1994).

51. *Id.*

52. *Id.* (emphasis added).

53. WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2513 (1993).



tent with the key idea of not "trammeling" these areas. This interpretation is favored both because this language comes first and, in accordance with rules of statutory construction, it avoids any unnecessary implication of conflict between provisions, suggesting that the first sentence is being modified. Trammeling also means not catching anything in a net or web which subdues it. Thus, the community of life in wilderness should not be subdued, or put under the domination of man (a point made in the first clause of the definition).

It is interesting to note that some of those who advocate manipulating ecosystems for purposes of restoration do acknowledge some downsides to such action. Because wilderness areas are supposed to serve as reference benchmarks, they admit that "[t]his value is compromised when these ecosystems are intentionally modified."<sup>54</sup> Moreover, other biodiversity goals may be affected. "Attempts to restore fire may increase vulnerability to invasions by alien plants."<sup>55</sup> And, elimination of exotic vegetation may eliminate habitat for newly dependent, rare species.<sup>56</sup> These considerations add to the confusion over what baseline conditions can be considered to be "natural."

#### IV. MANAGEMENT TECHNIQUES

But, if manipulation were to be pursued, what would it entail? Some see "fire" as the key tool. Historian Stephen Pyne calls upon managers "to determine, site by site, what [constitutes] an appropriate fire regime."<sup>57</sup> Looking at uncut parts of the national forests, including those in wilderness, he sees "[t]oo many forests [that] were overgrown, diseased, insect-infested, unattractive, prone to species losses, and vulnerable to catastrophic fire."<sup>58</sup>

National Park Service ecologist David Parsons wants to restore "fire to something approaching its natural role in park ecosystems," including wilderness.<sup>59</sup> To achieve that end, "prescribed fires must burn under natural conditions and with minimum constraints."<sup>60</sup> Despite imperfect knowledge, he calls for a watershed scale program and willingness to experiment and "to take risks."<sup>61</sup> Agency managers are already moving in this direction. In the Lee Metcalf Wilderness in Idaho, the Bureau of Land Management has embraced prescribed fire in the Bear Trap Canyon

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54. Cole & Landres, *supra* note 43, at 180.

55. *Id.*

56. *See id.*

57. STEPHEN J. PYNE, *AMERICA'S FIRES: MANAGEMENT ON WILDLANDS AND FORESTS* 41 (1997).

58. *Id.*

59. David J. Parsons & Stephen J. Botti, *Restoration of Fire in National Parks*, in *THE USE OF FIRE IN FOREST RESTORATION* 29, 30 (Colin C. Hardy & Stephen F. Arno eds., 1996).

60. *Id.*

61. *Id.*

Unit "to reestablish and/or maintain the mosaic of ecological and successional vegetative types in the area."<sup>62</sup>

This management prescription embraces both the idea of using fire to restore an original condition, as well as using it on an ongoing basis to freeze the vegetation at a given stage of succession—for instance to provide habitat for deer. Sometimes the restoration goal implies resetting the biological clock to where it would have been had fires not been artificially suppressed. This would imply a measure of restraint. However, increasingly that restraint is not evident, as in the case just cited.

Indeed, at conferences of wilderness managers, frequent calls are heard for more leeway in manipulating vegetation. At the Sixth National Wilderness Conference in Santa Fe, managers often spoke of problems of too much brush coming in or of forests becoming more closed. They also called for more use of prescribed fire and planned ignitions.<sup>63</sup>

In manipulating the environment in wilderness, conservation biologists would try to "sustain disturbance regimes typical of the region without losing species."<sup>64</sup> This would entail efforts "to maintain patterns of disturbance and habitat patches similar to those that have occurred historically."<sup>65</sup> In addition to using fire, some argue for access roads and would consider using herbicides and machinery—as to remove brush from rangeland.<sup>66</sup> Where fire would not work, they would fell trees to simulate treefalls for the purpose of creating enough gaps to provide early successional habitats.<sup>67</sup>

Active management would also be aimed at eliminating non-native species, or exotics.<sup>68</sup> The National Park Service has long grappled with how to remove feral pigs, goats, burros, and non-native mountain goats from its various units, including in wilderness.<sup>69</sup> Various techniques are used including culling, artificial transfers, sterilization, and fencing. This has rarely been easy with animals, and it is even more difficult with exotic plants.

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62. HENDEE ET AL., *supra* note 45, at 206.

63. See Jerry Asher, *Crushing the Wilderness Spirit*, in SIXTH NATIONAL WILDERNESS CONFERENCE HANDBOOK: THE SPIRIT LIVES 39, 39–43 (1994) [hereinafter THE SPIRIT LIVES]; Edward R. Grumbine, *Future Trends*, in THE SPIRIT LIVES, *supra*, at 30, 30–31; Francis Mohr, *Fire Suppression Commensurate with Wilderness Stewardship*, in THE SPIRIT LIVES, *supra*, at 149, 149–50; see also Christopher V. Barns, *Wilderness Strategic Planning*, INT'L J. WILDERNESS, Mar. 1997, at 8, 8–10 (summarizing survey results from this conference).

64. ALVERSON ET AL., *supra* note 4, at 44.

65. *Id.*

66. See REED F. NOSS & ALLEN Y. COOPERRIDER, *SAVING NATURE'S LEGACY* 243–45 (1994); see also Donald M. Waller, *Getting Back to the Right Nature*, in THE GREAT NEW WILDERNESS DEBATE, *supra* note 7, at 558.

67. See NOSS & COOPERRIDER, *supra* note 66, at 207.

68. See Michael Soulé, *What Is Conservation Biology?*, in ENVIRONMENTAL POLICY AND BIODIVERSITY 35, 38 (R. Edward Grumbine ed., 1994).

69. See RICHARD WEST SELLARS, *PRESERVING NATURE IN THE NATIONAL PARKS* 258–61 (1997).

Broadscale eradication programs could well do more damage than good. Using poisons such as herbicides or pesticides would be particularly questionable.<sup>70</sup> Efforts in past decades to eradicate the host (*ribes*) for the white pine blister rust in western national forests proved to be unworkable. Little was accomplished after tremendous effort, which involved grubbing the host plant out with hand tools. Efforts to eradicate exotic plants in wilderness may enjoy little more success.

Wilderness managers are also concerned with the "permeability" of the boundaries of wilderness areas.<sup>71</sup> Permeability refers to the flow of plants, animals, disease and other disturbing agents in and out of wilderness areas from surrounding lands. These flows may be seen as either harmful or beneficial. These flows not only involve migrations by animals such as elk and bison but also pathogens and pests as well. Sources for recolonization may also be at stake.

An implication of these concerns is how to manage them. In addition to choosing the best boundaries and establishing buffer areas and corridors, other steps might be taken too.<sup>72</sup> These could involve resorting to fencing and barriers, salt blocks, and other devices to coax animals in desired directions.

These problems, however, might be better addressed through trying to coordinate management for desired ends on an ecosystem basis (i.e., "ecosystem management").<sup>73</sup> Efforts would be made to protect wilderness from incompatible activities on surrounding lands in the context of a larger ecosystem. Unfortunately, that approach has yet to find a way to get agencies with different missions, biases and plans to coordinate effectively. A 1995 Memorandum of Understanding among federal agencies mainly contemplates regular communication exchanges.<sup>74</sup>

Mindful of the fact that specific steps need to be taken on a local basis to safeguard each wilderness, some have questioned the idea of standardized protection under the Wilderness Act. They seem to want to vest managers with the discretion to decide what they think is best for each protected area. Edward Grumbine believes that "[c]hoices about how humans live with ecosystems can only be . . . specific to local places, conditions and practices. What works for . . . the [grizzly] bear in

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70. Section 4(d) of the Wilderness Act does include language that empowers the Secretary of Agriculture to take measures to control "fire, insects, and diseases" in national forest wildernesses, but these must meet a necessity test. Wilderness Act § 4(d), 16 U.S.C. § 1133(d) (1994). Many exotic plants and animals, however, might not fall into the framework of this dispensation since they would be neither insects nor disease agents.

71. See Cole & Landres, *supra* note 43, at 177-78.

72. *Id.*

73. See Freemuth, *supra* note 33, at 697 (examining the "effort to bring ecosystem management to a unit of the national park system").

74. See Memorandum of Understanding to Foster the Ecosystem Approach Between Fourteen Federal Agencies, at v, c (Dec. 15, 1995) (on file with author).

the Greater North Cascades will be different from . . . what works in Greater Yellowstone."<sup>75</sup>

In vesting managers with this discretion, presumably, they would be hoping to apply a variation of the concept of "adaptive management."<sup>76</sup> Each manager would experimentally apply the latest and best science to manage the area under his or her care. These hopes, however, would have to confront the reality of local pressures from vested interests. Managers have rarely been able to stand up to such pressures in the past. Casting wilderness areas loose in this way would also undermine the idea that these areas constitute a national patrimony by securing "for the American people . . . an enduring resource of wilderness."<sup>77</sup>

## V. CAUTIONS

Some are unrestrained in their enthusiasm for managing nature. Daniel Botkin asserts that "we can engineer nature at nature's rate."<sup>78</sup> Others urge caution. Ecologist William Baker believes "it is premature to undertake extensive manipulative restoration action using either prescribed disturbances or mechanical means, as these may only produce undesirable alteration."<sup>79</sup>

In her analysis of Aldo Leopold's work, Susan Flader concludes that "his experiences with deer convinced him that the land organism was too complex and dynamic ever to be fully comprehended or controlled and that management . . . was itself subject to the same hazardous consequences as the short-sighted actions it was intended to correct."<sup>80</sup> Leopold came to the conclusion that "[t]he only reality is an intelligent respect for, and adjustment to, the inherent tendency of land to produce life."<sup>81</sup>

Moreover, how much confidence can we have anymore in the supposition that a given association of plants and animals is "natural?" The long-held notion that habitats progress through successional stages to reach an equilibrium stage seems to be collapsing. Equilibrium theories have been largely replaced by dynamic paradigms.<sup>82</sup> Nature is seen as

75. See GRUMBINE, *supra* note 18, at 216.

76. See Waller, *supra* note 66, at 563.

77. Wilderness Act § 2(a), 16 U.S.C. § 1131(a) (1994).

78. DANIEL BLOTKIN, DISCORDANT HARMONIES 190 (1990); see R. Edward Grumbine, *An Ecological Denouement*, in ENVIRONMENTAL POLICY AND BIODIVERSITY, *supra* note 68, at 387, 387 (quoting Blotkin).

79. See William L. Baker, *The Landscape Ecology of Large Disturbances in the Design and Management of Nature Reserves*, in ENVIRONMENTAL POLICY AND BIODIVERSITY, *supra* note 68, at 75, 92.

80. SUSAN L. FLADER, THINKING LIKE A MOUNTAIN 270 (1974).

81. *Id.*

82. See Callicott & Nelson, *supra* note 7, at 6. See generally Donald Worster, *The Ecology of Order and Chaos*, ENVTL. HIST. REV., Spring/Summer 1990, at 1 (surveying recent thinking regarding the science of ecology).

“full of uncertainty and episodic at different spatiotemporal scales.”<sup>83</sup>  
 “[N]ature is a shifting mosaic or in essentially continuous flux . . . .”<sup>84</sup>

“[S]pecies composition of vegetation varies continuously in time and space . . . .”<sup>85</sup> “Because chance (disturbance) factors and small climatic variation can apparently cause very substantial changes in vegetation, the biota and associated ecosystem processes for a given landscape will vary substantially over any significant time period—and no one variant is any more ‘natural’ than the others.”<sup>86</sup>

If this is true, then there can be no preordained “natural” association of flora and fauna that must be restored. The Wilderness Act cannot mean that a given set of “natural conditions” must be restored and maintained. Rather, the wilderness character of which the Act speaks must refer to maintaining natural processes—where nature finds its own way unaided.

Moreover, it may be futile in any event to try to hold onto all species in given nature reserves, including wilderness areas. Frankel and Soulé assert that “even the largest nature reserves, if left alone, will probably suffer major die-offs of species, accounting for a majority of birds and large mammals in a few hundred or a few thousand years.”<sup>87</sup> This will occur because of the disappearance of the main body of their traditional habitat. In other words, manipulation simply may not work.

Furthermore, changes in climate may rapidly alter habitat conditions. Climatologists forecast a migration of habitats northward in the northern hemisphere and to higher elevations in mountainous regions. Some habitats may simply disappear.<sup>88</sup> No manipulative efforts can save them.

### CONCLUSION

Wilderness areas were designed to be areas removed from human dominion. They are areas where nature can work its will and surprise us. Ponds may become meadows, and meadows may become forests, and forests may burn and become meadows, and brush may invade. One kind of forest may replace another. What lives there can and will change. We should not try to stop the clock and guide nature one way or another. And, in any event, such efforts simply may not work. They also may not

83. Callicott & Nelson, *supra* note 7, at 6.

84. NOSS & COOPERRIDER, *supra* note 66, at 166.

85. *Id.* at 247.

86. GRUMBINE, *supra* note 18, at 59.

87. FRANKEL & SOULÉ, *supra* note 40, at 131.

88. See OFFICE OF SCIENCE AND TECHNOLOGY, EXECUTIVE OFFICE OF THE PRESIDENT, CLIMATE CHANGE: STATE OF KNOWLEDGE 15 (1997) (“Over the next 100 years, the ideal range for some North American forest species will shift by as much as 300 miles to the north, far faster than the forests can migrate naturally. . . . Such changes could have profound effects on the U.S. system of national parks and refuges . . .”).

be lawful. It is doubtful that the "natural conditions" language of the Act can support all of the management activity that is being suggested.

The emergence, though, of so much thinking at variance with the original idea behind the Act suggests that the wilderness debate is about to take a new turn.<sup>89</sup> The issues could be debated more clearly if distinctions would be drawn between the wilderness idea, such as it was originally contemplated in 1964, and all of the variations and extensions of the idea that are current today. The validity of the wilderness idea should not be judged solely by reference to the most extreme versions of it.

It is particularly important to distinguish between the variations of the idea and its practical application in today's National Wilderness Preservation System. What wilderness really looks like is often a far cry from what it seems in the debates.

Moreover, it would help if the real grist for the system could be examined in less than absolute terms. An area need not be subjected to the test of being entirely pristine or be found wanting. Nor to have value does wilderness have to be the only place where certain values are found—if more of them are found there.

The ambitions of conservation biologists would be more understandable if they focused less attention on protected wilderness, which they find so lacking in biodiversity, and more on the so-called "middle lands" (between wildlands and cities) where most of it is found. They cannot justify these misplaced preoccupations solely on the basis of restoring grizzly bear populations. Thousands of needy species await their attention elsewhere.

Wilderness managers must be mindful of their legal trust. Building up a case for what they are legally forbidden to do will only jeopardize any basis for trust with the public they serve. Nothing will build the case faster for a separate Wilderness Service than persisting in this folly.

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89. See Craig W. Allin, *Wilderness Policy*, in *WESTERN PUBLIC LANDS AND ENVIRONMENTAL POLITICS* 172, 186 (Charles Davis ed., 1997) (predicting that "[w]hen the allocation battles are over, sometime in the next century, wilderness policy will be management policy, and the inevitable conflicts will divide wilderness supporters from each other as well as from their traditional adversaries").

