

The

EDITED BY

Great

J. BAIRD CALLICOTT

New

AND

Wilderness

MICHAEL P. NELSON

Debate

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Michael P. Nelson

*An Amalgamation of Wilderness
Preservation Arguments* (1998)

NUMEROUS AND DIVERSE ARGUMENTS have been put forth by people of sundry backgrounds and times on behalf of the preservation of what they took to be wilderness. From backpackers to bureaucrats, Romantics to rednecks, socialists to suburbanites, historians to hunters, philosophers to philanthropists, people have sung the praises of areas which they assumed to exist in their "pristine state." It is safe to think that there will continue to be wilderness defenders regardless of the challenge presented to the very concept of wilderness found in the next two sections of this book. In the present essay I attempt to summarize in one place the many traditional and contemporary arguments proffered on behalf of "wilderness."

To review such arguments for the sake of historical interest and to observe how the received view of wilderness is tellingly manifested in such arguments is worthwhile. But there is another reason for wanting such a review. The rationales we employ on behalf of anything, including wilderness preservation, reflect our attitudes and values. Our attitudes toward and valuation of those places we have thought of as wilderness are revealed in the many traditional defenses of those places. Moreover, our attitudes and values profoundly affect the manner in which we treat something, in-

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cluding the places we call "wilderness." As environmental historian Roderick Nash observes, "So it is that attitudes and values can shape a nation's environment just as do bulldozers and chain saws."¹ Consequently, we might better understand our current environmental policies if we look at the historical rationales for protecting and defending certain wild places. And if we indeed do need to rethink our classical concept of wilderness—and therefore our current policies with regard to those places taken to be wilderness—a review of where we came from can surely aid us in such an undertaking.²

Wilderness preservation arguments have been previously catalogued by Roderick Nash, Holmes Rolston III, William Godfrey-Smith (now William Grey), Warwick Fox, George Sessions, and Michael McCloskey. Here I try to integrate and reconcile these disparate compilations. In the process, I rename and recategorize many of the arguments found in these sources. To them, I add hitherto unexplored wilderness preservation rationales. Hence, what follows is more an amalgamation than a taxonomy or typology; although there is a general attempt to move from narrowly instrumental, egocentric, and anthropocentric values to broader social, biocentric, and even intrinsic values attributed to putative wilderness.

Admittedly, an inherent tension exists in such a project. Most of the wilderness preservation arguments contained herein take the existence of wilderness for granted. However, as the next two sections of this anthology document, the usefulness of the concept of wilderness is correctly subject to intense debate: a great new wilderness debate.

Further, all of the following arguments for wilderness preservation are significantly biased in two major ways. First, they assume a terrestrial and not an oceanic or even extraterrestrial sense of wilderness. One might argue that they really ought also to apply to marine wildernesses and to the other, so far untrammelled, planets. Accordingly, I will interject a non-terrestrial perspective into the following arguments when it seems appropriate to do so. Second, the received wilderness idea, and hence many of these arguments for wilderness preservation, has an Australian-American bias. Many Europeans, for example, have no wilderness to worry about preserving. As histories of land settlement and tenure differ so do senses and views of the landscape. Arguably, it takes designated wilderness areas, or at least some recent memory of or belief in a once pristine

landscape, to have a received view of wilderness. Actually, then, we are only referring to certain cultures—Protestant Christian, colonial, and postcolonial cultures in particular—when we refer to “a received view of wilderness.”

1. THE NATURAL RESOURCES ARGUMENT

In many of those areas we refer to as wilderness, there exist significant quantities of untapped yet precious physical resources. Certain designated wilderness areas are great repositories of a wide variety of natural resources and we humans can render our future more secure by preserving these resource reserves. Clearly this is the most narrowly anthropocentric, instrumental, and simpleminded preservation argument that one could advance. It is, therefore, also the most popular and effective argument for the preservation of purported wilderness.

Some writers even suggest that their value as physical resources for *present* or *immediate* exploitation is a rationale for wilderness *preservation!* “Market Value,” is what Rolston calls this liquidatable wilderness value.³ B. L. Driver, Nash, and Glenn Haas refer to wilderness resources as individual and societal “Commodity-Related Benefits,” and cite water, timber, minerals, and forage as examples of what they mean by wilderness-area-produced resources.⁴ However, a bit of reflection suggests that this entire argument is actually paradoxical, if not thoroughly self-contradictory. In theory, *designated wilderness areas are places where the extraction of resources is strictly prohibited*; ideally wilderness and resource extraction don’t mix.⁵ It would seem that if we use an area as a goods resource then we are no longer entitled to call it wilderness. Can we have our wilderness and eat it too? Can we extract resources from an area and still call it wilderness? Maybe we could harvest an area’s resources on a very small, sustainable, and non-trammeling scale and the area might still fit the description of wilderness. This argument, however, advanced by Rolston, is conceptually problematic as even small-scale natural resource exploitation arguably runs contrary to the received view of wilderness as untouched by human hands. Moreover, resource use is a matter of degree and “small scale” is a relative term. Such ambiguities leave the present resource extraction argument for wilderness preservation paradoxical and troubling. Less problematic is the argument that we could look at wilderness areas as resource

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reserves to be exploited only by future generations. Obviously, this is not paradoxical. If we are saving vast resource-rich areas, not exploiting them, we are preserving them. And if future generations did use those presently preserved wilderness areas for resource extraction then they would, at that point, no longer be wilderness areas. Resource reserves, then, are only wilderness areas insofar as their use is potential and not actual. Further, one might argue for preserving as wilderness some areas that may harbor *potential* resources whose existence and instrumental worth has not yet been discovered.⁶

Proponents of the resource reserve argument for wilderness preservation seem to assume that the world without wilderness areas is a world without the many natural resources found (and unfound) in them. That is, they seem to assume that natural resource conservation depends upon wilderness preservation. Wilderness is the untapped pool of natural resources. And this may be true of some resources. Old growth timber and grizzly bear hides come immediately to mind.

Some types of natural resources are so commonly cited as depending upon wilderness preservation that they merit separate discussion—to wit, hunting and medicine.

2. THE HUNTING ARGUMENT

One of the earliest and most popular wilderness preservation arguments asserted that areas of what was taken to be wilderness were worthy of protection because some of them provided terrific venues for hunting or supplied the natural resource of wild game.

Aldo Leopold, one of the earliest and most passionate advocates of wilderness preservation, was keen on what he thought of as wilderness hunting. He traveled to places like the Sierra Madre Occidental in northern Mexico to hunt wild game. He wrote essays with titles like “A Plea for Wilderness Hunting Grounds.” And he urged the U.S. Forest Service to set aside certain bits of pristine land dedicated to nothing but wilderness hunting. “The establishment of wilderness areas,” he wrote, “would provide an opportunity to produce and hunt certain kinds of game, such as elk, sheep, and bears, which do not always ‘mix well’ with settlement. . . . Wilderness areas are primarily a proposal to conserve at least a sample of a certain kind of recreational environment, of which game and hunting is an essential

part.”⁷ Hence, in order to hunt these more charismatic and “wilderness” dependent megafauna, their home ranges (purported wilderness) must be maintained.

This special case of wilderness preservation as a sort of big, fierce, almost tribal proving grounds has been especially championed or ridiculed because of its identification with virility, masculinity, and machismo. Leopold once wrote, “Public wilderness areas are essentially a means for allowing the more virile and primitive forms of outdoor recreation to survive.”⁸ But nowhere was the association of wilderness preservation, hunting, and masculinity more vehemently expressed than in the thoughts and writings of rough-riding U.S. President Theodore Roosevelt. In the twenty-three volumes of his collected written works, Roosevelt often refers to what was in his mind wilderness as a hunting grounds and laments its loss as such. Referring to modern Americans as overcivilized, slothful, and flabby, Roosevelt calls upon Americans to regain and develop those “fundamental frontier values,” to lead a “life of strenuous endeavor,” and to revel in the “savage virtues.”⁹ For Roosevelt, what he referred to as wilderness hunting was the means to accomplish this; for only in such wilderness hunting can a person (man) “show the qualities of hardihood, self-reliance, and resolution.”¹⁰ Roosevelt declared:

Every believer in manliness and therefore in manly sport, and every lover of nature, every man who appreciates the majesty and beauty of wilderness and of wild life, should strike hands with the farsighted men who wish to preserve our material resources, in an effort to keep our forests and our game beasts, game-birds, and game-fish—indeed, all the living creatures.¹¹

Three comments on this argument. First, we can easily expand on this argument and include fishing as well. In certain terrestrial designated wilderness areas the surface waters harbor the biggest trout that put up the fiercest fight. And deep-sea fishing is reported to be some of the most exciting fishing there is. Second, this argument pertains, however, only to certain putative wilderness areas and not to others. Places inhabited by animals that humans desire to hunt or have a historical predator/prey relationship with are worth preserving as wilderness, but those that are largely devoid of big game are not. Third, a century later the big-game-hunting argument for wilderness preservation is an embarrassment to many wilderness advocates. This is not an argument that contemporary wilderness

advocates often employ. It would be like mounting an argument for the establishment of zoos as places where people could go to taunt animals. In fact, many would ban hunting from wilderness areas as the epitome of an intrusive, exploitative, and destructive use of wild places and their denizens.

3. THE PHARMACOPOEIA ARGUMENT

Another special case of ostensible wilderness resource extraction is medicine.¹² The actual and potential pharmaceutical use of what some of us think of as wilderness is perhaps the single most prevalent and persuasive contemporary wilderness preservation argument. The areas of the earth many commonly referred to as wilderness—such as the Amazon Rainforest and the forests of the Pacific Northwest—contain and support the most species on earth.¹³ Since around 80 percent of the world’s medicines are derived from life forms,¹⁴ these “wilderness” areas therefore contain the greatest source of medicinal natural resources. As these places are “developed,” many of the species that live in them become extinct. Thus, we lose forever any medicinal use they may have had. Donella Meadows calls this the “Madagascar periwinkle argument,” referring to the celebrated rosy periwinkle (*Catharanthus roseus*) plant of Madagascar from which were derived the drugs vincristine and vinblastine, used in the treatment of leukemia.¹⁵

This argument seems unpersuasive if constructed in terms of the proven medicinal uses of wild species, since many medically useful species can be cultivated in plantations and laboratories or their active ingredients can be isolated and synthesized. The argument is most forceful in reference to potential, and yet unknown, medicinal uses of wild species. As noted, rainforests, old-growth forests, and the world’s oceans house the greatest numbers of species. Most such species have not been described by systematists, let alone assayed for their medicinal potential. Therefore, these same areas arguably also house the greatest source of potential medicines. If these areas are destructively developed, we will lose a significant portion of the species that live in them, and thus we will lose any medicinal use of those species as well. Hence, it is argued, these purported wilderness areas should be saved because they shelter both potential as well as actual medicinal resources.

This argument deserves comment as well. First, many designated wilderness areas in North America and Australia are not species-rich rainforests and old-growth forests. Hence the Madagascar periwinkle argument does little to support their preservation. Second, in conjunction with this argument, it is often noted that the people most knowledgeable about the medicinal uses of rainforest species are the local indigenous inhabitants. But an area inhabited and used by human beings is not, by definition, wilderness.

4. THE SERVICE ARGUMENT

In addition to the natural resource goods provided by certain putative wilderness areas, innumerable and invaluable services are said to be provided by many of these areas as well. Wetlands benefit humans indirectly by serving to protect important river headways. Unbroken forests remove carbon dioxide from the atmosphere and replenish its oxygen, as do the world's oceans. Since we humans depend upon clean air and water, such services are vital to our continued existence.

Thinking critically about this argument for a moment, we realize that wilderness is indeed a sufficient condition for the performance of these services, but it does not seem to be a necessary one. That is, these services are not unique to uninhabited or uncultivated places; they are performed by non-wilderness ecosystems as well. Iowa corn plants purify air and remove atmospheric carbon dioxide just as Douglas firs do. Moreover, recovering forests composed of fast-growing young trees do an even better job of this than do old-growth forests.

Nevertheless, certain ecological services can only be performed in large tracts of relatively untouched land. For example, some designated wilderness areas provide nurseries for species such as salmon. Conservation biologists tell us that certain species, like the grizzly bear, require large tracts of unbroken land to exist. And the earth's oceans help to moderate temperatures. Again, to be sure, certain non-wilderness areas do perform some of these same services. But they do not perform these services as efficiently and thriftily as alleged wilderness areas do. Some wilderness areas are irreplaceable sources of clean air and pure water.

Potentiality comes into play in this argument as well. Since we are not

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entirely sure exactly what all is in those areas we think of as wilderness, we cannot be entirely confident of all the unique and crucial services provided by them. Hence, for their potential services we ought to preserve them as well.

5. THE LIFE-SUPPORT ARGUMENT

Holmes Rolston explains that there exists "a parallel between the good of the system and that of the individual." Further, we depend upon the healthy functioning of various ecosystems. Ecosystems often have the greatest value for us when they are the most independent of us; or, as Rolston concludes, "So far as [we] are entwined with ecosystems, our choices . . . need to be within the capacities of biological systems, paying some attention to ecosystem value."¹⁶

George Sessions points out that this prudential argument was made famous in the 1960s and 1970s "ecological revolution" by thinkers such as Rachel Carson, Barry Commoner, and Anne and Paul Ehrlich. The Ehrlichs, for example, liken species eradication to the popping of an airplane's rivets. Rivet-popping will eventually lead to the demise of spaceship Earth.¹⁷

So, as a mechanism for supporting and ensuring human existence (and the existence of many other species for that matter), so-called wilderness areas not only should but must be preserved, it is argued. Is this argument persuasive? As an argument for wilderness, over and above an argument for species preservation, its proponents must prove that the only way to preserve species is to preserve wilderness. They must explain how species diversity coexisted with people in species-rich areas of the world for hundreds, even thousands of years. Indeed, if this argument is to work, two links must be made. The preservation of wilderness must be linked with the preservation of species, and the preservation of species must be linked with human survival. This latter link is also questionable. Are species rivets? Is Earth a spaceship? One might take "survival" in a literal sense. We might survive, but only in diminished numbers as impoverished creatures in an ecologically impoverished environment. In sum, such an argument opens up a virtual Pandora's box of difficult questions with tough answers.

6. THE PHYSICAL THERAPY ARGUMENT

It is argued that designated wilderness area-related activities are wonderful and essential ways to enhance and even remedy our physical health. Primitivists, for example, claim that the more closely we are associated with nature the more physically healthy we will be. Hence, if putative wilderness is the purest representative form of nature, we would be healthier if we took our physical exercise in such places, some argue. Socialist, wilderness advocate, and cofounder of the Wilderness Society, Robert Marshall once asserted that there exist great physical benefits to "wilderness activities."¹⁸

This may appear to be quite a weak argument for wilderness preservation, since people in many parts of the world are physically fit despite having no access to designated wilderness areas. Traditionally the world's greatest middle-distance runners have been British. And there are no wilderness areas in Britain. Exercising in what Marshall took to be wilderness is at best only a sufficient, not a necessary, condition for physical well-being. However, wilderness advocates might still argue that these proffered wilderness areas are the *best* source and measure of physical health. Hence to lose them is to lose the *greatest* source and measure of physical therapy.

This wilderness preservation argument is what Godfrey-Smith refers to as the Gymnasium argument. However, it seems that his classification actually has two separate arguments: one is that designated wilderness areas provide us with a source and measure of physical health and the other is that these places serve as a great place to engage in certain sports (which may also aid our physical health), or what I refer to here as the Arena argument.

7. THE ARENA ARGUMENT

Even more elementary than supplying a source and measure of physical fitness, wilderness preservation is sometimes urged on the grounds that many designated wilderness areas provide us with superb and incomparable locales for athletic and recreational pursuits.

In various designated wilderness areas we can engage in a variety of ac-

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tivities: we can go cross-country skiing, hunting, scuba diving, snowmobiling, rock climbing, swimming, kayaking, backpacking, canoeing, horseback riding, hiking, camping, and mountaineering. Those engaged in these pursuits argue that designated wilderness areas allow us an unprecedented place to test our skills, hone our muscles, and experience all of the joys associated with these activities. Aldo Leopold saw this as one of the primary goals of public wilderness areas:

Wilderness areas are, first of all, a means of perpetuating, in sport form, the . . . primitive skills in pioneering travel and subsistence . . . a series of sanctuaries for the primitive arts of wilderness travel, especially canoeing and packing [he was referring here to mule and horse packing]. . . . Recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life.¹⁹

We need places to roam, to use our leg muscles, places to use our hands in the grasping of natural things, so the argument goes. In the civilized world we keep fit and tone our bodies by running on the indoor treadmill, lifting weights, swimming laps, and going to aerobics classes at the local health spa. Wilderness areas provide us with places where we can develop our muscles and realize our strength by hiking, climbing, paddling, and so forth. . . . Obviously, it can contribute to physical well-being and even rehabilitate the disabled.

But we might ask why we need designated wilderness areas to do these things; I can paddle my canoe in a dam-created reservoir, hike in an industrial monoculture pine forest, and climb on a modern climbing-wall. The wilderness advocate may respond by claiming that these "artificial" places are pale substitutes for the "real" thing; that designated wilderness areas provide the *best* locales for these sorts of activities. They are unmatched and unmatched outdoor gymnasias, places to play. They have all—and more—of the sporting accoutrements that our more "civilized" physical fitness facilities have.

Some wilderness advocates even argue that just as we require certain cultural spaces for certain cultural activities (e.g., football fields to play football on, theaters to see movies in, etc.), so some wilderness athletic activities simply require wilderness areas to do them in. Just as deep-powder skiers require deep powder, mountain climbers mountains, and deep-sea divers deep seas, wilderness backpackers require wilderness to do their

thing. It seems that an essential ingredient in these activities is solitude and a pristine natural arena. Without a "wilderness" condition, enthusiasts of wilderness activities cannot pursue those activities.

There are really two different arguments here: first, wilderness is the best locale for certain activities; and, second, wilderness as the only locale for other activities. While one might grant that designated wilderness areas provide the *best* locale for certain activities—say deep-powder skiing and deep-sea diving—they do not provide the *sole* locale. Deep powder may lie a mere saunter from a ski resort. Deep seas exist under shipping lanes. These activities do not depend solely on the existence of designated or even *de facto* wilderness. On the other hand, it seems tautological and circular to claim that wilderness backpackers need wilderness. Still, it is an argument for wilderness preservation: one can hardly deny that wilderness recreationalists need wilderness in order to pursue their sports.

8. THE MENTAL THERAPY ARGUMENT

Perhaps even more prevalent than the above physical benefits of proffered wilderness is the argument for wilderness preservation on behalf of its actual and potential psychological health benefits. Wilderness advocates have often claimed that what are taken to be wilderness experiences can be psychologically therapeutic and can even significantly help treat psychologically disturbed persons.

Reflecting on the ever-increasing human desire to visit America's national parks, John Muir cites psychological dysfunction as a major cause, and refers to city people as "tired, nerve-shaken, overcivilized," "half-insane," "choked with care like clocks full of dust," and bursting with "rust and disease," "sins and cobweb cares."²⁰ According to Muir, visiting designated wilderness—which, as he realized, both necessitates and threatens its preservation—is the cure to these problems. In Muir's prescription for mental health, "wildness is a necessity," and wild places are "fountains of life."²¹ Others, such as Sigurd Olson, Robert Marshall, and even Sigmund Freud have argued that civilization represses, frustrates, and often breeds unhappiness and discontent in humans that can best be alleviated by periodic escape to what they took to be wilderness. More contemporary studies show that drug abusers, juvenile delinquents, and over-stressed ex-

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ecutives can and do often benefit from an occasional dose of wilderness experience.²²

Wilderness helps us to put our "civilized" lives in perspective; it simplifies living; reacquaints us with pain, fear, and solitude; provides us with a necessary sense of challenge; and helps us discover what is really important and essential to our existence. Or so some say. Wilderness experience is also said to be a great form of stress relief and serves as a superb pressure release for those living in metropolitan areas. Primitivists claim that just as there are great physical benefits to close association with nature in wilderness, such association also has the mentally therapeutic benefits of making us happier and more psychologically stable and balanced. On this same note, Rolston claims that "wildlands absorb a kind of urban negative disvalue . . . and provide a 'niche' that meets deep seated psychosomatic needs."²³

If one believes that the collective mental well-being of a society is but an aggregate of the mental well-being of its individual members, then the individual mental health of those who visit designated wilderness areas arguably contributes to the quality of a society's life and vitality. Some wilderness advocates even go so far as to assert that experience with wild places functions as a gauge or measure for our individual and collective sanity. Wallace Stegner, for example, asserts that his vision of wilderness is a "means of reassuring ourselves of our sanity as creatures."²⁴

None of the proponents of the mental health argument for wilderness preservation explain exactly how the existence of designated wilderness areas contributes to sanity. But even if we did grant that the existence of designated wilderness areas is a sufficient condition for instilling mental health, is it a necessary condition? There are seemingly many psychologically fit people who have never visited a designated wilderness area and there are undoubtedly "wilderness junkies" who are not mentally healthy or stable. Surely other methods of ensuring and gauging our mental health and sanity exist.

Nevertheless, some wilderness proponents claim that purported wilderness is necessary for human mental health. In his book *Nature and Madness*, ecologist Paul Shepard argues that we humans *need* wilderness. He claims that in the natural and healthy growth process there needs to be close association, experience, and bonding with the wild things that inhabit wild places.²⁵ Warwick Fox echoes Shepard's sentiments when he claims that

this sort of wilderness preservation argument “emphasizes the importance of the nonhuman world to humans for the development of healthy (sane) minds.”²⁶

However, even if these areas of alleged wilderness are only sufficient conditions for mental well-being, one might still wish to argue that they are the best means of assuring mental health. Moreover, one might argue that these “wild” places succor our souls in a much more socially and individually cost-effective manner than do therapists, twelve-step programs, support groups, churches, prisons, and mental institutions.

9. THE ART GALLERY ARGUMENT

Many people search out putative wilderness areas for aesthetic experience. Both beauty and sublimity may be found in these places, they say. Therefore, we should preserve them because they are sites of the beautiful and the sublime. “Wild” places, it is argued, are like gigantic art galleries.²⁷

In fact, some have argued that aesthetic experience, of the sort so-called wilderness offers, can border on the religious or mystical. Roderick Nash, for example, maintains that the experience of wild things involves “awe in the face of large, unmodified natural forces and places—such as storms, waterfalls, mountains and deserts.”²⁸ And William Wordsworth wrote that experiencing the beauty of what his vision of wilderness was produces “a motion and a spirit, that impels . . . and rolls through all things.”²⁹ Further, some argue that designated wilderness areas are places where the very meaning of aesthetic quality can be ascertained and that, therefore, all beauty is dependent upon such sites. Muir, for example, claims that “None of Nature’s landscapes are ugly so long as they are wild.”³⁰

The destruction of a designated wilderness area—and hence wilderness-dependent species such as wolves and grizzlies—it is claimed, would be as bad as, even worse than, the destruction of a painting by da Vinci or a sculpture by Michelangelo. In principle, works of art can be recreated, but wilderness-dependent species—like any species—cannot. As Aldo Leopold puts it in his essay “Goose Music,” “In dire necessity somebody might write another Iliad, or paint another ‘Angelus,’ but fashion a goose?”³¹ Now, geese are admittedly not a wilderness-dependent species and Leopold is not speaking directly of wilderness in this essay, but Leopold’s point clearly applies to wolves and grizzlies as well as to geese. What

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cannot almost unequivocally be recreated (*Jurassic Park*—considerations to the side) is an extinct species. And since species like wolves and grizzlies are dependent upon wilderness for their continued existence, the loss of wilderness is tantamount to the *permanent* loss of those species.

The intensity and type of beauty found in unique land forms, waterfalls, mountains, oceans, outer space, deserts, plants, and animals—all shaped by natural forces—cannot be replicated in urban or even pastoral settings, some wilderness advocates maintain. According to them, these places are both necessary and sufficient conditions for a true sense of beauty. Hence, if the loss of this beauty is to be avoided the preservation of wilderness areas is mandated.

10. THE INSPIRATION ARGUMENT

Many claim that putative wilderness areas are important to maintain because they provide inspiration for the artistically and intellectually inclined. In the process, these designated wilderness areas add to and help shape culture. Numerous artists—such as painters Thomas Cole, Thomas Moran, and Albert Bierstadt; photographers Ansel Adams and Galen Rowell; writers James Fenimore Cooper, Colin Fletcher, and “Cactus” Ed Abbey (not to mention Emerson and Thoreau); musicians John Denver and “Walkin’” Jim Stoltz; and poets Walt Whitman, William Wordsworth, and Robinson Jeffers, to name but a few—find their inspiration in what they take to be wilderness. For them, “wilderness” provides an excellent and unique motif for art.

Some even assert that wilderness serves to inspire those in the intellectual arts as well. Philosophers, for example—especially environmental philosophers—often regard what they take to be wilderness experience to be a contemplative catalyst or cognitive genesis for the really big questions of philosophy: What is the meaning of the universe (a question evoked especially by extraterrestrial wilderness, it seems); where we all came from; what we are all doing here; where we are going; what the character of our existence is, and what our moral place in the world is. Now of course there are other catalysts for artistic and philosophic inspiration: cattle, cities, and factories to name but a few. The point is not that wilderness areas are the only muses for art, but rather that they are excellent and unique ones, and that to lose any such inspirational kindling would be tragic.

11. THE CATHEDRAL ARGUMENT

For some, ostensible wilderness is a site for spiritual, mystical, or religious encounters: places to experience mystery, moral regeneration, spiritual revival, meaning, oneness, unity, wonder, awe, inspiration, or a sense of harmony with the rest of creation—all essentially religious experiences. Wilderness areas are also said to be places where one can come to an understanding of and engage in the celebration of the creation—an essentially religious activity. Hence, for people who think like this, designated wilderness areas can and do serve as a sort of (or in lieu of) a church, mosque, tabernacle, synagogue, or cathedral. We should, then, no more destroy wilderness areas than we should raze Mecca or turn the Sistine Chapel into a giant grain silo. For some, wild places represent and reflect the various spiritual and religious values that they hold dear.

To go one step further, some even claim that since designated wilderness areas are the closest thing we have on earth to the original work of God, to destroy them would be tantamount to the destruction of God's handiwork, forever altering God's original intent.

John Muir believed that the closer one was to nature, the closer one was to God. To Muir, "wilderness" was the highest manifestation of nature and so was a "window opening into heaven, a mirror reflecting the Creator," and all parts of it were seen as "sparks of the Divine Soul."³² Yosemite's Hetch Hetchy Valley was, for Muir, a place epitomizing wilderness, a shrine to a higher existence, the destruction of which was tantamount to sacrilege. For this reason, Muir vehemently defended Hetch Hetchy and said of its would-be desecrators:

These temple destroyers, devotees of ravaging commercialism, seem to have a perfect contempt for Nature, and, instead of lifting their eyes to the God of the mountains, lift them to the Almighty Dollar.

Dam Hetch Hetchy! As well dam for water-tanks the people's cathedrals and churches, for no holier temple has ever been consecrated by the heart of man.³³

Transcendentalists, such as Ralph Waldo Emerson, Thoreau, and William Cullen Bryant, went so far as to claim that one could only genuinely understand moral and aesthetic truths in what they took to be a wilderness setting. For these thinkers, civilization only fragments and taints one's genuine moral and aesthetic understanding.

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Actually, this appears to be a quite powerful political argument for legally preserving designated wilderness areas. In the United States, for example, if the sorts of experiences and activities just listed are presumed to be essentially religious experiences and activities, then designated wilderness areas can be said to serve a religious function. Hence, designated American wilderness areas could be defended on the constitutional grounds of freedom to worship as one chooses. Regardless of concerns about the size or type of the area required or the fact that only a minority of people actually "go to church in the woods," designated wilderness areas might still merit protection, both ethically and legally, as places of worship.

12. THE LABORATORY ARGUMENT

Some (mostly wildlife, marine, and conservation biologists) argue that the preservation of designated areas of wilderness is important because it provides scientists with an unprecedented location and the raw materials for certain kinds of scientific inquiry. In order to conduct their scientific queries, these wilderness advocates require many types and varieties of geographical locales which remain in their pristine state. This scientific study is said to be important not only for the sake of knowledge itself but also more instrumentally because a society can use this knowledge to form a better understanding of itself, the world around it, and hence its proper role in that world. Wilderness is viewed by these people as one end of the spectrum of locales for such study.

Admittedly, there is a potential paradox involved with this argument—as there is with all wilderness preservation arguments that entail the use areas of putative wilderness by humans. If we use wilderness areas as laboratories (or gymnasiums, cathedrals, resource pools, etc. . . .) in too dense or intrusive a fashion, they would then cease to be wilderness areas. The use, then, of wilderness areas by humans possibly is or could be a threat to such areas themselves. This tension ought always to be kept in mind when considering these sorts of arguments.

13. THE STANDARD OF LAND HEALTH ARGUMENT

Aldo Leopold's arguments on behalf of wilderness preservation shifted and expanded as his thought progressed. The more mature Leopold be-

lieved that what he took to be wilderness was important for scientific as well as for recreational reasons. Leopold proclaimed that "all wild areas . . . have value . . . for land science. . . . Recreation is not their only, or even their principal, utility." For Leopold, the main scientific use of "wilderness" was as a base-datum or measure of land health and as a model of a normal ecologically balanced landscape. According to Leopold, wilderness areas serve as a measure "of what the land was, what it is, and what it ought to be," providing us with both an actual ecological control sample of healthy land and a normative measure of what we ought to strive toward.

Throughout his life, Leopold became increasingly interested in land use and the science of land health. In order to have such a science, Leopold declared that we need "first of all, a base datum of normality, a picture of how healthy land maintains itself as an organism." According to Leopold, the "most perfect norm is wilderness" for "in many cases we literally do not know how good a performance to expect of healthy land unless we have a wild area for comparison with sick ones." Hence, we can easily see how "wilderness," in Leopold's words, "assumes unexpected importance as a laboratory for the study of land-health."³⁴

Rolston develops Leopold's original idea: "We want to know what the unmolested system was in order to fit ourselves more intelligently in with its operations when we do alter it."³⁵ Further, as a measure of healthy land, areas of "wilderness" are said to be of value, according to Warwick Fox, as a sort of "early warning system" whose job it is "to warn us of more general kinds of deterioration in the quality or quantity of the free 'goods and services' that are provided by our 'life support system'"; wilderness can function as the proverbial canary in the coal mine.³⁶

"But," one might ask, "why do we need *so much* wilderness; *so many* wilderness areas?" "Couldn't we have a base datum and measure of ecological health with but one wilderness area?" The answer is no. In order to serve as a measure of land health, it is argued, designated wilderness areas must be large and varied; for there are many distinct types of biotic communities. Leopold tells us—in a passage remarkably in line with contemporary conservation biology—that "each biotic province needs its own wilderness for comparative studies of used and unused land. . . . In short all available wild areas, large or small, are likely to have value as norms for land science."³⁷

Interestingly, this argument avoids the potential paradox of overuse

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found in all use-oriented arguments because such control areas are *not* places to conduct invasive or manipulative research. Science only takes the pulse of these areas—so to speak.

Although this appears to be a strong argument for preserving designated wilderness areas it also appears, at least in part, to buy into the ontologically impossible notion that there are places totally untouched and unaffected by human actions. In order for "wilderness" to serve as a standard of land health, we must recognize that "wilderness" needs to be conceived of as a relative and tenuous concept.

14. THE STORAGE SILO ARGUMENT

Taking the Laboratory argument one step further, it is often asserted by conservation biologists, among others, that many supposed terrestrial and aquatic wilderness areas are worth saving because they contain vast amounts of biodiversity; especially genetic information or species diversity, or what Harvard biologist E. O. Wilson refers to as the "diversity of life." Beyond the argument that humans have no moral right to muck with the evolutionary and ecological workings of *all* ecosystems of a given type, maintaining these genetic reservoirs intact is instrumentally important because they function as a great safety device; holding a large portion of the world's accumulated evolutionary and ecological wisdom as they do. These proponents of wilderness claim that the whole of this information can only be properly maintained in its original context. Hence, some wilderness areas can serve as places where various forms of biodiversity can be stored for a time when they might be needed for genetic engineering, agricultural rejuvenation, or some other crucial purpose. Biotically rich and untrammelled wilderness areas are better than trammelled areas at providing for the continuation of the crucial processes of evolution and ecology since biotically rich and untrammelled areas have larger gene pools and are places where evolution can work unfettered to bring forth new species. Hence, biotically rich and untrammelled wilderness areas store the information that can help us to better manage and rebuild our natural environment. Certain wilderness areas, some believe, are therefore the key to life on earth. As David Brower puts it, "Wilderness holds the answers to the questions we do not yet know how to ask."³⁸

Obviously, it would be foolish to knowingly extirpate natural processes.

According to Aldo Leopold, "To keep every cog and wheel is the first precaution of intelligent tinkering."³⁹ Hence, to destroy biotically rich wilderness areas is tantamount to the destruction of vast amounts of hitherto untapped and unused, but crucial, information; or, as Holmes Rolston analogizes, "destroying wildlands is like burning unread books."⁴⁰

15. THE CLASSROOM ARGUMENT

Those of us who regularly or only occasionally visit designated wilderness areas are very aware that these locales often function as a sort of classroom where a plethora of valuable lessons can be learned.

Obviously, these experiences can increase our taxonomical environmental education: we can learn to identify Norway maples, magnolia warblers, spotted joe-pye, or timber wolf scat, for example. Granted, we can learn taxonomy elsewhere, but only in would-be wilderness can we encounter and learn of the habits and behaviors of some of these "others"; for only in large tracts of unbroken land do certain animals exist. According to many, "wilderness" experiences are also the *best* way to teach us such tangible skills as navigation and survival, and help us attain a feeling for a particular geographic region and features. However, it is also thought that additional important lessons can be learned through exposure to what many refer to as wilderness.

Nearly all advocates of wilderness preservation note the way that "wilderness experience" can help us put things in perspective or put our priorities in order, how it can teach us proper values and a sense of valuation, how it can instill within us a sense of humility and help build our individual and collective characters. Many also claim that periodic trips to designated wilderness areas force us to recognize our proper place as stewards, not masters, of the land; endow us with long-sighted and ecological vision; train us to make better public-policy decisions; furnish us with a sense of individual responsibility; promote our self-confidence and self-image; teach us how to cooperate successfully with others and how to assess and take wise and appropriate risks; and instill within us a reverence for all life and a proper sense of beauty. Groups such as Outward Bound and the Girl and Boy Scouts, for example, depend upon and utilize designated wilderness areas as classrooms to teach such lessons. In addition, if considered as places where natural processes continue unfettered, desig-

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nated wilderness areas might also be said to provide a necessary and unique place to glean insights into the precious scientific studies of evolution and ecology.

And finally, for some environmental ethicists at least, the most important pedagogical aspect of "wilderness experience" lies in the fact that the lessons learned through and only through such exposure plays a necessary role in the development and support of a proper and sound environmental ethic. Hence, they argue, one could not develop an ethical relation toward the nonhuman natural environment without the presence of wilderness areas. Given the arguments against the very existence of wilderness found in this book, then, this would seem to imply that if there is no such thing as wilderness then there would be no such thing as an appropriate environmental ethic.

On a critical note: one must ask two questions. First, does this classroom argument for the preservation of designated wilderness areas hold true for all of these areas? That is, are all, or only some, designated wilderness areas sources of these important lessons? And second, while it may be true that the presence of designated wilderness areas is a sufficient condition for providing these valuable lessons, is it a necessary one? Can we not learn these lessons elsewhere? Or, is the argument that these are nonduplicable locales for environmental, life, and ethical wisdom? This argument appears to be weakened either if it does not hold true for all designated wilderness areas or if there are other ways or places to learn these lessons.

16. THE ONTOGENY ARGUMENT

Individually and collectively we human beings, like all living things, have evolved within a specific context. We are what we are, have become what we have become, because of the environment in which we have flourished. Some argue that the context of this historical development includes "wilderness" to a great extent—originally cosmic, then aquatic, and most recently terrestrial.

Homo sapiens and their communities, like all species and their respective communities, are deeply entrenched in nature and nature's processes. In other words, we fit our context. One might go on from this simple premise to argue that since what is thought of as wilderness is the paradigmatic form of nature and its processes, that this wilderness—first oceanic and

then terrestrial—is and continues to be the source of our evolution. Hence, putative wilderness in its many forms not only ought to but must be preserved for continued human evolution.

We could, then, view wilderness preservation as a symbolic gesture of love and respect for our evolutionary ontogeny and perhaps as a defense of our evolutionary future. Edward Abbey adds such an argument to his list of wilderness preservation rationales. “The love of wilderness . . .,” he wrote, “is . . . an expression of loyalty to the earth, the earth which bore us and sustains us, the only home we shall ever know, the only paradise we ever need—if only we had the eyes to see.” Abbey goes on to claim that the destruction of these areas of “wilderness” would be a sin, then, against our origins, or the “true original sin.”⁴¹

Additionally, there is a nonsymbolic sense of this argument. Walt Whitman believed that those who remain closer and more in touch with their evolutionary context become better people. As he wrote in *Leaves of Grass*, “Now I see the secret of the making of the best persons. / It is to grow in the open air, and to eat and sleep with the earth.”⁴² Nash points out that a variety of primitivists—from Jean-Jacques Rousseau to Edgar Rice Burroughs—concur with Whitman and likewise declare that “the wild world produces a superior human being.”⁴³

Our ontogenetic setting, for Whitman and Nash at least, deserves special consideration since our evolutionary past, present, and future is intimately tied to what we now call wilderness. Therefore, according to this argument, these places should be preserved in order to ensure our context, our physio/psycho-genesis and natural individual development. And excursions to these areas, then, appear to function as visitations to our ancestral residence or what Abbey once referred to as the “journey home.”

There is a definite irony to this argument. If “wilderness” is a place where humans are but visitors who do not remain or an area beyond that which is cultivated or inhabited continuously by humans, how in the world could it be our literal ancestral home? In fact, “wilderness,” designated or not, is often portrayed as an area undefiled by human habitation, a place where people do not live. So how could it be our home? And if we have evicted ourselves from our ancestral paradise home irrevocably, how can wilderness be the locus or future of our human evolution?

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17. THE CULTURAL DIVERSITY ARGUMENT

In one of his most familiar works, “Walking,” Thoreau writes,

Our ancestors were savages. The story of Romulus and Remus being suckled by a wolf is not a meaningless fable. The founders of every state which has risen to eminence have drawn their nourishment and vigor from similar wild sources. . . . In such soil grew Homer and Confucius and the rest, and out of such a wilderness comes the Reformer eating locusts and wild honey.⁴⁴

So it is argued that, just as human beings generically derive from a context, specific cultures are derived from and are dependent upon a certain ontogenetic context as well. And the wide variety of cultural variation or diversity stems from the fact that there has been a wide variety of natural ecosystems. As Leopold put it, “The rich diversity of the world’s cultures reflects a corresponding diversity in the wilds that gave them birth.”⁴⁵ The vigor for culture, some deduce, comes from wilderness. Or, as Nash writes, “The wild world is cultural raw material.”⁴⁶

A wide variety of designated wilderness areas ought to be preserved, it is thought, because they function as the foundation for the world’s myriad cultures. As much as we value individual cultures and the diversity of cultures, we must to the same extent value their respective areas of purported wilderness. “We want some wilderness preserved,” Rolston claims, “because it comes to express the values of the culture superimposed on it, entering our sense of belongingness and identity.”⁴⁷

There seems to be a paradox implicit in this argument. If the diverse cultures remain in the wilderness that gave them birth, then the places they are in are not, by definition, wilderness. If various areas of the world are *designated* wilderness areas and the cultures they spawned are expelled from them (if these cultures still exist), as the Ik were from the Kidepo in Uganda and the !Kung were from the Etosha National Park in Namibia, then the cultures are exterminated in order to preserve the wildernesses that spawned them.⁴⁸

Furthermore, to argue that areas of wilderness ought to be preserved as museum pieces in honor of a part of the environment that helped shape each unique culture commits the fallacy of appeal to tradition. Slavery helped to form much of the American Deep South; the oppressive Hindu caste system largely shaped modern India; various acts of

violence, wars, and systems of patriarchy have helped to mold various world cultures. Should remnant enclaves of these institutions likewise be preserved because they are the roots of various cultures? Should we designate one or two counties in Mississippi as Old South cultural reserves in which the plantation system, including slavery, is preserved? And so on.

18. THE NATIONAL CHARACTER ARGUMENT

A specific example of the above two arguments is national character, and even more specific is colonial American national character.

In the United States, many see designated wilderness areas as monuments; symbolically enshrining national values. Our Euro-American cultural identity, for example, is often said to be deeply entwined with the existence of designated wilderness areas. For many Euro-Americans, the United States is the place where the eagle flies, the buffalo roam, and the deer and the antelope play. Wallace Stegner calls the wilderness idea "something that has helped form our character and that has certainly shaped our history as a people." Designated wilderness areas ought to be preserved then, because they are a "part of the geography of hope."⁴⁹ Many seminal American historical thinkers—such as Gertrude Stein and Frederick Jackson Turner—felt that designated wilderness areas in the United States serve as what Roderick Nash refers to as the "crucible of American character."⁵⁰

Hence it is argued that designated wilderness areas ought to be preserved because they and their resident species helped form and continue to enshrine our most fundamental and powerful Euro-American values. Nash notes that American president Theodore Roosevelt was particularly fond of the argument which asserts that since "wilderness shaped our national values and institutions, it follows that one of the most important roles of nature reserves is keeping those values and institutions alive."⁵¹ Environmental philosopher Mark Sagoff even goes so far as to submit that wilderness preservation has constitutional clout:

If restraints on the exploitation of our environment are to be adequate, then, they must be found in the Constitution itself. . . . To say that an environmental policy can be based on the Constitution does not require, of

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course, a constitutional passage or article which directly concerns the environment; rather the argument would rest on the concept of nationhood, the structure created by the Constitution as a single instrument functioning in all of its parts. It is reasonable to think that cultural traditions and values constitute a condition—at least a causal one—of our political and legal freedom; and therefore insofar as the Constitution safeguards our nation as a political entity, it must safeguard our cultural integrity as well. Citizenship, then, can be seen to involve not only legal and political but also cultural rights and responsibilities. . . . The right to . . . demand that the mountains be left as a symbol of the sublime, a quality which is extremely important in our cultural history, . . . the right to cherish traditional national symbols, the right to preserve in the environment the qualities we associate with our character as a people, belongs to us as Americans. The concept of nationhood implies this right; and for this reason, it is constitutionally based.⁵²

Moreover, for all the reasons that we preserve in perpetuity the dwelling places of Americans of European descent (e.g., Puritans or Mormons) as national landmarks denoting their cultural heritage, we ought also to preserve many areas of putative wilderness as well. These designated wilderness areas, we might argue, would function as a similar sort of cultural monument, since they are seen by some to be the historical home of aboriginal American peoples like the Sioux, Hopi, Iroquois, or Inuit.⁵³ As such, of course, they were not wilderness areas, since these people were people (not wildlife) and did live there (not just visit).

Now there is admittedly yet another inherent paradox involved with the above three ontogeny-type arguments, and especially with the National Character argument. If wilderness preservation is a good thing because it is a representation of Euro-American ontogeny then wilderness destruction seems to be a good thing as well. That part of our Euro-American ontogeny, most recently evolved is the tendency to work to destroy, or at least to severely alter and interrupt, what colonizing Euro-Americans took to be wilderness. Like belief in the existence of a vast North American wilderness, the transformation of that wilderness could be said to be an important aspect of our national character. So, we might argue that Euro-Americans and Euro-American wilderness colonization and destruction is part of Euro-American national character. Hence, destroying designated wilderness areas would be more consistent with the Euro-American national character than preserving it. Wilderness preservation

might be seen as both good and bad at the same time then. It is good because the North American "wilderness" is the raw material of Euro-American culture and is valuable as such. It is bad because the destruction of those same places is part of that same national ontogeny and we would be interfering with that ontogeny if we were to artificially restrain or frustrate it. The root problem, it seems, is to make the argument that X is good merely because X is part of our heritage. Slavery, violence, and sexism are parts of our heritage, but that is no reason to keep them around as treasured national institutions. Logicians call this the Genetic Fallacy.

19. THE SELF-REALIZATION ARGUMENT

One of the fundamental tenets of Deep Ecology is the notion of self-realization. Relying heavily upon the works of Muir, Thoreau, Leopold, and the Romantic and American Transcendental traditions, Deep Ecologists assert that—in order truly and appropriately to perceive and understand the world, our place in it, and our duties to it—we must first dismiss the assumed but inaccurate bifurcation between self and nature. We must grasp the depth of the relational reality of all things, including the non-human world. In addition to the general character and self-image building mentioned above, wilderness preservation becomes crucial for Deep Ecologists because designated wilderness areas are, for them, necessary components in this process of self-realization—a sort of asylum of reorientation where this relational self ideal can take form. We must, therefore, maintain areas of "wilderness" in order to achieve a complete and appropriate view of self. Designated wilderness areas are crucial, according to this argument, for individual development and continued existence. No designated wilderness areas means no self-realization; no Deep Ecology; no proper view of self and world; no appropriate treatment of self and world; no continued self-existence.⁵⁴

On a more critical note, this argument appears to fall prey to the recurring problem of confusing necessary and sufficient conditions. Merely because designated wilderness areas provide an arguably sufficient condition for self-realization, it remains to be proven that they are a necessary condition for such self-realization.

20. THE DISEASE SEQUESTRATION ARGUMENT

This is a very new and perhaps very worthy wilderness preservation argument.

As noted, more than half of the earth's extant species live in the tropics; and most of these species are not known to science. Since most all species host viruses, we can assume that there are at least as many viruses as there are living species, if not some multiple of that number.

One thing we do know is that viruses adapt to their hosts. A successful virus either does not, or "learns" not to, kill its host so as to have a residence for its continued existence. However, as human population continues to surge and human invasion into places such as tropical habitats becomes more prevalent, humans cross never-before-traversed ecological and spatial boundaries. Hence, humans increasingly encounter new species; in Star Trek phraseology, we "boldly go where no one has gone before." As humans intrude, put pressure upon, or destroy supposed wilderness, viruses will adapt and jump hosts, taking humans as their new hosts. The effects of this "host jumping" are unknown and potentially dreadful, especially when dealing with lethal viruses for which there is no vaccine nor cure. Known viruses, such as Guanarito and Marburg, and currently "emerging" viruses like Q fever and Monkeypox, are part of a long list of viruses which have already jumped to human hosts with deleterious results.⁵⁵ In his insightful—and truly frightening—essay in *The New Yorker*, Richard Preston explains:

When an ecosystem suffers degradation, many species die out and a few survivor-species have population explosions. Viruses in a damaged ecosystem can come under extreme selective pressure. Viruses are adaptable: they react to change and can mutate fast, and they can jump among species of hosts. As people enter the forest and clear it, viruses come out, carried in their survivor-hosts—rodents, insects, soft ticks—and the viruses meet *Homo sapiens*.⁵⁶

In fact, human immunodeficiency virus (HIV) is another, more familiar, contemporary example. The reigning theory asserts that HIV is a mutant zoonotic virus that originally resided in the rain forests of Central Africa which jumped to humans when they had some sort of intimate contact (i.e., sexual contact, hunters touching the bloody tissue of the victim, etc.)

with the sooty mangabey, an African monkey. We do not know the source for certain; HIV may have come from chimpanzees or even from other previously isolated humans, or it may just be a viral mutation of some sort. Nevertheless, as Preston points out,

The emergence of AIDS appears to be a natural consequence of the ruin of the tropical biosphere. Unknown viruses are coming out of the equatorial wildernesses of the earth and discovering the human race. It seems to be happening as a result of the destruction of tropical habitats. You might call AIDS the revenge of the rain forest. AIDS is arguably the worst environmental disaster of the twentieth century, so far.⁵⁷

And HIV is not even as dangerous as some. Yes, it is lethal, but it is relatively noninfectious considering how it might be transmitted. Just imagine HIV as an airborne pathogen, which is not impossible. Ebola Zaire, a lethal airborne filovirus that emerged in fifty-five African villages in 1976 and subjected nine out of ten of its victims to hideous deaths within days of infection, is an example of an encountered virus even more lethal than HIV. And viruses are only part of this gloom-and-doom story. As Preston tells us, “mutant bacteria, such as the strains that cause multidrug-resistant tuberculosis, and protozoans, such as mutant strains of malaria, have become major and growing threats to the [world’s] population” as well.⁵⁸

Since these disease-causing agents are for the most part sequestered in many of the earth’s remaining wild areas, our intrusion into these areas is a definite issue—one that deserves our utmost attention. So, not only do many of the wild areas of the earth serve as a disaster hedge by acting as a buffer, but much ostensible wilderness left intact is thought to protect us from potential viral and bacterial decimation. For this reason, any sane person would agree, some regions of the Earth—those harboring tropical viruses—deserve special consideration and preservation.

However, this argument appears to be less an argument for preserving designated wilderness areas and more an argument for not intruding into those areas where these viruses thrive; less an argument for preserving the Bob Marshall Wilderness Area and more an argument for staying out of some very specific (i.e., tropical) places. Moreover, with this argument also there are elements of paradox and irony. These lairs of deadly viruses are not exactly those places that we wish to *visit* for recreation, inspiration, religious awe, and so forth.

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21. THE SALVATION OF FREEDOM ARGUMENT

In his novel celebrating the arenaceous wilds of southern Utah’s Arches National Monument, *Desert Solitaire*, Edward Abbey defends the preservation of what he imagines to be wilderness for what he calls “political reasons.” He claims that we need designated and de facto wilderness areas, whether or not we ever set foot in them, to serve as potential sanctuaries from oppressive governmental structures. As Abbey writes,

We may need it [wilderness] someday not only as a refuge from excessive industrialism but also as a refuge from authoritarian government, from political oppression. Grand Canyon, Big Bend, Yellowstone and the High Sierras may be required to function as bases for guerrilla warfare against tyranny.

Abbey reminds us of some of the supposed findings of modern political science—that our cities might easily be transformed into concentration camps and that one of the key strategies in the imposition of any dictatorial regime in any country is to “Raze the wilderness. Dam the rivers, flood the canyons, drain the swamps, log the forests, strip-mine the hills, bulldoze the mountains, irrigate the deserts and improve the national parks into national parking lots.”

In order to attempt to alleviate the obvious charge that this is only a paranoid survivalist-type fantasy, Abbey cites as historical fact that the worst of the world’s tyrannies have occurred in those countries with the most industry and the least of what Abbey thinks of as wilderness. Centralized oppressive domination flourished in Germany, Hungary, and the Dominican Republic, according to Abbey, because “an urbanized environment gives the advantage to the power with the technological equipment.” On the other hand, more rural insurrections, such as those in Cuba, Algeria, the American colonies, and Vietnam, have favored the revolutionaries since there remained in those countries “mountains, desert, and jungle hinterlands;” or areas of would-be wilderness.⁵⁹ Further support for Abbey’s wilderness preservation argument might be drawn from the Old Testament story of the Exodus and the New Testament story of John the Baptist. The political dangers of a “wilderness-free” world are fictionally portrayed in Aldous Huxley’s *Brave New World* and George Orwell’s *1984*.

It should be noted, however, that Abbey’s evidence is quite shaky since

the counter-examples of the Soviet Union, with its vast expanses of “wilderness,” and Cuba, since Castro, throw a monkey wrench into his political theory. Moreover, philosopher Michael Zimmerman has recently chronicled how the Nazi Germans advocated nature preservation more ardently than any other Europeans.⁶⁰

To sum up, according to this argument, areas of “wilderness” in general provide us with a place to escape to and combat a totalitarian police state; as well as providing us with the very standard or meaning of freedom. Hence, in the minds of those such as Ed Abbey, in order to preserve freedom we must preserve alleged wilderness areas.

Now, obviously, not all designated wilderness areas would provide us with base camps for guerrilla warfare against tyrannical governments and one has to allow for the possibility at least that there might be some non-wilderness areas which would. This argument seems, then, to be more an argument for areas from which to oppose tyranny rather than necessarily an argument for the preservation of designated wilderness areas.

Moreover, the fact that something would provide us with the means to oppose tyrannical government is *not* sufficient justification for its preservation. Private atomic-bomb factories in each of our basements would put us in a good position to oppose tyrannical governments too, but clearly (or hopefully) Abbey would not advocate *that*.

22. THE MYTHOPOETIC ARGUMENT

Some contemporary thinkers, such as Deep Ecologists and postmodernists, argue that wilderness preservation is critical for mythopoetic reasons. Those places they view as wilderness serve as the optimum location for the viewing of the history of myth and are absolutely crucial for the building of the myth of the future. In his mythopoetic book *The Idea of Wilderness*, Max Oelschlaeger writes, in reference to a postmodern conception of nature, “the idea of wilderness in postmodern context is . . . a search for meaning—for a new creation story or mythology—that is leading humankind out of a homocentric prison into the cosmic wilderness.”⁶¹ Putative wilderness areas function as an essential source of meaning, vital for the future of humanity.

The current “Men’s Movement” is an excellent example of a mythopo-

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etic use of putative wilderness. In their search for a new way of understanding or realizing their manhood, those involved in the movement have a strong tendency to gather in “wild places” because they seek to recover the roots of their maleness as hunters and companions of animals originally thought to be found in “wilderness.” Adding to this, Robert Bly (the central figure in the “mythopoetic” branch of the movement) promotes the ideal of the “wildman,” which has central significance as one of the movement’s goals. Men should strive, according to Bly, to be whole, healthy, and energized by realizing the “wildman” deep inside their psyches. He is not here referring to any irrational lunatic sense of wild but rather arguing that men need to get in touch with their more primitive or natural roots. Male mythologizing, accordingly, requires areas of would-be wilderness, and for those in the Men’s Movement and others, without this “wilderness” a sense of the history of, standard for, or place for the future of myth-building is lost.

This argument appears to rest on some unproved premises: that “wilderness” is the sole or best source of future mythologizing, that our future is impoverished without this source of myth, and that areas other than designated wilderness areas cannot serve as adequate or even more appropriate mythological sources.

23. THE NECESSITY ARGUMENT

As we have seen above, certain wilderness advocates believe in the truism that, historically speaking, no civilized world would have evolved without the prior existence of wilderness. As Leopold claims, “wilderness is the raw material out of which man has hammered the artifact called civilization.”⁶² But one could, on a more conceptual level, argue that “wilderness” is *necessary* in a more philosophical sense. One might claim that an idea or concept of wilderness is logically and metaphysically necessary (a sense of necessity not historically dependent) for the existence and complete understanding of the concepts of culture and civilization.

Although some may contend that this is more of an explanation of than a justification for wilderness, and that it does not require the preservation of anything but, at the most, a very small bit of wilderness (and at the least only the concept of wilderness and hence no areas of wilderness at all), oth-

ers might argue that to truly understand concepts such as culture, civilization, freedom, primitive, development, and perhaps others, we need physical wildness (such as that found in designated wilderness areas) to serve as a model or foil of contrast. Holmes Rolston explains:

Humans can think about ultimates: they can espouse worldviews: indeed, they are not fully human until they do. No one can form a comprehensive worldview without a concept of nature, and no one can form a view of nature without evaluating it in the wild. . . . In that sense, one of the highest cultural values, an examined worldview, is impossible to achieve without wild nature to be evaluated as a foil to and indeed source of culture.⁶³

There can be no finish without a start; no good without evil; no yin without yang; and (according to folksinger Arlo Guthrie) “no light without a dark to stick it in.” Similarly then, wilderness might be said to be logically (wherever “civilization” has meaning, “wilderness” does also) and metaphysically (where one thing exists, its opposite must also) necessary for a complete and proper understanding of civilization. According to this argument, there can be no proper understanding of civilization when there is no concept of wilderness, and there can be no complete and proper understanding of the concept of wilderness without genuine designated wilderness areas. Thus the move to rid the world of designated wilderness areas is tantamount to an attempt to deny and dismantle a necessary component for a complete understanding of the world.⁶⁴

24. THE DEFENSE OF DEMOCRACY ARGUMENT

Enemies of wilderness preservation and environmentalism in general are fond of charging wilderness advocates and environmentalists with committing the sin of elitism. They claim that wilderness preservation ought *not* be pursued since only a minority of people ever visit designated wilderness areas. Environmentalists, they allege, are selfish people who want to set aside vast stretches of land that only the physically fit and economically able can experience. Wilderness preservation, then, only benefits the elite few and therefore does not serve the general welfare—the greatest good for the greatest number.

However, even though this populist argument is often quite effective, it is also quite easy to “set it on its ear” and turn the charge of elitism into a

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pro-wilderness preservation argument. Without denying the charge of elitism made by the opponents of wilderness preservation, it could be claimed that precisely because wilderness preservation shows respect for the needs of a minority, wilderness preservation is, therefore, indicative of good democracy. The existence of things like opera houses, softball diamonds, art galleries, public swimming pools and designated wilderness areas—all places used by only a minority—is a display of respect for minority rights or, as Nash says, “the fact that these things can exist is a tribute to nations that cherish and defend minority interests as part of their political ideology.”⁶⁵ Concerning such an argument, Leopold wrote:

There are those who decry wilderness sports as “undemocratic” because the recreational carrying capacity of a wilderness is small, as compared with a golf links or a tourist camp. The basic error in such argument is that it applies the philosophy of mass-production to what is intended to counteract mass-production. . . . Mechanized recreation already has seized nine-tenths of the woods and mountains; a decent respect of minorities should dedicate the other tenth to wilderness.⁶⁶

Robert Marshall was also quite fond of pointing to this as a benefit of designated wilderness areas. “As long as we prize individuality and competence,” Marshall says, “it is imperative to provide the opportunity for complete self-sufficiency.”⁶⁷

In fact, the original charge of elitism may even be more severely wrong-headed. We might argue that designating areas as wilderness does not limit but rather opens up access to more people than would privatization or land development, especially if we consider future generations of humans, since these wilderness areas are public access lands.

Now, there seems to be an irony or paradox involved with this argument as well. If privatization keeps people out and public ownership allows them in, then designating an area as publicly owned wilderness will guarantee that it will be overrun by hordes of backpackers, camera hunters, and the like.

25. THE SOCIAL BONDING ARGUMENT

Expanding on all of those arguments espousing individual benefits, one could argue that many designated wilderness areas serve as valuable mech-

anisms in the critical process of social bonding. Those who collectively recreate in designated wilderness areas often attest to the benefits that come from social interaction in such a setting. Driver, Nash, and Haas illustrate these benefits when they claim that one of the most pervasive reasons that people choose to spend time in designated wilderness areas

relates to family cohesiveness and solidarity. Others include strengthening social bonds with small groups of significant others, sharing skills with others, and gaining social recognition or status from demonstration of skills to others and later sharing tales or photographs of enviable experiences.⁶⁸

Because, and to the extent that, we are social animals and our continued survival depends on effective social interaction, we ought to value social bonding. Exposure to "wilderness" is thought to intensify experience and provide a vector for high-level and successful interpersonal cohesion. Therefore, as an important social mechanism, designated wilderness areas are assumed to be valuable and worthy of preservation.

As an expansion of individual-use values of designated wilderness areas, this argument is subject to the same criticisms leveled at many of the other arguments catalogued here. Surely designated wilderness areas are sufficient and effective in facilitating social bonding, but just as surely they are not necessary. Social bonding can and does take place in highly artificial settings like classrooms, concert halls, offices, saloons, and salons. Moreover, we can just as easily imagine the cohesiveness of a group being completely destroyed by the pressures of wilderness travel. And furthermore, the use of designated wilderness areas by groups of people greatly jeopardizes the "wilderness" integrity of a place.

26. THE ANIMAL WELFARE ARGUMENT

By exploring a non-anthropocentric justification for wilderness preservation we might claim that, like us, wild animals too depend upon their respective home environments for their existence. And since they should be considered as members of the community of beings deserving moral consideration, we owe it to those animals not to destroy their homes. Along similar lines, it was popular in the 1970s to argue that the "wild" things on earth had the right to go about their business unmolested and unharmed by *Homo sapiens*. We humans, therefore, had no right to interfere with their

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freedom and dignity. And, since designated wilderness areas were seen as the places where this freedom was most fully realized, these areas should be preserved as "reservoirs of ecological freedom."

As intuitively attractive as this sounds, it must be recognized that most of the animals that animal welfare ethicists are concerned with do not depend on designated wilderness areas for their habitat needs: chickens and cows live on farms, squirrels and pigeons live in cities, deer live in rural areas around farms, cats and dogs live in human homes. Indeed, most animals, both wild and domestic, do not require "wilderness" at all. However, some few animals do require large tracts of unbroken land as habitat: wolves and bears are good examples. For the proper respect of and caring for these animals, then, it might be argued that those areas which are their homes, which would include only certain designated wilderness areas, ought to be preserved.

Bringing this argument back to the human realm by reinserting the anthropocentric side of the coin for a moment, one might argue, as does Paul Shepard, that wild animals are a human necessity. Shepard claims that "the human mind needs [animals to exist in their wild habitats] in order to develop and work. Human intelligence is bound to the presence of [these wild] animals."⁶⁹ This would apparently include "wilderness" dwelling animals. Therefore, wild animals (including wilderness dwellers) and their habitats (including wilderness areas) deserve moral consideration, albeit indirect, in this sense as well.

The more mature Leopold also believed that designated wilderness areas were valuable for the sake of wildlife such as wolves, mountain sheep, and grizzly bears. Moreover, given the validity of these arguments, such areas would have to be large and unbroken so as to be able to accommodate these "far-ranging species." Arguing for permanent grizzly ranges, for example, Leopold once wrote that,

saving the grizzly requires a series of large areas from which roads and livestock are excluded. . . . Relegating grizzlies to Alaska is about like relegating happiness to heaven; one may never get there. . . . Only those able to see the pageant of evolution can be expected to value its theater, the wilderness, or its outstanding achievement, the grizzly.⁷⁰

In fact, this argument has now become the principal conservation biology argument for wilderness preservation—big reserves for biodiversity.⁷¹

27. THE GAIA HYPOTHESIS ARGUMENT

Expanding on the above argument, we might apply non-anthropocentric moral consideration to yet another sort of living organism: namely, the earth or Gaia. Scientists such as James Lovelock posit and defend what they call the Gaia Hypothesis, which postulates that the earth itself, as a self-correcting system, is alive or is tantamount to a living organism. Like any living thing, certain of its parts are imperative to its proper functioning and viability. With regard to the earth, or Gaia, certain wild ecosystems are arguably vital to its prospering. Wild ecosystems might be likened to the internal organs of a multicelled organism—or what we traditionally think of as an organism. With Gaia, designated wilderness areas could be said to perform certain services invaluable to the smooth functioning of the earth organism, just as a human liver provides a service invaluable to the human organism. Without a liver a human cannot live; without wilderness earth perhaps cannot either. So, if planetary homeostasis is to continue, and Gaia is to live, areas of “wilderness” must be preserved.

If we owe moral consideration to living beings, and if the earth itself is alive, as the Gaia Hypothesis maintains, then the earth deserves moral consideration. Disrupting Gaia’s vital organs, such as putative wilderness, becomes, then, immoral. So, in order to show proper moral respect to the earth organism, these areas ought to be maintained.

Leopold was inspired by the Russian philosopher and mystic P. D. Ouspensky. In his essay “Some Fundamentals of Conservation in the Southwest,” Leopold toys with a Gaia-type defense of earth and wilderness preservation. “Philosophy,” he writes, “. . . suggests one reason why we can not destroy the earth with moral impunity; namely, that the ‘dead’ earth is an organism possessing a certain kind and degree of life, which we intuitively respect as such.”⁷²

The objections to the above two arguments are too complex to cover here. In sum, these arguments rest on the premise(s) that animals and Gaia deserve moral consideration, which corresponds to actions of preservation on behalf of humans. Clearly, one would have to justify this argument prior to making the larger argument stick. Moreover, with regard to the Gaia argument, one would have to prove that designated wilderness areas really are crucial to the life of Gaia.

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28. THE FUTURE GENERATIONS ARGUMENT

Another common defense of wilderness preservation revolves around the supposed moral obligations that existing human beings have with regard to future generations of human beings. One might maintain that, among other debts owed, current humans ought to pass the world on to future generations as we inherited it, with as many designated wilderness areas intact as possible. As the old American Indian saying goes, “We do not inherit the earth from our ancestors; we only borrow it from our children.”

Destroying putative wilderness areas, when taking into account these future generations, would then become a matter of injustice and unfairness. When we destroy these areas we can also be said to be depriving future generations of valuable resources and services: we are taking away their heritage and identity; we are not providing them with a place for enjoyment, education, aesthetic experience, and self-discovery; we are subjecting them to the consequences of our irreversible land-use decisions; all those things we commonly think of “wilderness” as providing for us. If we accept that future generations merit at least some degree of moral consideration, many of the “wilderness benefits” mentioned above would also apply to future generations of humans. In short, “wilderness” destruction is wrong, according to this argument, because future generations of humans would mourn its loss.

The truth is that we really do not know for certain what future generations will want or need. And, as hard as it is for some to believe, perhaps they will not want or need designated wilderness areas. However, one might argue that this lack of knowledge is reason enough to save designated wilderness areas, not ravage them. We don’t *know* what future generations will want or need. Therefore, we should keep their options open. Wilderness preserved is an option for future generations. They can keep and use their wilderness areas or develop them. But if we develop them now, they won’t have the option. Further, our protection of “wilderness” arguably sets a good example for future generations, and displays a good ethic of stewardship, which would encourage them, in turn, to keep land-use options open to future future generations. Interestingly, all future generations might arguably be forced to preserve designated wilderness areas because they would be locked into the same “logic of wilderness preserva-

tion for future generations" argument that compelled us to save wilderness for them. This logical compulsion might then propel wilderness preservation indefinitely.

Nevertheless, this argument appears to be contingent upon the validity of the other arguments that attempt to show that a world with designated wilderness areas is better than a world without them. Hence, we might note that this is not an entirely independent argument.

29. THE UNKNOWN AND INDIRECT BENEFITS ARGUMENT

For some, one of the greatest reasons why we ought to err on the side of caution, and preserve and designate more wilderness areas, is that theoretically speaking most of the benefits emanating from these areas are thought to be indirect (what Driver, Nash, and Haas refer to as "spinoff" value and what economists commonly refer to in part as "option value") or unknown. The potential for goods and services may be unlimited, and the possible harms unknown. Many of the indirect social benefits can only be guessed at. We simply do not have all the information in as of yet. E. O. Wilson maintains that "the wildlands are like a magic well: the more that is drawn from them in knowledge and benefits, the more there will be to draw."⁷³ But if we destroy designated wilderness areas, we would then apparently destroy tremendous amounts of information and potential benefits along with them. Hence, it would seem to be prudent to save designated wilderness areas because of these unknown and indirect benefits, and as many and as large of these areas as possible at that. The downside to this argument is that it makes the preservation of wilderness contingent only on its potential utility.

For certain wilderness proponents the promise of wilderness preservation lies ahead, in the future. Aldo Leopold echoes this sentiment by pronouncing that we "should be aware of the fact that the richest values of wilderness lies not in the days of Daniel Boone, nor even in the present, but rather, in the future."⁷⁴ Hence, because we have a responsibility to follow a wise course of action, and since this would include conserving potential benefits to all of humanity, we apparently then have a responsibility to keep designated wilderness areas in existence.

30. THE INTRINSIC VALUE ARGUMENT

Many, many wilderness boosters claim that simply knowing that there exist designated wilderness areas, regardless of whether or not they ever get to experience such areas, is reason enough for them to want to preserve them. For these people, "wilderness" is valuable just because it exists, just because it is. Designated wilderness areas, in this sense, have value in and of themselves; regardless of, or in addition to, their value as a means to some other end—like clean water, recreation, or medicine. "Wilderness," then, is said to possess intrinsic value.

E. O. Wilson asserts that designated wilderness areas have uses not to be ignored: but he quickly points out that the argument for the preservation of these areas does not end there. As he writes, "I do not mean to suggest that every ecosystem now be viewed as a factory of useful products." Utility is not the only measure of "wilderness" value, he declares, "Wilderness has virtue unto itself and needs no extraneous justification."⁷⁵ Reiterating Wilson's conviction, and issuing a call to action, Edward Abbey once wrote, "The idea of wilderness needs no defense. It only needs more defenders."⁷⁶ Clearly what Wilson, Abbey, and many other wilderness-minded folks are claiming is that, ultimately, "wilderness" defense needs no articulation. Designated wilderness areas just *are* valuable. Such locales, then, join the list of other things, like friends, relatives, children, family heirlooms, and so forth, whose worth is not contingent upon anything other than their mere existence, whose value is intrinsic.

For many environmentalists, to categorize and quantify the benefits of what they take to be wilderness is a fundamentally flawed approach to wilderness preservation. It is, in effect, to play the game of your opponent by trying to bolster your side by including on your team bigger, better, and more players (or, in this case, more human benefit arguments), while the question of whether or not the correct game is being played in the first place goes unanswered and unasked. Many people would challenge the dominant cult of perpetual growth by instead making the more radical claim that areas of "wilderness" are not for humans in the first place, that wild species and ecosystems themselves have a right to exist apart from their uses to humans. "Diffuse but deeply felt," Rolston declares, "such values

are difficult to bring into decisions; nevertheless, it does not follow that they ought to be ignored."⁷⁷

If we accept this reasoning, we might get the feeling that designated wilderness areas are important and valuable just because they are there; regardless of whether or not we ever decide to visit, experience, scientifically monitor, or even contemplate them. But this seems to be the real challenge of wilderness preservation. According to William Godfrey-Smith, "the philosophical task is to try to provide adequate justification, or at least clear the way for a scheme of values according to which concern and sympathy for our environment is immediate and natural, and the desirability of protecting and preserving wilderness self-evident."⁷⁸

The initial assumption in this argument is that if purported wilderness areas do indeed possess intrinsic value, their defense and preservation become self-evident; they just *are* of value and, therefore, worthy of preservation. However, there is obviously a lot more to the debate surrounding intrinsic value and the intrinsic value of "wilderness" than I have presented here. In fact, as Godfrey-Smith says, providing for or grounding the intrinsic value of things like "wilderness" is where the real work needs to be done. This might be seen as perhaps one of the central roles of environmental philosophy in this debate; and we might urge philosophers to begin dealing with and answering questions about how we ground the claim that putative wilderness has intrinsic value, how to sort out both instrumental and intrinsic competing value claims, and how, when, and why the intrinsic value of something like wilderness—if such a thing actually exists—trumps these other value claims.

If we can justify the intrinsic value of designated wilderness areas, and if we can locate their level of moral consideration, then wilderness preservation immediately becomes a moral issue. Designated wilderness areas would gain considerable ethical clout. And this changes the argument about wilderness preservation quite a bit; the burden of proof would apparently be shifted. Those who would destroy designated wilderness areas would then have the burden of proof; they would have to demonstrate that something of great social value would be lost if a wilderness area stood in its way; they would have the difficult task of showing that something possessing intrinsic value should be sacrificed for the sake of something of

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merely instrumental value. "Wilderness is innocent 'til proven guilty," David Brower once quipped, "and they're going to have a tough time proving it guilty."⁷⁹

NOTES

I owe debts of gratitude to Don Fadner, Alan Holland, Kate Rawles, John Vollrath, Dóna Warren, Mark Woods, and especially Baird Callicott for assistance with this essay.

1. Roderick Nash, "The Value of Wilderness," *Environmental Review* 3 (1977): 14–25, p. 25.

2. Nash's wilderness preservation arguments originally appear in *Wilderness and the American Mind*, all editions (New Haven: Yale University Press, 1982), and are later summarized and indexed in "The Value of Wilderness"; see also Nash, "Why Wilderness?," in Vance Morton, ed., *For the Conservation of the Earth* (Golden, Col.: Fulcrum, 1988), pp. 194–201; and Nash with B. L. Driver and Glenn Haas, "Wilderness Benefits: A State-of-Knowledge Review," in Robert Lucas, ed., *Proceedings—National Wilderness Research Conference*, Intermountain Research Station General Technical Report, INT-220 (Ogden, Utah: U.S. Forest Service, 1987), pp. 294–319. Holmes Rolston III presents his wilderness preservation rationales in "Valuing Wildlands," *Environmental Ethics* 7 (1985): 23–48; and in "Values in Nature" and "Values Gone Wild," both in Rolston, *Philosophy Gone Wild: Essays in Environmental Philosophy* (Buffalo, N.Y.: Prometheus, 1986), pp. 74–90 and 118–42, respectively. William Godfrey-Smith's arguments appear in "The Value of Wilderness," *Environmental Ethics* 1 (1979): 309–19. Warwick Fox expands on Godfrey-Smith's work in *Toward a Transpersonal Ecology: Developing New Foundations for Environmentalism* (Boston: Shambhala, 1990), pp. 154–61. George Sessions adds to this lineage in "Ecosystem, Wilderness, and Global Ecosystem Protection," in Max Oelschlaeger, ed., *The Wilderness Condition: Essays on Environment and Civilization* (Washington, D.C.: Island Press, 1992), pp. 90–130. And Michael McCloskey's taxonomy of wilderness values and benefits is in "Evolving Perspectives on Wilderness Values: Putting Wilderness Values in Order," in Patrick C. Reed, ed., *Preparing to Manage Wilderness in the 21st Century: Proceedings of the Conference*, "Southeastern Forest Experiment Station General Technical Report," SE-66 (Athens, Ga.: U.S. Forest Service, 1990), pp. 13–18.

3. Rolston, "Valuing Wildlands," p. 27.

4. Driver, Nash, and Haas, "Wilderness Benefits," p. 304.

5. I say "in theory" and "ideally" because, as Mark Woods's essay in this volume indicates, this is not true in practice. Grazing and other extractive uses *are* permitted in some designated wilderness. It would appear that the resource view is that

there are a suite of commodities that are "wilderness commodities"—timber, fodder, game. The difference between these and other commodities is that they are there for the taking and do not have to be planted and tended.

6. To avoid confusion, two senses of "potential" need to be distinguished. First is the notion of postponing the use of those resources whose uses we are aware of (e.g., turning trees into timber). Second is the sense of the yet unknown uses of something (e.g., undiscovered medicinal uses of known and unknown plants).

7. Aldo Leopold, "A Plea for Wilderness Hunting Grounds," in David E. Brown and Neil B. Carmony, *Aldo Leopold's Wilderness: Selected Early Writings by the Author of A Sand County Almanac* (Harrisburg, Penn.: Stackpole Books, 1990), p. 160; originally published in *Outdoor Life*, November 1925.

8. Leopold, "Wilderness as a Form of Land Use," in Susan Flader and J. Baird Callicott, eds., *The River of the Mother of God and Other Essays by Aldo Leopold* (Madison, Wis.: University of Wisconsin Press, 1991), p. 138; this essay is included in this volume and was originally published in *The Journal of Land and Public Utility Economics*, October 1925.

9. Theodore Roosevelt, "The Pioneer Spirit and American Problems," in *The Works of Theodore Roosevelt* (New York: Charles Scribner's Sons, 1923), 18:23.

10. Roosevelt, "The American Wilderness: Wilderness Hunters and Wilderness Game," in *Works*, 2:19, included in this volume.

11. Roosevelt, "Wilderness Reserves: The Yellowstone Park," in *Works*, 3:267–68.

12. Some medical researchers might discontinue using this argument because of their increased confidence in the ability of computers to generate synthetic models of medicines and the ability to be able to artificially produce such medicines in laboratories. If their optimism were justified, we would no longer need to "mess about in the jungle" for medicine and, as an argument for wilderness preservation, this argument would become contingent only upon the state of our ability to artificially produce medicine.

13. In fact, in her recent book *Coyotes and Town Dogs: Earth First! and the Environmental Movement* (New York: Viking Penguin, 1993), a review of American environmentalism of the past few decades as seen through the eyes, lives, and voices of members of Earth First!, Susan Zakin tells us that ecologist Jerry Franklin discovered upon study "that the Pacific Northwest forest is the most densely green place on earth. One acre of old-growth Douglas fir forest contains more than twice the living matter of an acre of tropical rainforest. Some stands of trees harbor as many as 1,500 species of plants and animals" (p. 240). This finding is substantiated in a recent book on biodiversity by conservation biologists Reed Noss and Allen Cooperrider, *Saving Nature's Legacy: Protecting and Restoring Biodiversity* (Washington, D.C.: Island Press, 1994), p. 101.

14. N. R. Farnsworth, "Screening Plants for New Medicines," in E. O. Wilson, ed., *Biodiversity* (Washington, D.C.: National Academy Press, 1988), pp. 83–97.

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15. Donella Meadows, "Biodiversity: The Key to Saving Life on Earth," *Land Stewardship Letter* (Summer 1990).

16. Rolston, "Valuing Wildlands," pp. 26 and 27, respectively. Note that it is quite common for wilderness advocates to equate "wilderness" with "nature" or "environment" and to use these terms interchangeably. Rolston is a good example of someone who quite liberally uses these terms in such a manner. However, these are not the same things and it seems improper to conflate them. But note also that the life-support argument turns not on the equivocation of these terms but rather on the relationship that exists between nature and wilderness.

17. Sessions, "Eocentrism, Wilderness, and Global Ecosystem Protection," p. 99. Paul and Anne Ehrlich, *Extinction: The Causes and Consequences of the Disappearance of Species* (New York: Random House, 1981), pp. xi–xiv, 77–100; and Paul Ehrlich, "The Loss of Biodiversity: Causes and Consequences," in E. O. Wilson, *Biodiversity*, pp. 21–27, both cited in Sessions.

18. Robert Marshall, "The Problem of the Wilderness," *The Scientific Monthly* 30 (February 1930): 142; included in this volume.

19. Leopold, *A Sand County Almanac: With Essays on Conservation from Round River* (New York: Ballantine, 1966; originally published in 1949), pp. 269–72, his emphasis. See also Leopold, "Wilderness as a Form of Land Use," in this volume.

20. John Muir, *Our National Parks* (Boston: Houghton Mifflin, 1901; San Francisco: Sierra Club Books, 1991), chap. 1, portions of which are included in this volume.

21. *Ibid.*, p. 1.

22. See the studies cited in Driver, Nash, and Haas, "Wilderness Benefits," p. 301.

23. Rolston, "Valuing Wildlands," p. 30.

24. Wallace Stegner, "The Wilderness Idea," in David Brower, ed., *Wilderness: America's Living Heritage* (San Francisco: Sierra Club Books, 1961), p. 102.

25. Paul Shepard, *Nature and Madness* (San Francisco: Sierra Club Books, 1982).

26. Fox, *Toward a Transpersonal Ecology*, p. 160.

27. See, for example, Robert Marshall's "The Problem of the Wilderness" in this volume.

28. Nash, "Why Wilderness?," p. 198.

29. William Wordsworth, "Lines Composed a Few Miles Above Tintern Abbey" (1798).

30. Muir, *Our National Parks*, p. 4. This point has also been made by Allen Carlson in "Nature and Positive Aesthetics," *Environmental Ethics* 6 (1984): 5–34.

31. Aldo Leopold, "Goose Music," in Luna B. Leopold, ed., *Round River: From the Journals of Aldo Leopold* (Minocqua, Wis.: NorthWord Press, 1991), p. 245.

32. Muir, quoted in Nash, "The Value of Wilderness," p. 23.

33. Muir, *The Yosemite* (San Francisco: Sierra Club Books, 1988), pp. 196–97.

34. These three quotations, respectively, are from Leopold, *A Sand County Almanac*, p. 276; Leopold, "The Arboretum and the University," *Parks and Recreation* 78 (1934): 60 (interestingly, this quotation is used by Nash in *Wilderness and the American Mind* and "The Value of Wilderness," as well as by others, to refer to wilderness; however, what Leopold is actually referring to is the Arboretum at the University of Wisconsin, which is nothing remotely like a wilderness area. It seems safe to assume, as Nash and I do, however, that Leopold would say the same of putative wilderness); and *A Sand County Almanac*, pp. 274–75.
35. Rolston, "Valuing Wildlands," p. 27.
36. Fox, *Toward a Transpersonal Ecology*, p. 158 (his emphasis).
37. Leopold, *A Sand County Almanac*, pp. 274 and 276, respectively (my emphasis).
38. David Brower, quoted in Nash, "Why Wilderness?," p. 198.
39. Leopold, *A Sand County Almanac*, p. 190.
40. Rolston, "Valuing Wildlands," p. 28.
41. Edward Abbey, *Desert Solitaire: A Season in the Wilderness* (New York: Avon Books, 1968), p. 190.
42. Walt Whitman, *Leaves of Grass* (Ithaca, N.Y.: Cornell University Press, 1961; originally published in 1860), p. 319.
43. Nash, "Why Wilderness?," p. 199.
44. Henry David Thoreau, "Walking," in *Excursions* (Boston: Ticknor and Fields, 1863), pp. 185 and 191, respectively.
45. Leopold, *A Sand County Almanac*, p. 264.
46. Nash, "Why Wilderness?," p. 199.
47. Rolston, "Valuing Wildlands," p. 29.
48. A good example of this type of wilderness preservation rationale is found in Aldo Leopold's essay "Conserving the Covered Wagon," in Flader and Callicott, eds., *The River of the Mother of God*, pp. 128–32.
49. Stegner, "The Wilderness Idea," pp. 97 and 102, respectively.
50. Nash quoted in McCloskey, "Evolving Perspectives on Wilderness Values," p. 15.
51. Nash, "The Value of Wilderness," p. 22.
52. Mark Sagoff, "On Preserving the Natural Environment," *The Yale Law Review* 84 (1974): 266–67.
53. To take this line of thought even further, if that which is unspoiled is of value, and if completely pristine wilderness no longer really does exist, then our current wilderness areas (no matter how tainted by human interference), stand as a memorial to and a symbol of hope for the lost unspoiled wilderness of the earth and should be preserved as such.
54. Michael Zimmerman makes this point in *Contesting Earth's Future: Radical Ecology and Postmodernism* (Berkeley: University of California Press, 1994), p. 120.

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55. The eradication of a virus's familiar host species exacerbates this problem by forcing the virus to jump hosts in order to survive.
56. Richard Preston, "A Reporter at Large: Crisis in the Hot Zone," *The New Yorker*, October 26, 1994: 62.
57. *Ibid.*, p. 62.
58. *Ibid.*, p. 80. See also Preston's book-length treatment of this issue, *The Hot Zone* (New York: Random House, 1994). This is also the topic of the 1995 Hollywood movie *Outbreak*.
59. Edward Abbey, *Desert Solitaire*, pp. 148–51.
60. Michael Zimmerman, "The Threat of Ecofascism," *Social Theory and Practice* 21 (1995): 207–238.
61. Max Oelschlaeger, *The Idea of Wilderness* (New York and London: Yale Univ. Press, 1991), p. 231.
62. Leopold, *A Sand County Almanac*, p. 264.
63. Rolston, *Conserving Natural Value* (New York: Columbia University Press, 1994), p. 15.
64. Note that both Nash and Oelschlaeger see wilderness as a contrasting value. For the ideas and insights in this section I owe much credit to the thought and work of Arthur Herman in *The Problem of Evil and Indian Thought*, 2nd ed. (New Delhi: Motilal Bansaridas, 1993), in which he discusses the logical and metaphysical necessity of evil as a possible solution to the philosophical and theological problem of evil.
65. Nash, "The Value of Wilderness," p. 24.
66. Leopold, *A Sand County Almanac*, pp. 271–72.
67. Marshall, "The Problem of the Wilderness," p. 143.
68. Driver, Nash, and Haas, "Wilderness Benefits," p. 302.
69. Paul Shepard, *Thinking Animals: Animals and the Development of Human Intelligence* (New York: Viking Press, 1978), pp. 246–52. See also Shepard's new book, *The Others: How Animals Made Us Human* (Washington, D.C.: Island Press, 1996) on this topic.
70. Leopold, *A Sand County Almanac*, pp. 276–78.
71. For an explanation of modern conservation biology and the plight of the grizzly bear, see R. Edward Grumbine, *Ghost Bears: Exploring the Biodiversity Crisis* (Washington, D.C.: Island Press, 1992). See also Noss and Cooperrider, *Saving Nature's Legacy*.
72. Leopold, "Some Fundamentals of Conservation in the Southwest," *Environmental Ethics* 1 (1979): 140; originally written in the early 1920s.
73. E. O. Wilson, *The Diversity of Life* (Cambridge: Harvard University Press, 1992), p. 282.
74. Leopold, "Wilderness Values," *1941 Yearbook of the Parks and Recreational Services* (Washington, D.C.: National Park Service, 1941), p. 28.
75. Wilson, *The Diversity of Life*, p. 303.

76. Edward Abbey, *The Journey Home* (New York: Dutton, 1977), p. 223.
77. Rolston, "Valuing Wildlands," p. 30.
78. Godfrey-Smith, "The Value of Wilderness," p. 319.
79. David Brower, quoted in *Wild by Law*, a film by Lawrence Hott and Dianne Garey, Florentine Films, 1990.