

BURN AND SOW: THE ETHICAL IMPLICATIONS
OF ECOLOGICAL RESTORATION

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Thesis Prepared for the Degree of
MASTER OF ARTS

UNIVERSITY OF NORTH TEXAS

August 2005

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Mauritz, Elizabeth, Burn and Sow: The Ethical Implications of Ecological Restoration. Master of Arts (Philosophy), August 2005, 100 pp., bibliography, 25 titles.

Ecological restoration is quickly becoming a major approach to how humans interact with the natural world. Some view restoration as another land management technique on par with conservation and preservation. Others view it as a way to make reparations for our misdeeds and to reincorporate humans into the natural world. Ideas regarding restoration from key academics and restorationists are evaluated here. Their views have set the stage for the contemporary paradigm. Values that may be attributed to restoration and received from it are evaluated. I discuss my own reservations regarding potential problems with the product and practice of restoration. What is at stake regarding the involvement of people in restoration is examined, focusing on the different impacts volunteers and paid workers have on the value of the practice and outcome of the product.

ACKNOWLEDGEMENTS

I need to first and foremost acknowledge Eugene Hargrove, my thesis advisor, who has worked diligently to assist me in my considerations on the topic of ecological restoration, ensure that I have adequate coverage of the key ideas, and meticulously proofread and review my work, offering numerous helpful editorial comments. I could not have achieved the quality of work I did in such a limited time if it were not for his assistance.

To Irene Klaver and Ken Dickson, my committee members, who were ready to assist me right from the start.

Thank you to Dwight Barry who worked with me on the hands on component of my restoration experience. As a result of his involvement I learned how to handle a chainsaw, recognize a mesquite, and identify the appropriate kinds of grass for the plot at LLELA. I was able to get immersion into what I theorize about.

I also want to acknowledge David Taylor who inspired me to begin my research on the philosophical aspects of ecological restoration.

My parents, Christopher and Elaine Mauritz also inspired me in this endeavor by getting out in the gardens with me as a child and encouraging my work in FFA, my undergraduate research, and choice to pursue graduate school in environmental philosophy, a field they have no experience with.

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CHAPTER 1

ARGUMENTS

The Philosophical Debate Surrounding Ecological Restoration

Early on in the young history of ecological restoration, the field began to receive considerable attention and criticism from philosophers. One of the most notable is Robert Elliot. He is known for his article “Faking Nature,”¹ in 1982, and the subsequent book in 1997 with the same title, which expands his ideas. Another philosopher, Eric Katz, follows up on Elliot’s criticism and adds to it in his bold article, “The Big Lie: Human Restoration of Nature.”² A third philosopher, known for his work in environmental pragmatism, Andrew Light, responds publicly to Katz’s critique of restoration ecology in his article “Restoration or Domination? A Reply to Katz.”³ Another influential environmental philosopher, Holmes Rolston, III, has something to say about the philosophical debate surrounding this current and complex issue in his book *Conserving Natural Value*.⁴ Perhaps the most well recognized figure in ecological restoration in general is William Jordan. As an obvious supporter of ecological restoration, Jordan responds indirectly in his recent book *The Sunflower Forest: Ecological Restoration and the New Communion with Nature*.⁵ In this chapter I outline the current philosophical debate surrounding restoration ecology. I also offer my own

¹ Robert Elliot, “Faking Nature,” *Inquiry* 25 (1982): 81-93.

² Eric Katz, “The Big Lie: Human restoration of Nature,” in *Nature as Subject: Human Obligation and Natural Community* (Lanham: Rowman and Littlefield Publishers, 1997).

³ Andrew Light, “Restoration or Domination? A Reply to Katz,” in *Environmental Restoration: Ethics, Theory and Practice* (Amherst: Humanity Books, 2000).

⁴ Holmes Rolston, III, *Conserving Natural Value* (New York: Columbia University Press, 1994).

⁵ William R. Jordan III, *The Sunflower Forest: Ecological Restoration and the New Communion With Nature* (Berkeley: University of California Press, 2003).

responses to the debate and issues.

Elliot Throws a Monkey Wrench into Restoration Theory

To begin, we should look to Elliot, who wrote the groundbreaking article “Faking Nature” in 1982. It was first published in the philosophical journal *Inquiry*. Elliot begins with a theoretical story about a mining company that wants to do mining under beach sands. The company itself admits that the beach will be destroyed in the process. The mining company even acknowledges that there is more value to the beach than simple anthropocentric instrumental value. Due to this fact, the mining company expresses a desire to restore the beach and dunes to their original condition after the mining has been completed. They argue that because of this restoration, the value of the beach is not lost since it will be restored by their later actions. In plain terms, what Elliot is describing is an example of using mitigation as a justification for devastating an ecosystem. Elliot, however, refers to this example as “the restoration thesis.”

He attacks what he considers to be the restoration thesis on several fronts. One argument of importance to environmentalists is that these proposals are a way of undermining conservation and preservation principles. He goes on to say that, even given the benefit of the doubt, that is, assuming these restoration activities are completely successful (the environment is brought back to its original condition), there are serious problems with the restoration thesis as he understands it, and arguments like those presented by the mining company. Elliot wants to show us that restoration is no match for the real thing no matter how good the restoration proves to be.

From the standpoint of aesthetics, Elliot uses comparative examples to support

his view that the product of restoration is of lower value than the original. He discusses artwork, specifically a Vermeer painting, which is an original and of high value. If this Vermeer was stolen in the middle of the night and replaced without his knowing by an exact replica, he may not at first recognize it. Until he recognizes the “faked” copy, he will assign all of the same values to it. Once he realizes that it is not the original, it becomes less valuable.

This hypothetical situation highlights not only our view of the high value of originals, but also the importance of our perception, our recognition of the original as opposed to the replica. To the untrained eye there would be no distinction, and therefore no difference in value between the two. When we go to the art experts to evaluate the paintings, they will assign a higher value to the original. Knowing this, we too will value the original more than the replica. Elliot applies this analogy directly to ecosystems. Even if we are not able to recognize a restored ecosystem as “restored” and not the original, it has less value. Elliot claims that the value is lost because the naturalness has been lost. What he really means by naturalness here is the causal continuity independent from human intervention. Its history matters as well as the fact that it is “unmodified by human activity.” This is the idea that we should let nature take its course. It also explicitly separates humans, human interaction, and artifact from the realm of nature and natural.

Allowing that admiring nature is not exactly the same as admiring works of art, Elliot notes that in artwork we are admiring the work of art as well as the artist and his or her intentions. In nature admiration it is less likely, though still possible, that people would admire the artist. We may be uncertain who the artist is, if *anyone* at all. It is even

more unlikely to admire the intentions, even if the admirer regarded God or Mother Nature as the creator, for the simple fact that nature is dynamic, unlike a painting. However, he maintains, “None of this is to deny that certain concepts which are frequently deployed in aesthetic evaluation cannot usefully and legitimately be deployed in evaluations of the environment.”⁶ Aesthetic evaluations are applied directly to explaining why he considers a “faked” forest as less valuable and a “natural” forest as more valuable. The restored forest is not as valuable as the unrestored one for the same reasons “faked” art is not as valuable as “original” art. The history and origin are of utmost importance to Elliot.

Using an anecdote that more closely embodies his argument, Elliot describes a stand of mountain ash that he had long admired. He later discovered that this stand was planted to replace the original that had been burnt out. This piece of knowledge changed his attitude toward that stand of “forest.” Moreover, it made him think it was of lower value than a naturally evolved forest. He explicitly states, “Knowing that the forest is not a naturally evolved forest causes me to feel differently about it: It causes me to perceive the forest differently and to assign it less value than naturally evolved forests.”⁷

Elliot takes a decisively hands-off preservationist approach to nature. He writes, “There is a significant difference between preventing damage and repairing damage once it is done. That is the difference that leaves room for an argument in favor of a preservation policy over and above a restoration policy.”⁸ While the reader could guess by the previous arguments and general tone of the article what Elliot may say, he does

⁶ Elliot, “Faking Nature,” p. 88.

⁷ Ibid., p. 89.

⁸ Ibid., p. 86.

not provide us with an explicit argument.

Elliot's arguments in "Faking Nature" rest on several incorrect, or at least questionable, assumptions. First of all, he presents a dualism between nature and artifact. He even considers rural landscapes as largely artifactual. Anything, it would seem that has received the footprint of humans is no longer natural. This dualism not only separates humans from nature, but also makes us the necessary corrupters of nature. However, this dualism is not applied to all people, as he implies by his reference to John Muir's appreciation of Hetch Hetchy Valley. He claims that Muir thought of it as a place where he could have "direct contact with primeval nature."⁹ Admittedly, Elliot claims "Muir's valuation of the valley was conditional upon certain facts about the valley's genesis."¹⁰ Elliot never mentions that Muir was not the first person to interact with or appreciate the valley. He easily ignores native peoples who had inhabited the region for centuries. From both Muir and Elliot's viewpoint, native people must be closer to nature or like animals, a part of nature, without the uniquely human qualities of dirtying nature. Native peoples are thought to have not made any impact on the land, or made so little that it is not worth mentioning. Still, it is disturbingly Euro-centric to not even acknowledge their long-standing presence.

While Elliot gives some hint that there are degrees of natural to unnatural, he fails to provide us with any criteria to use. Most of his article elevates the idea of natural to honorable or sacred, and unnatural as filthy and disappointing. He does not provide any reason for such a disparate valuation. It has not always been the case that people valued nature as higher than artifact. Humans have long taken pride in overcoming

⁹ Ibid., p. 85.

¹⁰ Ibid.

nature, for example, in making it do their will, as when the forest is felled and prairie plowed under so that it can be productive in providing lumber for artifacts and crops for human consumption. I understand that just because something was valued one way in the past does not mean it should continue to be valued in that way. But, with such divergent views regarding the value of nature manifested in the attitudes and actions of contemporary people, I expect everyone to support their value claims. In addition, this distinction of natural is good and unnatural less so, is reputed by Elliot as a universal concept.

Nevertheless, there may be instances where a restored landscape would be better all around than the landscape that would have existed without restoration. Take Elliot's example of replanting the mountain ash after the fire devastated the existent stand for instance. Consider the possibility that this land would either remain barren or fill with invasive exotic vegetation if people do not step in to assist. Stepping in to a devastated environment to help initiate its recovery is restoration. As a result, if restoration is unnatural, then something unnatural would be better than its natural alternative. This example indicates that Elliot's logic is unsound and his argument fallacious.

Elliot takes on the issue of ecological restoration from an idealistic and theoretical perspective, whereas practitioners are overwhelmingly pragmatic. His claims assume that all restoration projects begin with an untouched ecosystem, and then use restoration as a mitigation tool. While this scenario does happen, it is more commonly the case that damage has already occurred, and restoration takes place as a way of healing the ecosystem. Often no one owns up to the damage; the restorationists simply

want the ecosystem to be healthy, and in many ways more natural than it is in its current state of disrepair.

Even if Elliot acknowledged these points, I think he would continue to see restoration as problematic in most cases simply because it consists of humans making the ecosystem into what they see fit. Humans are assumed to be outside of the natural processes. Elliot would see a degraded landscape, and say don't touch it, just leave it alone and it will heal itself. Leaving the land alone, however, is not always going to be enough to return it to its full functionality. The land's capacity for self-healing depends on several factors. For example, the type of ecosystem, the type and scale of damage, and degree and kind of ongoing human influences, among other factors, should be considered.

Relating to his previous assumption, Elliot portrays restoration as an act focused on human needs and wants. While these are certainly relevant, aesthetic pleasures and humans' natural resource needs are considered; some restoration projects, specifically forest and prairie restoration, often become controversial because the restored landscape does not look as aesthetically pleasing to neighbors as the unrestored landscape did. They may think that the forest is too sparse, or that the prairie looks weedy. The restoration focuses on the original processes with the introduction of native plants and animals in mind first; human needs come in a close second. For example, the restoration of the upper half of the Kissimmee River in Florida limited land use along the river and allowed for seasonal flooding once again. Restoration is a way of apologizing for human selfishness. It is a way that people attempt to reconcile biological wrongdoing.

Finally, and most relevant, Elliot believes restored landscapes are being portrayed as exactly the same as an originally evolved landscape. This is where the analogy of faked art comes in. He assumes that restorationists are intentionally lying to us by either not mentioning the restoration, or saying the restoration is the same in every way as the original. In my experience with restoration, one of the first things that is acknowledged is that the restoration has indeed changed the land. Restorationists make no claims of miraculously replacing every plant, rock, or soil bacteria that was ever there. In fact, it is recognized that the restoration, no matter how successful, will never match with the naturally evolved ecosystem. The reason people work to restore ecosystems then, is to make mends on the problems already manifested by farming, development, and previous poor management. In many cases restorationists are pleased to show others their successful restorations and go on to discuss what was involved in the transformation. Restorationists are not in my opinion trying to “fake” nature; rather, they are trying to repair the damage. If Elliot accepted this point, much of his argument would fall apart. For example, he may continue to admire the stand of mountain ash even after he is informed that humans planted it. He may even come to admire it more, seeing it as a labor of love.

Katz Concur

Continuing on, we look to Eric Katz who builds upon Elliot’s critique in “The Big Lie: Human Restoration of Nature.” It should be fairly obvious from the beginning what Katz’s perspective on restoration ecology is. But, let’s examine the specifics of his argument more closely.

To begin with, Katz recognizes something that most restorationists would acknowledge, but Elliot does not emphasize. Restoration even in its best outcome is no replacement for the real thing. He understandably worries that restoration will become one of many misunderstood tools in the human toolbox of technological fix-it gadgets. He too assumes that restoration tries to be passed off as naturally evolved. His anger about this alleged fakery is excruciatingly evident in such statements as “I am outraged by the idea that a technologically created “nature” will be passed off as reality. The human presumption that we are capable of this technological fix demonstrates (once again) the arrogance with which humanity surveys the natural world.”¹¹

Katz’s last sentence in this quote embodies the heart of his argument. He is troubled by the fact that humans continue to dominate nature, especially under the guise of helping or healing it. He goes on to give examples of other scientific and technological fixes that held a lot of promise initially, but that have come to be seen as more destructive and harmful than doing nothing at all. Such examples include: chemical fertilizers, pesticides, hydroelectric dams, and so on. On account of these previous failures Katz claims that not only do we not have the technology to accomplish what we are attempting, but also we do not even have the obligation to do it.

Katz expresses his agreement with Elliot’s distinction between natural and artifact by writing, “The processes of the natural world that are free of human interference are the most natural.”¹² Katz acknowledges some of the more complex issues surrounding such a claim. First, humans have affected nearly the entire world in one way or another. Second, humans are in many ways natural and are evolved beings.

¹¹ Katz, “The Big Lie,” p. 97.

¹² Ibid., p. 103.

He responds to these points by saying, first of all, that “natural” and “artificial” exist on a continuum. They are not absolutes. To the second point, he responds, “All human activity is not unnatural, only that activity which goes beyond our biological and evolutionary capacities.”¹³ His example of a natural human activity is childbirth free from technological medical interventions.

In accordance with these perspectives of natural, he maintains that restoration “fails to meet the criteria of naturalness.”¹⁴ The major concern is his belief that nature is not allowed to be free. We as humans, are once again dominating nature, thus denying its autonomy and freedom. His usage of autonomy in this way implies that he agrees with Elliot that humans are (for the most part) separate from nature. Katz takes a liberation stance on the issue of nature. Through our restoration, humans are controlling nature. Nature needs to be liberated from human manipulation. He believes refraining from restoration will benefit both humans and nature.

Where Katz’s assumptions overlap with Elliot’s I apply the same responses. Where they differ I agree largely with Andrew Light. After reviewing Light’s reply, I distinguish where I differ with him.

Light Responds in Opposition

While Katz built upon Elliot’s critique of restoration ecology, Andrew Light takes a more direct approach of analyzing Katz. Light’s response in “Restoration or Domination? A Reply to Katz” takes the debate in a different direction. Known for his work in environmental pragmatism, it should be no surprise that Light looks at

¹³ Ibid., p. 104.

¹⁴ Ibid., p. 105.

restoration not as what it could theoretically do or claim, but what it does do and claim.

First, Light points out that if environmental philosophers are concerned with non-anthropocentric intrinsic value, and recognize that the products of restoration can never have this, then they commit a category mistake. Philosophers such as Elliot and Katz are speaking of artifacts as if they should be nature, and they become upset that they are not. He also criticizes environmental philosophers for attempting to appeal to present institutions and the public for support of the environment while ignoring humans. He writes, “If environmental philosophers are interested in trying to appeal to the existing intuitions of the public, they must be open to making ethical claims about the value of nature in anthropocentric terms, or at least must give up their tendency to cut humans out of the picture entirely.”¹⁵ By accepting anthropocentric value terms he indicates that humans may not be as separate from nature as some environmentalists and environmental philosophers, such as Elliot and Katz, would lead us to believe.

Next, he makes the distinction that I pointed out earlier. He acknowledges different types of restoration. These are divided into two broad categories based on moral implications. The types of restoration attacked by Elliot and Katz are considered “malicious restorations.” These restorations serve as justification for destructive projects such as mining and clear-cutting. The second type of restoration is called “benevolent restoration.” These are restorations that are carried out to remedy some harm already done to nature. They are not a justification for further harm done to nature.

The body of “Restoration or Domination” is concerned with analyzing and replying to Katz’s article. Light systematically outlines Katz’s logic, as well as his main

¹⁵ Light, “Restoration or Domination,” p. 96.

arguments. Light claims that Katz's logic is as follows: "We do not have an obligation to do what we can't in principle do."¹⁶ He also separates five arguments that are presented in Katz's article. They include: Katz reply one (KR1) the duplicitous argument; Katz's reply two (KR2) the arrogance argument; Katz's reply three (KR3) the artifact argument; Katz's reply four (KR4) the domination argument; and Katz's reply five (KR5) the replacement argument.

Katz reply one is basically the anger Katz expresses at restoration and technology in general being passed off as natural. Katz reply two is the embodiment of Katz's frustration with humans' arrogant tendencies of applying a technological fix to every perceived problem with the natural world. Katz reply three suggests that human-made products are completely artificial, therefore of less value than natural ones. Light easily dismisses these first three arguments on the basis that he does not agree with one underlying premise which supports all three. Light notes that Katz has admitted to being a strict nature-culture dualist. The premise that nature and humans can be meaningfully separated supports most of Katz's argument. Light explains: "If one rejects this overall ontological and metaphysical view about the separation of humans from nature, then one may reject most of Katz's objections to restoration."¹⁷

Light also perceives Katz reply five as being weak because it challenges preservation principles resulting from Katz's assumption that restorationists believe restoration can replace anything and any value which is (only temporarily) degraded. By doing so it suggests that there is no moral consequence to restoration. Light correctly responds that this logic only applies to some malicious restorations, and not to

¹⁶ Ibid., p. 99.

¹⁷ Ibid., p. 100.

benevolent restorations. Environmentalists would neither suggest that restoration can replace any entity or value nor use such a rationale as support for restoration ecology.

Of the five arguments Katz defends, four have been dismantled. There is only one left to address that could present a dilemma for restorationists, KR4, the domination argument, which claims that in all restorations manipulation and domination of natural areas are inherent. Nature is not allowed to be free because restorationists are determined to control it and impose their own ideas and limitations on it.

Light takes on this argument with real force because he realizes that it is the most threatening one of all. Instead of dismissing it on the a simple disagreement of the underlying premise, Light defeats the domination argument in a four punch knockdown. First, Light points out that there are cases where nature is unable to pursue its own interests because of something we (humans) have already done. The ecosystem has already been impacted by the hand of humans. This impact can be remedied by restoration, which has the potential to alleviate destructive actions and exchange despotic attitudes for attitudes of respect. Light puts forward the belief that “Restoration need not determine exactly what grows in a certain place, but may in fact simply be the act of allowing nature to again pursue its own interests rather than shackling it to perpetual human-induced trauma.”¹⁸

Second, some restoration projects require us to put human needs after environmental needs, again easing human domination. The example Light provides consists of removing roads in order to establish a corridor between two wildlife preserves. In this case, restoration actually decreases the amount of human

¹⁸ Ibid., p. 101.

domination. Humans are asked to sacrifice their easy mode of transportation for the greater good of expanding habitat to other species.

Third, restoration has to occur within a context of what is possible. Ideally, restorationists research what was there before the ecosystem was degraded as well as the current state of the land to determine how to restore it. They cannot simply make a degraded desert into a wetland, or an alpine forest into grassland. Supporting what I mentioned earlier, Light provides an example for the point that restoration is not human domination. In many cases the restored landscape is upsetting to people because it destroys the humanly preferred landscape. The example he offers is the Chicago Wilderness project where the restoration of oak savannas was taking place. Numerous people were troubled over this because it was destroying what they considered an aesthetically pleasing forest. He adds

But philosophically, because a restored landscape can never necessarily be tied only to our own desires (since our desires are not historically and scientifically determined in the same ways the parameters of restoration) then those desires cannot actually be the direct cause of any restriction on the self realization of nature.¹⁹

Light's final jab at Katz's domination argument involves the analogy of a criminal compensating his victim for a crime previously committed. Light says we that would not consider that the victim has lost his self-realization or even that it has been restricted by the acts of reparation by the criminal. Similarly we should not view our acts of restoration as limiting nature's freedom. We are actually counteracting our earlier wrongdoings.

In addition to addressing Katz's arguments, Light proceeds to point out that there

¹⁹ Ibid., p. 103.

is positive value in restoration. All this time restoration has been criticized for faking nature and dominating it. These are all negative values. Even if these are dismissed, it is not necessary for there to be positive values. Light pushes things a step further and claims that we need to build a bridge to create a relationship with nature. He proposes that restoration can be this bridge, which connects humans with nature. As Light explains, “When we engage in acts of benevolent restoration we are bound by nature in the same sense that we are obligated to respect what it once was attempting to realize before we interfered with it.”²⁰ Recognizing that these acts are a bridge, the benefit goes both directions. It is advantageous to humans as well as nature. He supports this claim by writing that “restoration restores the human connection to nature by restoring that part of culture that has historically contained a connection to nature.”²¹

Following his connection of humans to nature via the restoration bridge and putting Katz’s criticisms of restoration to rest, Light affirmatively concludes that “Restoration is an obligation exercised in the interest of forming a positive community with nature, and thus is well within the boundaries of a constructive, pragmatic environmental philosophy.”²²

My response to Light’s reply is overall positive. He addresses many of the points that I found faulty and/or neglected in the previous philosophy. The major concern I have is that he does not say more about malevolent restoration. While I think many of Katz’s claims are over generalizing, they are valid from the perspective of mitigation justified restoration or what Light defines as “malevolent restoration.” There is a

²⁰ Ibid., p. 107.

²¹ Ibid.

²² Ibid., p. 108.

tendency to take technology and use it in a way that it was never intended. It is correct that in some cases restoration is provided as a justification for development of natural resources.²³ People may even believe we can restore an ecosystem or landscape to its original condition. This issue of malevolent restoration is still relevant if it is not the only type of restoration or even the primary type. It is the responsibility of the philosopher to address normative ethical issues, ideally before they become widely accepted without question. I address this issue in more detail in chapter three.

Rolston's Nuanced Approach

Moving on, Holmes Rolston, III, wrote about restoration in his book *Conserving Natural Value* published in 1994. This discussion occurred before Light's response, and shortly after Katz's article was published. Rolston is a well-recognized philosopher in the field of environmental ethics. He was one of the first to write predominantly on issues of the environment and ethics. His body of work is broader than the previously mentioned philosophers. I examine here what Rolston has to say regarding the controversial issue of restoration. His discussion here is brief but rich with insight.

Rolston recognizes that there is value in restoration when used to improve already degraded ecosystems. He also cites a real situation where a forest was replanted with trees after logging. As is often the case, the dominant species were replaced but other vegetation was not. The forest ground cover was not nearly as diverse as a naturally evolved forest of the same type. The trees were of a uniform age

²³ Edward Schippa, "Towards a Pragmatic Approach to Definitions: "Wetlands" and the Politics of Meaning," in *Environmental Pragmatism*, ed. Andrew Light and Eric Katz (London: Routledge, 1996), pp. 209-230.

and arrangement. Although he is glad that something was replanted rather than nothing at all, Rolston recognizes that something has been lost. He explains that “the first point to make is that restorations, although valuable, are not as valuable as pristine nature, because they are simply not as rich.”²⁴

Rolston continues by addressing issues that have been brought forth by Elliot and Katz. Is restoration a forgery? Are we being lied to about what restoration really is? To sort through these questions, Rolston recognizes that the kinds of restoration, regardless of morality (malevolent or benevolent) exist upon a spectrum. This spectrum indicates the degree to which the restoration is occurring. An ecosystem that has been completely obliterated and must be rebuilt from square one exists on one end of the spectrum. Rolston says it is not really a restoration, because there is nothing left to restore. He calls it replication. On the opposite end of the spectrum is an ecosystem that has only sustained mild changes, such as a select-cut forest. It is what Rolston calls restoration. He clarifies his definitions by writing that “A restoration is the original, once damaged and now restored. A replica is a new creation, without causal continuity to the old one.”²⁵

He first compares these projects with artwork. A restored piece of art is not one that is taken away and replaced with a forgery, as Elliot’s analogy would lead us to believe. Restored artwork has been cleaned, sewn, or otherwise repaired with close attention to detail, and reverence for the piece in and of itself. Additionally, this comparison to art falls short according to Rolston because artwork cannot heal itself when restored. It is solely dependent on humans. Nature being a living thing is able to

²⁴ Rolston, *Conserving Natural Value*, p. 89.

²⁵ *Ibid.*, p. 90.

heal itself for the most part. There are instances where nature is too degraded, too ill to recover on its own. In these cases it needs humans to help facilitate the process. In this way, restoration is more like medicine than art restoration. His view is that “restorations do not fake so much as facilitate nature.”²⁶ They do so because restoration starts the process of undoing damage that humans brought forth, and lets nature do the rest.

From this perspective, what begins as artifact will eventually be less so until it is no longer at the mercy of human intervention. Succession will begin, and without human disturbance, the area will become wild again. However, this succession depends on humans stepping back from the restored ecosystem to allow nature to take its course. In this way restoration is not only place bound but also time bound. Rolston believes it would be foolish to come to an area a century after a facilitated restoration, and think of the landscape as fake.

Rolston does pick on restorationists for trying to box an ecosystem into a specific time in history. He claims we are unable to replace the past. We should not try to replace the past. Instead, we can put back the products of nature and natural processes. Rolston believes there are many good reasons for restoration. But it is important to know why we are restoring and what we are restoring. He also has a vision for restoration, which is expressed in the following quote:

Restoration cannot be a backward-looking activity, though, to be sure, one does have to look to uninterrupted systems to discover what was once there. In fact, restoration must be a forward-looking event to rehabilitate for the future.²⁷

²⁶ Ibid.

²⁷ Rolston, *Conserving Natural Value*, p. 92.

Restoration's Champion: Jordan

Finally we have come to William Jordan III. He is the last major figure whose ideas I explore here with regard to ecological restoration. Jordan, unlike our previous figures is not a philosopher by profession, but deeply embedded in ecological restoration. He was on the faculty at the University of Wisconsin Arboretum (where there are several restored prairies and oak savanna ecosystems). He is also well recognized because he edited the leading journal in the field *Ecological Restoration*, previously known as *Restoration and Management Notes*. He is currently the director of the New Academy for Nature and Culture in Evanston Illinois. In addition, he has written significantly on ecological restoration, including a new book, *The Sunflower Forest: Ecological Restoration and the New Communion with Nature*. Most of my analysis of his contributions come from a more condensed and earlier work with the same basic ideas, "Sunflower Forest: Ecological Restoration as the Basis for a New Environmental Paradigm."²⁸

Jordan declines to reply directly to the ongoing debate in the same way as the philosophers respond. Instead, Jordan puts forth his own clear ideas which convey a much more positive attitude toward restoration. He not only believes that we can have a healthy relationship with nature, but that this healthy relationship involves restoration.

Remarkably, Jordan claims that preservation in its strictest sense is impossible. "It is impossible to either stop a living ecosystem from changing or to prevent its change

²⁸ William R. Jordan III, "Sunflower Forest: Ecological Restoration as the Basis for a New Environmental Paradigm," in *Environmental Restoration: Ethics, Theory, and Practice*,. ed. William Throop (Amherst: Humanity Books, 2000).

from reflecting our influence.”²⁹ Preservation has been an important tool of environmentalists and land managers for more than a century. If Jordan is correct in this respect, as I believe he is, what does that mean for us and our relationship with nature?

Preservation in its strictest sense is impossible. Preservation in a more general and loosely defined sense is possible and restoration incorporates this approach. Jordan maintains that ecological restoration lays out a paradigm for a healthy and mutually beneficial relationship between the natural landscape and ourselves. The idea that a relationship of humans with the natural world can be mutually beneficial is revolutionary. For years we have been taught that the best we can do is enjoy nature without harming it. The idea that we should take nothing but pictures and leave nothing but footprints is still prevalent. Jordan points out that this perspective still makes us users and consumers of the natural landscape rather than members of the biotic community. He writes, “The real key to conservation is not restricting human participation, which is merely another way of fighting nature, but to find a constructive way of participating.”³⁰ He provides an example from his personal experience at the University of Wisconsin Arboretum. Early on, under the humans as visitors only paradigm, they thought the biggest problem was overuse. Too many people were coming in to visit and it was having a negative cumulative effect on the arboretum. More recently, since restoration activities have been incorporated, they have the opposite problem. There are not enough people to help with all the restoration they would like to do. It is amazing to think that we may not only be able to avoid harming nature, but may actually be able to benefit it. In addition, this same action will benefit us. Moreover,

²⁹ Jordan, “Sunflower Forest,” p. 207.

³⁰ Ibid., p. 209.

Jordan promotes the idea that

In the long run the best natural areas – the ones most closely resembling their historic counterparts – will not be those that have simply been protected from human influences but those that have been in some measure restored through a process that recognizes human influences and then effectively compensates for them.³¹

Leopold already recognized this point with his work in the national forests of the American Southwest. Separating humans from nature preserves has also been an issue of dispute in countries such as India and Brazil. Mexico, Costa Rica and a few other countries, on the other hand, have recognized the benefits of integrating people into the environment and involve residents as a part of the Biosphere Reserves.³² They live in small communities within the reserve. This appears to be working well for both the humans and the land. Humans are not displaced; they are more intimately acquainted with the natural surroundings and are therefore more effective “managers” than professional experts who would only visit for work.

Jordan presents an important connection between gardening and restoration. He writes,

If gardening provides a model for a healthy relationship with nature, then restoration is that form of gardening concerned specifically with the gardening, maintenance, and reconstitution of wild nature, and is the key to a healthy relationship with it.³³

Some forms of gardening may provide a model for restoration. Yet, there are others, such as formal gardening, which are anything but natural or wild. The concern is that

³¹ Ibid., p. 207.

³² Reginaldo Chayax Huex, Feliciano Tzul Colli, Carlos Gomez Caal, and Steven Gretzinger, “The Bio-Itza Reserve: History of an Indigenous Effort to Conserve the Maya Itza Community of San Jose, El Peten, Guatemala,” in *Timber, Tourists, and Temples: Conservation and Development in the Maya Forest of Belize, Guatemala, and Mexico*, ed. Richard B. Primack, David Bray, Hugo A. Galletti, and Ismal Ponciano (Washington D.C.: Island Press, 1998).

³³ Ibid., p. 206.

once again we are acting to control nature and shape it as we see fit. It is possible to imagine Elliot saying, "I told you so. Restoration undermines preservationist principles." This possibility would only apply to the strictest preservationist ideals. We would need to look at whether it is restoration that undermines these principles or if preservation principles simply do not hold up under practical application.

Jordan makes a distinction between different types of gardening to acknowledge this problem. There is a creative pole, which acts to create or invent new ecosystems. Formal gardening would be an example. The other pole is a conservative one. This pole is where ecological restoration fits in. Such restoration attempts to create an ecosystem that closely resembles the historic and natural models.

Jordan also suggests that restoration can be considered a form of agriculture because it is a way of doing research and learning about an ecosystem while at the same time cultivating it. Restoration can include preparing the soil, planting, controlling weeds, irrigation, and even animal husbandry. Jordan reports that many restorationists oppose characterizing their work as a type of agriculture. He believes that they are opposed because agriculture ordinarily involves controlling nature to some extent and simplifying it in order to exploit it for a human end. Restoration, on the other hand, is quite the opposite. It recomplicates the ecosystem with the goal of setting it free and is not centered on human interests. Jordan insists that even with these dramatic differences, ecosystem restoration is a form of agriculture. This is because both the (good) farmer and the restorationists achieve an intimacy with the land, plants, and animals. They also have direct relationship with nature. There is a ritual to agriculture, found in both planting a field of grains and planting a field of wildflowers and native

grasses. He adds,

Restoration provides a way of redeeming agriculture (and so ourselves), first because it makes the destruction of the ecosystem explicit, being as it were, a meditation on the exploitation if not exactly the domestication of whole ecosystems, but also because it offers back to nature a gift, worthy or not, in return for the gifts we receive from it, and because it is a gesture of respect and deference toward nature.³⁴

Jordan outlines six essential elements of a mutually beneficial relationship. First, having a relationship requires the existence of the things/beings involved in the relationship. For example, humans cannot have a relationship with a lake if either the lake or the humans do not exist. We need to keep all of the elements of a natural system. In this way preservation is involved.

Second, an ecological relationship with these systems is required. A genuine exchange of goods and services is needed between the natural community and ourselves. Jordan says this exchange must be reciprocal, a give and take relationship for all parties.

Third, the relationship should involve all of our abilities. These are abilities that have come about through natural evolution and cultural evolution. They include mental, emotional, physical, and spiritual capabilities.

Fourth, we need to acknowledge and deal with the past. History is as much of a natural process as anything else. Knowing the history of our interaction with particular landscapes as well as a deeper history of the general relationship with nature is important.

Fifth, the paradigm must be flexible and capable of creative expansion and changing development. Because our relations with nature continually change as cultural

³⁴ Ibid., pp. 88-89.

and intellectual advances occur. Jordan attacks classic environmentalism for its defense of its stance on nature. He claims that by emphasizing protection of nature *from* human influence, it has failed to come to terms with the quandary of human interaction *with* nature. Essentially, while classic environmentalism is idealistic in its conception of nature, restoration is pragmatic.

Finally, we as humans need to articulate and celebrate the relationship with nature in a personally and socially satisfying way. Doing so is important because we are a highly self-conscious, social, and language utilizing species, which necessitates our finding a way of expressing our relationship with nature. Celebration is one of the most emphasized elements of Jordan's theory. I view this emphasis as resulting from the realization that "fighting for nature" is burning out environmentalists, turning off potential environmentalists, and not as successful as we had hoped. Recognition of our checkered past relationship with nature, and the state of the natural world leads to doomsday propaganda, which is anything but inspiring. Rather, it makes many people feel that the little that they do does not make any real difference in the scheme of things. In his book *The Sunflower Forest*, Jordan suggests activities such as festivals, singing, poetry, picnics, and dancing incorporated with restoration work.³⁵ Work ceases to feel like work when play is involved. The celebration should incorporate the relationship that we have with the land. By doing this, restoration is not only fun, but also builds a more personal relationship and greater appreciation for the natural world.

³⁵ Ibid., chap. 7.

Conclusion

The ideas advocated by Elliot, Katz, Light, Rolston, and Jordan represent a wide spectrum of perspectives regarding ecological restoration. Some view it as a modern evil continuing to contribute to anthropocentric notion of the Earth as submissive; others understand it to have some positive potential, yet continue to be cautious and another believes it is a new paradigm to benefit the Earth and nature. All of these views depend on certain fundamental definitions and premises of: (1) what nature is, (2) what restoration is, (3) what the human relationship to nature is, and (4) what the human relationship to nature should be. Most of the contention is a result of these different conceptions involving primary metaphysical and ethical considerations.

The debate does not stem from different values of nature and/or ecosystems. All of our authors exhibit a deep appreciation and admiration of the natural world. None of them want to see our world plundered, polluted, or otherwise destroyed. Our debate would be more fruitful (and may cease to be a debate) if all of us had the same notions of humans, nature, restoration, and the nature-human relationship. As long as these premises continue to be debated, so will ecological restoration.

CHAPTER 2

VALUES

Values Attributed to and Arising from Ecological Restoration

When I began contemplating what to write regarding the value of ecological restoration, I thought the classic discussion regarding intrinsic values would certainly be a significant part of my analysis. Standard questions promoted by environmental philosophers tend to include: does ecological restoration have intrinsic value? If so, is it objective or subjective intrinsic value? The more I wrote on these questions the less confident I felt about the relevance of such discussions for furthering the development of ideas regarding ecological restoration. The debate surrounding natural systems and natural entities is saturated with such discussions. Elliot certainly considers intrinsic value a critical concern in his analysis of ecological, or as he refers to it, environmental restoration. His emphasis is undisputed as he spends the first of the four chapters of *Faking Nature* on the subject, as well as using it as the basis for his argument against environmental restoration. Yet, with all of the discussion surrounding the importance of intrinsic value, he refers to the intrinsic value of the restored ecosystem (the product of restoration), not the actual process of restoration. Elliot appears most concerned that a restored ecosystem will have less intrinsic value, or possibly no intrinsic value at all, compared one which hadn't been restored.³⁶

However, restoration is both a process and a product. If intrinsic value would be attributed to restoration, clarity is necessary to distinguish what part of restoration is

³⁶ Robert Elliot, *Faking Nature: The Ethics of Environmental Restoration* (New York: Routledge Press, 1997).

being discussed. From my perspective, debate surrounding restoration has become muddled because restoration is a term used to refer to both the process of restoration and the product. The standpoint I take is that attributing intrinsic value to the process, regardless of any objective/subjective distinction, seems irrelevant. An individual being could have objective intrinsic value, and a process like the cycle of life and death, which is not governed by a fallible conscious being may have intrinsic value. Nevertheless, created concepts such as ecosystems and species would only be able to have subjective intrinsic value since their existence is subjective. There is no ecosystem outside of the framework and definition provided by the conscious mind of the subject. In other words, the subject defines the ecosystem as such into existence as we know it.

An ecosystem's parts and the natural processes that are recognized as a part of the accepted ecosystem are objective and as a result may have an objective value that is not dependent of the human subject. The human subject defines the ecosystem and then attributes a value to the ecosystem of being good in itself, but this value is not recognized outside of the conscious mind of the subject(s) who frame(s) it. This subjective entity provides a useful way for us to understand the environment and natural world. It is beneficial for us to consider entities such as ecosystems real in a working sense. Yet, they are different from individual beings in that they do not exist independent of the observing naturalist or scientist. Consequently, they have a unique ethical status and cannot share the same type of value as a stem of purple loosestrife for example. As a result of ecological restoration consisting of a human defined entity, in combination with the understanding that the practice of restoration occurs only by the

subjects that frame the entity, the discussion regarding intrinsic value is less relevant here than in most topics in environmental philosophy.

Practitioners and theorists could create value for it, maybe even taking a leap and calling it pragmatic intrinsic value.³⁷ However, this type of value is insignificant in contrast to the kinds of values that actually arise from its practice. Some readers may see the values I focus on as having loose affiliations with pragmatic or subjective intrinsic value. I am open to the possibility that values such as aesthetic or community value are types of subjective intrinsic values. However, I let the reader decide for him or herself if these fit within the ubiquitous category of intrinsic value. What I see as most important is not whether these values fit neatly under the heading of intrinsic value, but simply that they are recognized as relevant and in some cases definitive for ecological restoration.

The inspiration which helped me stop spinning my wheels over the intrinsic value approach and offered the most traction for a more holistic approach came from William Jordan III in his relatively new book *The Sunflower Forest: Ecological Restoration and the New Communion With Nature*.³⁸ I prepared myself to read *The Sunflower Forest* with an attitude of skepticism and preparation for serious criticism. Contrary to my expectations, he approached the topic like a true expert in the field, offering not only a practical perspective, but also theoretical and even spiritual and sociological insights. During the course of reading *The Sunflower Forest*, I came to realize I was focusing too narrowly on the topic of values and ecological restoration. Not only had I focused only on value attributed to it, but I had set my analysis on merely one type, and most likely

³⁷ Ben A. Minteer, "Intrinsic Value for Pragmatists?" *Environmental Ethics* 23 (2001): 57-75.

³⁸ William R. Jordan III, *The Sunflower Forest: Ecological Restoration and the New Communion with Nature* (Berkeley: University of California Press, 2003).

the least relevant ascribed value. Values other than intrinsic value also deserve attribution to restoration. Yet the most interesting type of value is not what we as restorationists or philosophers ascribe to it, but what comes from it. Restoration not only changes the landscape, but in many ways has the power to change us. In this chapter I take inventory of the value we know exists in restoration, as well as the value we may assign to it, and shed light on the potential we have to receive value from it. I focus largely on the practice of restoration as it is the process and practice where the least amount of advancement has occurred and where there is less consensus.

Attributed Value

As indicated in chapter one, a number of environmental philosophers, notably Elliot and Katz, have concerns regarding the effect ecological restoration will have on the authenticity of ecosystems. This is a valid concern, but one that can be resolved by taking a look at what authenticity means. Authenticity of almost any ecosystem includes a human factor. With the exception of the continent of Antarctica (and it may eventually cease being an exception), humans have not only lived in and interacted with every ecosystem but have influenced its development. Therefore, every ecosystem where restoration has taken place or is undergoing consideration for restoration will require human influence to retain its authenticity. To intentionally refrain from interacting with an ecosystem paradoxically results in an inauthentic ecosystem. This is especially true for ecosystems accustomed to frequent manipulation. Prairies and grasslands, for example, require fire and grazing. People have been setting fires on prairies for such a long time and with such regularity that the ecosystems have not only adapted to it, but

are functionally dependent on fire. “Natural” fires on the prairies do not occur frequently enough for the kind of revitalization required. Grazing was a less human manipulated influence, although humans did have some effect on the movement of the native grazers, such as the buffalo, through their own movements, including hunting and wars. To compensate for the loss of large tracks of prairie, and the diminished numbers of native grazers, restorationists have turned to other means such as rotating grazing animals (including both endemic and non-native species), mowing, and controlled fires. These ecosystems have been manipulated in a way that has proven beneficial for humans and the ecosystem. Continuing manipulation, such as controlled burns and allowing grazing animals on grasslands, is vital for their continued existence.

For decades the perception has been that human influence is without exception linked to environmental degradation. Based on the idea that humans necessarily are the cause of environmental degradation and the attitude that nature preservation is the only way to act ecologically responsible it makes sense that a hands-off or “take only pictures, leave only footprints” management would be promoted and implemented. The argument guiding the hands-off approach looks like this:

- P1: The natural world is good.
- P2: Everything that is good should be preserved
- P3: The natural world should be preserved.
- P4: No human action preserves the natural world.
- C: Therefore, humans should not act upon the natural world (anymore than absolutely necessary).

This argument is logically valid, but not sound because the fourth premise is false.

While it is true that much of the influence from humans in recent times has been detrimental, it is a mistake to automatically assume that any human influence will be harmful or that all previous interactions have been. As seen in the case of the prairies,

human influence has worked to maintain a biologically rich, healthy, and fully functional ecosystem.

Additionally, while I will not discuss the topic at length, the reasoning resulting in the connection between humans and nature as being necessarily a negative one is based largely on the invented separation of humans from their environment. The nature/culture dualism as it is often referred to can serve as an important distinction when communicating about the “other.” Nevertheless, the emphasis of this distinction has tended to make humankind think that it can really separate from its environment. If one does not need his or her environment, he or she does not need to worry about what happens to it in terms of personal well being. One can take from it, pollute it, and kill it all the while believing that even when it is gone he or she will continue to survive and possibly even thrive. Thus, accepting the extreme distinction between nature and culture, leads to problematic relationship. The nature/culture dualism does not have such a strong influence (if it is even recognized at all) in traditional Eastern and indigenous peoples, which indicates that this kind of thinking is not inevitable.

Historical Value

Another important value that opponents to ecological restoration have focused on is historical value. They believe that restoration puts an abrupt stop to the “natural” history of an ecosystem. It also can be perceived as removing the evidence of previous developments. As discussed above, humans are a natural and authentic influence within the natural world; therefore, the concern that human initiated restoration interferes with the natural development of an ecosystem can easily be resolved by

acknowledging that humans are a part of the natural evolution of an ecosystem. Jordan recognizes that this issue has to do with language and how one understands words such as “fake,” “phony,” “copy,” “authentic,” “genuine,” and “real” just to mention a few. When one understands the genuine development to be a process, which includes a human factor, restoration is not viewed as a copy of the original ecosystem.

Furthermore, even if some historical value is lost in the process of ecological restoration, it does not mean restoration cannot have a positive impact. Restorationists and philosophers must weigh the value lost (if any) against the value gained. Ethicists are especially accustomed to challenges of competing interests. While one first attempts to reconcile problems without any compromise, compromise may sometimes prove necessary when difficult decisions must be resolved. Additionally, with the concern of losing historical value, understanding both the environment and restoration as processes rather than unchanging enduring things elucidates an important aspect of both. Something is lost *and* gained during periods of change, whether its origin is a human initiative or a “natural” occurrence. When restoration is carried out with good will toward the ecosystem, and done with the best information available, the value gained outweighs what may be lost. In the following chapters I expand more on this idea by taking a look at the practical challenges to ecological restoration. In chapter 3 I expand on when ecological restoration should be carried out, when it should not, and which situations we should be cautious about. In chapter 4 I focus more on the issue of who should partake in restoration projects, what kind of involvement is ideal, and to what intensity people should work to achieve full restoration.

Evolutionary Value?

Evolutionary value, while closely associated with historical value distinguishes itself by expressing not only the past development of the ecosystem, but also the very process by which ecosystems progress. Natural systems undoubtedly express evolutionary value, though few, even among restorationists and proponents, consider restored areas to be in possession of this value. While evolution is a theory, there is enough evidence to deserve legitimate attention. Evolution also connotes an important association with being natural. Yet, even if evolution as a theory is true, as I believe it is, we still project an unnecessarily elevated value of what we consider pristine or natural ecosystems by our concern with evolutionary value. Determining where to draw the line on what ecosystem or area expresses evolutionary value once again rests on the distinction between pristine and “human-handled” ecosystems, which, of course, originates with the incorrect separation of humans or culture and nature. Consequently, while evolution may be strong as a theory regarding the process which life undergoes, associating a superior value with ecosystems unaffected by humans reinforces the false notion that humans are not natural and are necessarily bad for the environment. Humans not only are natural, but embody the process of evolution. We are especially successful in perpetuating natural selection, so successful that we have so out-competed many of our fellow species that their very existence is in jeopardy.

Furthermore, whole, healthy, and functioning ecosystems are not what concern restorationists the most. Degraded, invaded, and fragmented ecosystems are the ones restorationists typically want to work with. If human influence effectively brings evolutionary value to a halt, then these ecosystems have already been manipulated to a

point where their evolutionary value is in question. Further manipulation will certainly change the area, but not necessarily for the worse. A degraded ecosystem may no longer have the ability to heal itself from such problems as pollution, loss of keystone species or disruption of natural processes. To leave an already severely disturbed ecosystem alone would only ensure its continuation in a state of decay and infertility, a state in which desertification or biological collapse is more likely than a rebound to its previous form. Situations such as these require intervention both to restore and to maintain biologically complete systems. When we acknowledge the alternative to leaving a degraded ecosystem to progress along according to evolution, restoration seems not only a better approach, but a responsibility we have to redeem our negative impact.

Overall, it does not make sense to concentrate on evolutionary value for restoration regardless of the state an ecosystem is in. In the case of a complete and functional ecosystem, application of ecological restoration is irrelevant. In the case of a degraded ecosystem, evolutionary value has already been stripped away and restoration will not have any immediate effect. Furthermore, trying to apply the theory of evolution to restoration extends it too far out of its jurisdiction to result in anything meaningful. Opponents of restoration use it as one more way to reinforce faulty notions about the relationship between humans and nature.

Although I do not believe concern with evolutionary value should be at the forefront of the debate regarding the value of ecological restoration, Jordan has an interesting perspective regarding the potential that restoration has in redeeming evolutionary value in degraded ecosystems. He promotes the idea that restoration helps

get degraded systems back on the evolutionary track and provides them the opportunity to once again compete evenhandedly with the cultural influences of (naturally evolved) humans. Jordan writes,

What restoration offers is a way of rescuing the classic ecosystems and the species they comprise by catching them up in the spiral of cultural evolution through a radical evolutionary uploading—the transcription of genetic information from the classic chemical-based Darwinian/ Mendelian system to an electronic system of information storage, selection, transmission, and retrieval. In the process the classic system achieves what we might call relative, or ecological, immortality—the ability to survive in a landscape dominated by the process of cultural evolution.³⁹

By restoring a classic ecosystem to something akin to its former self, Jordan believes we can not merely get it back on the evolutionary track from which it had veered, but influence its development so that it is less susceptible to, or at least more capable of compensating for, our cultural influences.

Instrumental Value

The most obvious attributed value that can be recognized and assigned to both “untouched” and restored ecosystems is the instrumental value. While many people consider this value the primary and sometimes even the only value of the environment, on the other end of the spectrum it is ignored or dismissed by some environmental philosophers. The concern that we acknowledge or focus too much on the instrumental value of an ecosystem arises from the belief that either instrumental use is necessarily destructive to the environment and should be minimalized; or that focusing on the importance of the instrumental value of nature is not a lofty enough value to promote a sentiment of care or reverence for the environment. While instrumental value clearly

³⁹ Ibid., p. 134.

does not hold a monopoly on the values attributed to the environment or restoration, theorists and practitioners alike should acknowledge its influence. Not only do we take from the environment by valuing it instrumentally, we can actually maintain it by doing so. Ecosystems such as wetlands and prairies were not valued throughout much of the eighteenth through the twentieth centuries. As a result, they were turned under, filled in, drained, or otherwise destroyed. Recognizing the instrumental value (economic or non-economic) of an ecosystem actually helps promote its survival. Wetlands for instance can be used as water purifiers, flood protection, and areas to replenish aquifers. Although it may sound selfish from a human perspective to list all the wonderful things the ecosystem can do for us, our recognition of these benefits means people think twice before draining a wetland and more likely to work to restore them. By acknowledging the value of the ecosystem, we are more likely to contribute to the long-term survival of it. Upon recognition of our misjudgments we are more apt to take steps to preserve and conserve existing ecosystems and to restore damaged and degraded ones. As a consequent of recognizing the instrumental value, the ecosystem survives as do the animals, which rely on these biologically rich areas for food and nesting areas.

Aesthetic Value

A less controversial attributed value is beauty or aesthetic value. While many ecosystems are considered beautiful, generally the degraded ecosystems exhibit less aesthetic value, as interpreted by most people, than healthy ones of the same type. This certainly is not always the case. Pollution can sometimes make glorious sunsets, and we may associate an attractive forest with an unhealthy density of trees. While these

cases do occur, I believe most people would find a healthy and functional ecosystem more attractive than a degraded and unhealthy one. Aesthetic value is one of several values which is both received from nature and attributed to it. We receive it from processing what our senses tell us about the external world. We can also modify our ideas or train ourselves to see certain things or perceive the world in a different way. Our ability to influence our perception means aesthetic value is internal as well as external. We can bring the value full circle by expressing the value we hold toward the external world. This expression may take the form of written or oral language or even action such as preservation and restoration.

In addition to considering aesthetic value as something that comes to us, we can create the beautiful and aesthetically profound while simultaneously drawing attention to the needs and value of the landscape. Restoration projects almost always involve killing something, an invasive species or surplus of a minor species. Yet environmentalists have been trained to “live and let live,” a powerful tool and simultaneously a roadblock left over from the strict preservationist worldview. As a result, people step away from making decisions about *what* should live and what should be excluded, rationalizing that they are leaving nature to take its course. But even making a decision not to do anything is making a decision. We are just as responsible for our decisions not to do anything, as we are when we decide to do something.

Yet, even when we understand that a particular species is invasive, it still causes us anguish to see it removed. Restoration provides an opportunity to deal with this anguish by allowing us to give it value and honor its memory while at the same time making way for the restored natives to take its place. Ecological restoration can do so

by turning the project into a work of art. It may be expressed as a performance art. For instance, I led a prairie restoration project in February 2004. Several work groups turned the seed distribution into a kind of dance. They cleared an area, sprinkled the seed fluidly like paint strewn and dribbled in a Jackson Pollock painting, and concluded by dancing with another member of their group to work the seed into the soil.

Jordan suggests a different form of artistic expression, more of a visual display, as part of a restoration project. His narrative indicates that the University of Wisconsin Arboretum was planning to kill several hundred trees via girdling because they were encroaching on an area of the Curtis Prairie. Typically the trees have a band of bark stripped from them and are left to die. In this case, however, a local ecological artist, Barbara Westfall, set to work after the girdling was complete and stripped away the rest of the bark between the girdle and the ground, then she went on to stain the deep orange layer with vegetable oil and finally contrast it with black paint. The result was startling and worked to highlight the sacrifice of killing the trees for the good of the prairie. Jordan writes: "In doing so she turned what might have been a routine, clinical procedure into a sacrificial act and an occasion for the creation of beauty."⁴⁰ These artistic actions express value being simultaneously acknowledged for the ecosystem and the processes involved in restoration as well as value received through the process of their restoration work.

Community Value

People often write and speak of the ecological community or the world community. As I noted earlier, humans and the environment should be considered

⁴⁰ Ibid., p. 173.

together as a community. In a community many different members exist as distinct beings; yet they have ties to each other. But how can we consider ourselves part of a community with our environment when the relationship is merely one directional? The answer, of course, is we cannot. The problem remains the perception that human influence is necessarily negative with regard to the natural world. This perception results in our existential shame and self-loathing.

Jordan explores the idea of shame and how it relates to the concept of community. The background of the word *community* and finds its root in the Latin words *cum* (with) and *munus*. He finds three related meanings for *munus*. One is “duty” or “service,” another “gift,” and a third “sacrifice.” *Community* then means we owe something like a duty to the group, and we give up this something willingly, like a gift or sacrifice. Restoration can conceivably include all three. Jordan effectively summarizes the effect of restoration by writing,

[Restoration] forces us to become aware of ourselves as ecologically effective inhabitants of a world populated by others...it allows—and in fact requires—humans to interact with these others, by actively participating in the ecology of the natural landscape. Furthermore, by providing a way to compensate for our influence on the natural landscape, it in a sense “redeems” acts of consumption and use, allowing them to become the first phase in the cycle of giving and taking back that is the ecological foundation for any relationship. As for the gift, the basis for solidarity with nature, the restored ecosystem is perhaps as close as we can come to paying nature back in kind for what we have taken from it. The fact that this gift is still inadequate and in certain respects unworthy, we now see as a characteristic of all gifts and an integral part of the structure of any relationship. Finally, the act of restoration, precisely because it is inadequate and because it implicates the restorationist in the universal scandal of creation, provides a context for achieving communion with creation.⁴¹

⁴¹ Ibid., p. 72.

Received Values

Attributed values have a monopoly on the writings regarding value in environmental ethics. This monopoly may originate from our understanding of the environment as an entity, something to be considered and held in high esteem, something to be viewed at a distance. Because restoration, like all management, manipulation, and interaction with nature is a process, we not only have the capacity to give value to nature, but also to receive value from it. Sometimes this value is commonly recognized similar to the way instrumental values of nature are often obvious. But through a well-intended process such as ecological restoration we may receive values that are unexpected. Such values benefit us, but also benefit our environment by promoting the continuation of a compassionate, munificent, and reverent relationship with the Earth, its processes, and beings.

Restoration projects often need a considerable amount of assistance from volunteers. As a volunteer on a restoration project, one does not receive monetary compensation; yet he or she sometimes sacrifices a considerable amount of time and energy to work on the restorationists' goal. Why would anyone volunteer for hard physical labor in unpredictable weather conditions? What makes volunteers not only willing, but often excited about contributing their labor?

Human to Human Community Development

Restoration, especially when accomplished primarily with volunteers, provides an opportunity to make a connection between people living in a certain area and people who have similar interests and values. Thus, restoration provides an activity which may

contribute to the building of community and the initiation of friendship. Sometimes people who know each other already will come together for the purpose of a restoration or neighborhood revitalization (often including a small-scale ecological restoration component) which promotes strengthening and deepening of community connections.

The most profound examples come from direct experience, as mine have. While participating in a variety of restoration projects at Lewisville Lake Environmental Learning Area (LLELA), I developed closer and more profound friendships. Most of the friends were people I already knew at some level, but never would have worked together toward a common goal if it were not for the restoration projects. My participation with people who worked together toward a common selfless goal transcended the oftentimes superficial interaction which comes from only talking or partaking in entertainment type activities. I know I was not the only person who developed camaraderie with fellow participants. When I left the projects I participated in, I witnessed people who did not know each other at the outset talking and laughing, exchanging phone numbers and email addresses.

Although this kind of rapport does not necessarily represent the building of community in a kind of structural or formal sense, it develops what Jordan and Victor Turner refer to as *communitas*. Jordan writes, "*Communitas* is the essential *experience* of community, the sense, not just of fellowship but of a kind of unity with others."⁴² Restoration volunteers then work collectively toward something which will benefit the whole community and simultaneously strengthen that very community. While this act takes time and certainly physical labor, it can prove much more satisfying than activities which only consume or comment on the ecological world.

⁴² Ibid., p. 150.

Human to Nonhuman Community

In addition to building and strengthening community and the experience of *communitas* between humans, ecological restoration has value in building and maintaining a connection between humans and the environment. Taking an active role in the ecosystem, such as participating in a restoration project, leads to an even more intimate association with the ecosystem. Having a personal relationship with an area, especially one worked with your own hands, has been noted to cause many people to not only recognize the value of the ecosystem, but also more willing to protect it and find it worth paying for. Jordan relates an incident with this implication to his readers in *The Sunflower Forest*.

Karen Rodriguez, a friend who works as a volunteer with the North Branch Prairie Restoration Project in Chicago, told me that a group of volunteers persuaded engineers to relocate an access port in the Deep Tunnel, a multibillion-dollar project to increase the capacity of the area's storm-water drainage system, in order to prevent the disruption of a patch of prairie they had been restoring.⁴³

Restoration has the potential to have broad impacts on how humans relate to the nonhuman community, especially when it has some direct connection to them such as one initiated by their own participation. Any kind of relationship consists of oneself and another or others. A relationship with other people can at times feel like one is dealing with someone very different from oneself. Yet, as fellow human beings there are many obvious similarities and we can even project ourselves to see things from the others point of view. Identifying similarities becomes much more challenging when interacting with something dramatically different from oneself such as another species or an ecosystem. The tendency is to focus on the differences and overlook the similarities. By

⁴³ Ibid., p. 133.

getting up close and intimate with the natural world, by acknowledging the most basic elements of life and existence, restoration can help us understand our similarities. Along the way restoration also helps us learn more about the “other” and ourselves, including a better understanding of our place in the world.

If we do not develop a relationship with the natural world, we also are not as likely to appreciate it and care for it. Lack of direct experience is a major factor in apathy regarding environmental issues including ecosystem alteration and loss.⁴⁴ Restoration provides a way to gain direct experience and thus begin renewing our relationship with the natural world as members of a biotic community.

Gift Exchange

Participation with the natural world in this way is linked to the idea of gift exchange, which Jordan emphasizes. We could understand ourselves as only receiving gifts from the environment. However, Jordan suggests taking and never returning the gift is exactly why we feel such shame regarding our relationship with our environment. Thus, restoration provides a way to give back and restore not only the ecosystem, but also the relationship we humans have with it. In “Eco-Feminism and Deep Ecology,” Jim Cheney discusses the belief that the gift that is passed on returns to its giver, while the one that is held on to fades.⁴⁵ This represents the difference between restoration and permaculture as opposed to preservation and industrial farming. With restoration we neither hold the ecosystem in a false steady-state nor pull from it all the resources

⁴⁴ Robert Michael Pyle, “The Extinction of Experience,” in *The Thunder Tree: Lessons From an Urban Wildland* (New York: Houghton Mifflin Company, 1993).

⁴⁵ Jim Cheney, “Eco-Feminism and Deep Ecology,” *Environmental Ethics* 9 no. 2 (1987): 115.

possible. Instead, good ecological restoration allows for people to accept nature's gifts and provides a way to give something back.

I agree with Jordan's analysis and his metaphor of gift exchange. Although once this metaphor becomes part of our understanding of a positive relationship we could have with the natural world, I believe it will stop being a metaphor for ecological restoration, and a real gift exchange will take shape. Real gift exchange through a gift economy has already been recognized as important to society. Yet, Cheney suggests it is often overlooked at least in part because of its associations with female work and the private sphere. The market economy on the other hand receives tremendous attention, respect and has a close connection with men and the public sphere.⁴⁶

Cheney also notes that our relationship to the other is dramatically different in a market economy than a gift economy. In a market economy the self is externally related to the other. Whereas, "In a gift economy, on the other hand, selves tend to get defined in terms of what I call "defining relationships"—where our relationships with others are central to our understanding of who we are."⁴⁷

Giving and receiving gifts with the natural world epitomizes the concept of both attributing value to and receiving value from the natural world. It transcends the completely self-interested exchange represented by commerce, which is often associated with using nature for its anthropocentric instrumental value.

Gift exchange also avoids the completely altruistic notion of charity, which much of the contemporary environmental movement has focused on. A gift exchange represents a friendship or a reciprocal relationship. Simply put, it is conceived as: "I will

⁴⁶ Ibid.

⁴⁷ Ibid., p. 122.

take your gift and will be thankful for our relationship; you will take my gift and will be thankful for our relationship.” A relationship such as a friendship that includes an element of gift exchange does not allow for either party to be detached from the other. If we closely observe how gift exchange occurs between people, we can draw generalizations about how a gift exchange with the natural world would manifest itself. The exchange of gifts may seem voluntary, but due to the reciprocal relationship it actually is compelled to occur. Gift exchange also spreads out to inform and develop other received values. The values that follow are the ones that benefit from gift exchange. They may or may not be able to be fully realized without gift exchange. However, based on the need not only for recognition of “other,” but reverence and respect for the other, employing a reciprocal gift exchange relationship would certainly cultivate values such as discovery, initiation, and spirituality.

Discovery

We (humans) can affect an entire ecosystem without even realizing it or knowing anything about the ecosystem. However, we can only reconcile those unconscious influences by knowing what we did, how it was done, how the ecosystem functioned before we unwittingly changed it, what the ecosystem needs to repair itself, how we can assist and so forth. We require much more knowledge about ourselves and the ecosystem to make positive and lasting revitalization than was required to make the initial, often disruptive and harmful, modification. As Jordan observes,

We can influence an ecosystem without understanding (or even being aware of) the nature of our influence, but we can't compensate for this influence or change the system back without understanding that influence in ecological terms—

restoration forces us to become aware of aspects of our relationship with an ecosystem that we might otherwise have overlooked.⁴⁸

Furthermore, restoration offers a unique opportunity to explore ecosystems and landscapes that are almost completely lost. The oak savannas of the upper Midwest are probably the most vibrant example of successful restoration of a lost ecosystem. Oak savannas were an abundant ecological community at the time of European settlement. However, by the time in-depth studies on savanna botany and ecosystems were underway in the region, these once dominant ecosystems were difficult to find. Adding to the problem, the oak savannas which could be located had already endured severe disruption so it could not be known how “authentic” the remaining savannas were. Nevertheless, Steven Packard attempted to restore oak savannas literally from the ground up. Having little to work with but a description of the already remnant ecosystem in *The Vegetation of Wisconsin* by the respected University of Wisconsin Madison ecologist John Curtis, Packard set out to find ground layer vegetation to plant beneath surviving oaks. While his first efforts based on Curtis’s description failed, Packard continued to search out native plants, often in out-of-the-way places, whose original habitats were unknown. After collecting over one hundred different species he mixed the seed and raked it into the ground under the oaks. This time the plants not only survived, but thrived enough to push out the exotics and weak prairie plants.⁴⁹ Packard and other ecologists believe these restored savannas are similar to those around prior to European settlement.

While this method of restoration is controversial and unorthodox to say the least, it may turn out to be one way to both restore and learn about extinct ecosystems. At the

⁴⁸ Ibid., p. 85.

⁴⁹ Ibid., pp. 135-136.

same time I would caution people not to use this method haphazardly. Nor should it be employed for the restoration of types of ecosystems which still remain intact someplace comparable to the restoration area or which have well documented inventory of species and well known ecological processes.

One may reflect on Packard's experimental approach toward the restoration of oak savannas and believe it worked out well in this case because he found species which did well under the oaks and therefore probably were a part of the original oak savanna ecosystem; therefore, it was worth the risk. If this experiment in restoration had failed or Packard stopped after his first attempt, would his effort still have been valuable? I argue that a failed attempt, in a case such as the oak savannas, still has value in showing us what does not work. The plants mentioned in *The Vegetation of Wisconsin* did not survive as Packard had anticipated. Their demise may appear as a failure at first, but it provides important information. Packard's initial failure indicates that the plants assumed to belong to the oak savanna in reality were not part of it. Therefore, Packard and future restorationists know that they need to search for different plants and to avoid the plants previously regarded as part of the oak savannas. Also, by continuing to search out plants that were endemic but had no known place in existing ecosystems, Packard eventually found what worked. Hence, he not only restored an extinct ecosystem but preserved the misfit species of plants which are a part of it.

As indicated earlier, this method can be extremely risky. It may introduce exotics or invasives. It could also leave the soil drained of nutrients or change the pH or other qualities of the soil. Therefore, I again caution that this method only be used in cases

where the original ecological community is extinct or modified so dramatically that it is unclear what was part of the endemic ecosystem.

Initiation

Besides learning about this other that we call nature or the environment, it is important to integrate ourselves into it. If we are serious about actualizing our full potential live as natural beings and truly a part of nature, theory and research regarding the natural world from the vantage point of an outside observer is insufficient. Acknowledging that we are natural beings and have a dependency on the natural world, which cannot be overcome even by the most advanced scientific and technological developments does not in itself change our actions. To change our destructive and domineering actions we must integrate what we think about the natural world with how we act toward it, in it, and on it. Initiation seems to be what we need to fully integrate ourselves into the natural world. This is not to say that we move backward to any sort of caveman state of living. Rather, I am speaking of a way to move forward. Restoration with its potential to offer not only a physical and material connection with the natural world, can include, and I argue should include, elements contributing to a spiritual, emotional and psychological connection to the natural world. Accepting merely the material connection with the natural world and denying the non-material elements opens the door for us to focus on the natural world only as a resource base from which we have not moved forward from our current state of instrumental value and resource management. Not including the spiritual, emotional, and psychological elements into restoration fails to meet the full potential of restoration. It also fails to assimilate our

understanding of ourselves as natural with the natural world. Initiation is ritualistic, and if the non-material elements are going to be realized, initiation with nature should not deviate from this ritualistic demonstration. Ritual can take a number of forms including celebration, sacrifice, festival, prayer or meditation, song, dance, poetry, and collective awareness. All of these elements can be incorporated into restoration. To not include any element of ritual denies the non-material connection we can and should have with the natural world. It is the focus solely on material elements of life which actually contribute to the ongoing destruction of the natural world.

Spirituality and Community

Although I am not aware of any particular examples of initiation combined with gift exchange and spirituality expressed in its fully developed and integrated form within American restoration, I was struck by the simplicity and effectiveness of a community ritual in India. Frederique Appfel-Marglin and Pramod Parajuli recount this community ritual in their article "'Sacred Grove' and Ecology: Ritual and Science."⁵⁰ The ritual takes place in the form of a festival in a coastal region of India where the background, social classes, and religions of the inhabitants are extremely diverse. Once a year a four—day festival is held in a sacred grove. The grove is believed to be the home of the Hindu goddess Bali Haracandi. To celebrate the goddess and all things linked to the goddess, including other beings and cycles, all productive work stops, the women celebrate and the men congregate all in one place regardless of their religious, caste, or social class differences. The festival, Raja Parba, celebrates the regular menses (the time of rest

⁵⁰ Frederique Appfel-Marglin and Pramod Parajuli, " "Sacred Grove"and Ecology: Ritual and Science," in *Hinduism and Ecology: The Intersection of Earth, Sky, and Water*, ed. Christopher Key Chapple and Mary Eveyln Tucker (Cambridge: Harvard University Press, 2000), pp. 291-312.

and renewal in the menstrual cycle of the fertile female) of the goddess, the menses of the women, and the time of regeneration for the land and waters. During the four – day festival sexual intercourse is suspended, the fields are left fallow, the fishermen do not go out to the sea, and gifts are given to the women by male family members. Raja Parba takes place at a time between the dry/hot season and the monsoon. The placement in time and the length of the festival all reinforce the meaning behind it. Raja Parba occurs on a cycle within the natural seasonal cycle and lasts four days like many menstrual cycles do. The action recognizing the goddess, the land, and the women takes place collectively. The entire community, even those who are Muslim, Buddhists, Christians, and the “untouchable” Hindus take part in the collective ritual. Thus, even though the festival originated from a celebration of a Hindu goddess, all people of the community not only can, but do take an active role in the ritual. The festival obviously contains a spiritual component, but more than that it develops a sense of community with other people and the natural world, it allows time for rest and rejuvenation, respects the different cycles of life, even those which are not materially productive and it acknowledges the connection to the world and our active place within the world.

The sense of community, not only with other humans, but with the earth and the metaphysical reality beyond what we see illustrates what restoration can offer if we let it. A ritual does not have to last four days, or include or exclude any particulars. In order to have the kind of profound effect I propose, it must include a sense of awareness, involve the non-material as well as the material aspects, and be a collective action. As Apffel-Marglin and Parajuli write,

Collective actions undertaken by the human collectivity in interaction with the nonhuman collectivity bring about the regeneration of the human community by

synchronizing it with the regenerative cycles of the seasons, the earth, the sea, the animals and the plants. In other words, such collective action is efficacious in its impact not only on the human collectivity but on the environment, or more properly on the nonhuman collectivities.⁵¹

By conceiving of our actions as collective, we cease creating divides and categories to box in our lives and relationships. We can finally start to heal the wounds of hostilities within and between classes, religions, genders, humans and nonhumans. Raja Praba exemplifies the qualities and attitude that creates and renews the world. Raja Praba also is a local festival. It should stay a local festival, and we should work with our communities to create our own ritual or renewal, a restoration celebration of sorts.

Conclusion

The value of ecological restoration cannot be conceived of in the same way as the value of individual beings and objects. Ecological restoration is not simply the ecosystem itself, a being, or a stable object; it embodies a dynamic process, a collective activity between humans and nonhumans. Restoration embodies different kinds of value, just as important as intrinsic value. However, trying to apply intrinsic value broadly to restoration is not necessary and may be a category mistake.

Restoration actually contributes to the authenticity of an area by including the human element, a part which is intentionally and harmfully excluded from preservation or purely instrumental views of the natural world. It also contributes to the authenticity and historical value of an ecosystem by restoring and maintaining traditional landscapes. Restoration can be conceived of as having instrumental value as it reopens

⁵¹ Ibid., pp. 301-302.

systems and restores entities, which may otherwise have been hindered or lost.

Instrumental value includes both economic value and non-economic value including non-anthropocentric instrumental value such as habitat sites for animals. Restoration also can increase the beauty and aesthetic value of the world.

Besides acknowledging the value that ecological restoration has, we should also recognize and embrace the values we have the opportunity to receive from it. Discovering more about the natural world, whether in a physical or metaphysical sense is one such value. The practice of restoration offers the chance to better understand the ecology of the natural world so we can improve our efforts over time. Restoration also provides the opportunity to understand ourselves in the natural world and resolve our imbalanced relationship with the natural world through a kind of gift exchange. It is a way to initiate ourselves into the natural world and a way to celebrate and revere what the earth gives us. Restoration may be a spiritual experience without exclusions and rules that often weigh down traditional religious rituals. Furthermore, it offers a wonderful opportunity to build and strengthen community relations, including human-to-human and human-to-nonhuman collectives.

Restoration certainly is not a cure all for our environmental problems. Nor is it the only possible way to achieve the values listed above. Nevertheless, it does have a great potential to be more than merely a land management practice.

CHAPTER 3

RESERVATIONS

Exploring Instances in which Ecological Restoration is not Justified or Should be Carried forth with Great Caution

Although ecological restoration presents a great hope to reconciling our mistreatment of the natural world while working to renew and strengthen relationships between humans and nature and human communities, restoration is not foolproof. Ecological restoration also cannot be relied on to solve all of our environmental and social problems. As seen in Elliot's and Katz's arguments in chapter one, there are various reasons for having reservations about restoration. Unlike Elliot and Katz, however, I believe that when properly carried forth, ecological restoration can serve as a renewing process to begin healing, reestablishing natural processes, and reintroducing endemic organisms to degraded ecosystems. Clearly then I am not arguing against the real "restoration paradigm." Yet, I too have some reservations.

My reservations do not extend to ecological restoration as a whole, but to certain approaches to it that do not demonstrate restoration's potential. Some cases may pass as genuine restoration, but include a number of questionable practices or have insufficient justification. I also raise concerns that restoration may cause some people, especially developers and lawmakers, to accept restoration as a replacement to preservation and conservation measures. Another concern I raise is for the growing number of corporate and professional restorations, which may initially produce a similar product as a community restoration but have a very different process. I look at what all

of these cases mean to the future of restoration and how they impact the value of the particular case.

Conservation, Preservation, *and* Restoration

Restoration offers something that preservation and conservation do not, namely, an approach to remedying the degradation already extant in the natural world. Yet, preservation and conservation each express their own unique and valuable approaches to the natural world. John Passmore presents exceptionally clear and concise explanations of preservation and conservation in *Man's Responsibility for Nature*.

Passmore writes,

By 'preservation' I mean the attempt to maintain in their present condition such areas of the earth's surface as do not yet bear the obvious marks of man's handiwork and protect from the risk of extinction those species of living beings which man has not yet destroyed.⁵²

Preservation then attempts to keep ecosystems essentially the same and at their ideal health over the long term.

Conservation includes a number of practices intended to limit the harmful affects of human impact on the natural world, while simultaneously acknowledging our reliance on natural resources. Conservation may also be interested in preserving an ecosystem or species. Yet, the motivation is at least in part motivated by anthropocentric instrumental value. Passmore elucidates this distinction by noting, "I shall use the word [conservation] to cover only the saving of natural resources for later consumption."⁵³ It is more like the concept of wise use and sustainable development. Resource

⁵² John Passmore, *Man's Responsibility For Nature: Ecological Problems and Western Traditions* (New York: Charles Scribner's Sons, 1974), p. 101.

⁵³ *Ibid.*, p. 73.

consumption is not perceived as inherently wrong, but the waste and senseless destruction of natural resources is deemed wrong.

As a result of these various approaches, each approach has something important to offer with respect to our relationship with the natural world. Ecological restoration cannot cover everything preservation and conservation attempt. Ecological restoration may help us better understand and improve our relationship with the natural world. However, it cannot and should not replace attempts to preserve and conserve the natural world. These approaches are not mutually exclusive. In fact, each complements the others in the sense that each picks up where the others leave off. Conservation and restoration neither adequately cover the preservationist's goals nor achieve the same degree of stability of natural systems and areas that preservation aims to do. Conservation deals with continuing human impact and resource issues more completely than either preservation or restoration approaches. Finally, restoration offers a solution to bring degraded lands and waters back to a functional state similar to its historic form. None of these approaches is complete in servicing everything we need in our relationship with the natural world. Thus, none of them can replace the others.

Additionally, not only should ecological restoration not be seen as a replacement for preservation and conservation approaches, but, it should only be implemented when these approaches have been tried and failed, when the damage to the essence of the ecosystem has already taken place. Restoration should not be employed as a first line of defense to maintaining integrity, function, health, and beauty of a natural system. By definition, restoration is an attempt to mend or heal a system that has already been degraded to the extent that it cannot recover to the same degree without the

intervention of restorationists. The Society for Ecological Restoration International maintains,

Ecological restoration is an intentional activity that initiates or accelerates recovery of an ecosystem with respect to its health, integrity, and sustainability. Frequently, the ecosystem that requires restoration has been degraded, damaged, transformed or entirely destroyed as the direct or indirect result of human activities. In some cases, these impacts to ecosystems have been caused or aggravated by natural agencies such as wildfire, floods, storms, or volcanic eruption, *to the point at which the ecosystem cannot recover its predisturbance state or its historic developmental trajectory.*⁵⁴

In many cases restoration benefits from having relatively undisturbed ecosystems of the same type available to learn from, draw needed species from, and compare with in order to determine the success of the restoration. More importantly, preservation and conservation work to maintain the integrity and essential character of the natural world, which has already been lost or at least greatly altered by the time restoration would be applicable. Thus, we need to step up our preservation and conservation efforts during the same era restoration work is increasing.

I would like to say that my recommendation of incorporating restoration into a group of approaches along with preservation and conservation to round out our approach to the natural world is just a thoughtful preliminary precaution. However, actions and policies based on the mind-set that restoration can replace preservation and conservation have already unfortunately been implemented. Take as a prime example the national program initiated in 1990 by then president George H. Bush to implement the goal of no *net* loss of wetlands.⁵⁵ At first glance, the unusual implication

⁵⁴ The SER International Primer on Ecological Restoration (version 2, October 2004), http://www.ser.org/content/ecological_restoration_primer.asp (emphasis added)

⁵⁵ U.S. Department of the Interior, *Wetlands: Meeting the President's Challenge* (Washington D.C.: U.S. Fish and Wildlife Service, 1990).

of this program may not register. Rather than initiating a goal of no loss of wetlands, the initiative and its consequent mitigation and wetland banking programs incorporate the term *net* into the formula. As a result, preservation and conservation fall to the sidelines as mitigation of intentionally “developed” and subsequently destroyed wetlands is offset by restored or created wetlands elsewhere.

Created and restored wetlands are considered equally valuable by the initiative as intact, naturally occurring wetlands. Not only does the no net loss initiative view the wetland ecosystem solely in instrumental terms, it also changes its focus away from preservation and conservation toward restoration and creation. Creation here means developing an ecosystem in a place that has no historical link to that ecosystem type. Creation is another way of referring to ecosystem replication. The National Wetlands Mitigation Action Plan refers to creation as distinct from restoration, but cites them jointly without clearly defining either one.⁵⁶

While I certainly support restoring wetlands, I disagree with any initiative that would finance restoration as a direct result of other wetland destruction. This case is a perfect example of what Light refers to as malicious restoration. The initiative is being continued by the current Bush administration with essentially the same goals. In 2002 an updated version of the action plan clearly stated that “The Bush Administration affirms its commitment to the goal of no net loss of the Nation’s wetlands.”⁵⁷ While the new plan does call for more steps to be taken to avoid or limit impacts to wetlands, the language used is exceedingly vague and open for disparate interpretation. Furthermore, nothing has changed in its goals of no net loss. The action plan reads, “authorized

⁵⁶ National Wetlands Mitigation Action Plan, 24 December 2002, <http://www.epa.gov/>.

⁵⁷ *Ibid.*

losses of wetlands and other waters are offset by restored, enhanced, or created wetlands and other waters that replace those lost acres and functions and values.”⁵⁸

Emphasis on mitigation and wetland banking, as well as large governmental restoration projects (as opposed to the smaller, more local projects that I favor) is also unchanged.

As good as restoration can be, and as hopeful I am about its unique capacity, it cannot be allowed to replace conservation and preservation measures. A successfully restored ecosystem is still not as ideal as an ecosystem that has not experienced the kind of degradation requiring restoration efforts. Although restoration appears to be a fix applicable to all situations, there are some ecosystems where full restoration is not currently, and may never be, possible. From a practical perspective, mitigated restoration also is not cost effective, or an efficient use of paid labor. I point out this problem because government sponsored projects are often bid on and use more paid labor than community based restorations. Preservation and conservation require resource inputs as well, but over the long run are more cost-effective, efficient, and more likely to maintain ecological integrity. The financial quandary of dismissing the more preventative measures of preservation and conservation of ecosystems can be observed in the largest government sponsored restoration, the Kissimmee River in Florida. The river was originally straightened by the Army Corps of Engineers to control flooding and increase agricultural land. Later people realized that straightening the Kissimmee negatively affected the Everglades ecosystem and caused the water quality to decline. William Throop reports,

The cost of putting the curves back in the Kissimmee, approximately \$372 million, is at least one hundred times the cost of the initial straightening, and

⁵⁸ Ibid.

much more will be needed to fully recover the hydrological cycles on which the Everglades depend.⁵⁹

Only the northern half of the river was restored. Due to the high density of residents and intense land use along the southern half, it probably won't receive the same degree of restoration if it gets any at all.⁶⁰ The U.S. government could have saved money, time, all of the functional values and most importantly maintained the ecological integrity of the Kissimmee and the Everglades had they adopted a policy of conservation by preserving the Kissimmee's natural flow and requiring limited-intensity land use around the river.

Creation ≠ Restoration

In addition to the no net loss initiatives de-emphasis of preservation, the federal organizations involved in the mitigation including, but not limited to the Army Corps of Engineers, and Environmental Protection Agency have restored and allowed wetlands to be "restored" where no wetlands have existed. This practice of "restoring" an ecosystem type where it never was historically is not restoration. It is not even bad restoration; it is creation, and it is not the same as restoration. Unfortunately this type of land alteration is sometimes passed off as a type of restoration, often in an effort to make it appear more benign than it really is. As a result, creation projects affect public perception of the value of efforts that really are restoration. Such projects are to a large degree the cause of Elliot's claim that restoration is faking nature, and Katz's derogatory accusation that ecological restoration is actually a big lie.

⁵⁹ William Throop, *Environmental Restoration: Ethics, Theory, and Practice* (Amherst: Humanity Books, 2000), p. 12.

⁶⁰ Lou Toth, Manager of Kissimmee River Restoration and keynote speaker at the Texas Society for Ecological Restoration Conference, Clear Water, Tex., July 2004.

Creation emphasizes more of a technological fix than restoration's more organic approach. It does not necessarily incorporate the historical ecosystems into the chosen outcome. Creation approaches the world from one narrow perspective, whereas restoration considers it from all angles, taking a holistic view of the natural world. It focuses entirely on the end product, while trying to get the job done efficiently, primarily by paid contractors. It also tends to judge the success of the creation largely on appearances over a brief time period.

Restorationists have generally seen these creation programs as diverging so far from good restoration that they are not accepted as restoration at all. The principles behind them are different than the principles that guide many restorations. They are certainly contrary to my conception of good ecological restoration, which are derived largely from the Society for Ecological Restoration and Jordan's fundamental principles.

Marsh on a Mountain!

As problematic as creation of ecosystems in places where they did not exist historically may be, the worst approach is to create an ecosystem in a place where it cannot be. Creation may occur not only where an ecosystem may not have existed historically, but also where conditions would not permit it to naturally exist. Not all creation projects take into consideration the need for appropriate placement and conditions for particular ecosystems to function. Take, for example, the case of creating a marsh, a typically lowland wetland, on a mountain. The soil would not be the right type or depth (if any soil was available at all). The watershed necessary for the marsh's long-term existence would not be present. The incline of the mountain would probably be too

extreme. Temperature and precipitation would not be suitable. It is highly unlikely that there would be any natural connection to other ecosystems that would normally surround it. Appropriate flora and fauna would have a difficult, if not impossible time finding their way to the created mountain marsh. As a result all elements would have to be brought in to the site. Like a botanical garden full of exotics, the system would not function on its own, but require intensive and ongoing manipulation.

I was unable to find any particular cases of marshes being created on mountains. In fact, my search for documented cases of unsuccessful restoration in general came up short. Actually, it is important to note that I am not alone in experiencing problems locating well-documented cases of unsuccessful ecological restoration projects. Higgs experienced this same frustration when preparing for a presentation on the ethics of mitigation. He expresses his distress by writing,

To my chagrin, it was difficult to find well-rounded descriptions of such projects in the literature, and when I called several well-known practitioners, they were reluctant to offer specifics. Concerns were expressed about offending clients and revealing proprietary knowledge.... Proponents of corporate projects have less interest in producing comprehensive accounts for fear these might either undermine competitive advantage or reveal unflattering information about the project.⁶¹

In the end Higgs resigned himself to using fictional cases to make his point. Yet, when one is involved in restoration, it is clear that not all projects are success stories. Regular practitioners allude to some of the problems, but rarely go into the specifics of the case. On the other hand, successful restoration projects regardless of their backers (national, corporate, or community) have a better chance of being published and becoming well publicized in the literature.

⁶¹ Eric Higgs, *Nature by Design: People, Natural Process, and Ecological Restoration* (Cambridge: MIT Press, 2003), p. 208.

Nevertheless, I am aware of a general understanding that many of the creation projects, particularly those that are part of the no net loss initiative, have been ill-placed. Even the updated action plan for the initiative itself supports this by stating

As a general matter, compensatory mitigation decisions are made on a case-by-case basis and often do not consider the proper placement of mitigation projects within the landscape context, the ecological needs of the watershed, and the cumulative effects of past impacts.⁶²

The statement is part of an acknowledgement that these creation projects have not had the proper research regarding their placement to contribute to their success. When the creation projects fail to seriously analyze their “proper placement,” they do not succeed in creating a wetland in place of the one mitigated for. Thus, they fall short even in their meager goal of no net loss.

The action plan sets a goal of *identifying* proper criteria for appropriate placement for creation by 2005, over two years after the action plan was signed. Nothing was mentioned regarding the implementation of the proper criteria once it becomes formally identified. This report was the latest information I was able to locate regarding the no net loss initiative, so I cannot report as to whether the criteria has been identified, much less implemented.

Now quite frankly, restoration following the accepted definition of restoration, “...the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed,”⁶³ will not meet with this criticism because it will be restored in a historically and spatially appropriate region. However, due to the fact that creation projects are sometimes portrayed as a type of restoration, I believe it is necessary to

⁶² National Wetlands Mitigation Action Plan.

⁶³ The SER International Primer.

address how creation differs from restoration so as to draw a clear distinction between the two.

Commodification of Restoration

Perhaps the most problematic issue I have with the way some restorations are approached stems from the attitude that they are simply one more thing (both product and process) that has a market value and whose true value will find its place in a free market. This notion underlies a variety of questionable restoration approaches and threatens the accepted restoration paradigm. In many respects this concern of the commodification of restoration is an extension of the sentiment against commodification of nature in general.

I am not alone in my unease with the commodification of restoration. Higgs, among others, has discussed the topic of commodification of nature, spending a significant amount of time on it in his book *Nature by Design*.⁶⁴ He gives the example of the ultra-commodified brand recognized worldwide simply by two round mouse ears. It should come as no surprise that Disney offers a hyperreal experience often touted as magical. They do not claim to partake in restoration projects per se, but Higgs is concerned with their commodification of nature in resorts such as the Wilderness Lodge Resort. The lodge is designed to resemble lodges in the Pacific Northwest complete with redwood trees, and created waterfalls. Even the villas are “infused with the nature and the spirit of the Pacific Northwest.”⁶⁵ The wilderness lodge is nowhere near the Pacific Northwest, however. It is conveniently located near the Orlando Florida-based

⁶⁴ Higgs, *Nature by Design*.

⁶⁵ Disney Wilderness Lodge Guest Rooms Lodging Page, <http://disneyworld.disney.go.com/wdw/resortsDetail?id=TheVillasatWildernessLodgeResortGuestRoomsListingPage>.

Disney World and Magic Kingdom. Yet, what is wrong with such a location or the commodification of a regional ecosystem? The corporation does not claim the resort is authentic wilderness. It offers a safe, predictable, comfortable setting for families on vacation. The approach to hyperreality of wilderness is nothing new for Disney in particular and for promoters of mass entertainment and recreation in general. Disney ran Frontier Land as part of the Disneyland experience from 1955 to 1971, and Disney campgrounds have been in operation even longer than the Disney Wilderness Lodge Resort. Higgs responds,

In colonizing the imagination, what the Lodge and similar projects are accomplishing is a friendly takeover of the reality that underlies themed experience. By turning wilderness into a conceptual product, one that is adaptable, delimitable, endlessly pliable, and available, Disney is also creating a new reality in which to experience it.... The worry is that this takeover of reality to produce a world filled with hyperrealities will displace reality as a moral center.⁶⁶

The wilderness lodge is just one example of how our perceptions of what nature is or should be are being used to market hyperreal or truly unreal products and experiences to us, which then reinforce a superficial understanding of nature and wilderness. Our preconceived notions continue to perpetuate this commodification of nature as we seek our recreation in places that are simultaneously less real, but appear more real than reality. The understanding of nature and our relationship to it shifts as we see nature as simplified, predictable and limited to its economic value. Our experiences, which we think of as experiences of nature, become inextricably tied to advertisements, fees, and room rates.

Although Disney has not promoted these projects as restoration, they complicate the task of restoration by changing the perception of ideal nature. Higgs further notes,

⁶⁶ Higgs, *Nature by Design*, p. 204.

“Through an elaborate system of simulation and image management, corporations such as Disney produce commodities that change the meaning of nature and wilderness.”⁶⁷

Restoration becomes affected when people’s notions of what nature is, has direct link to the commodified themed “nature” they are familiar with. I agree with Higgs’s analysis that commodification of nature in general will impact restoration, as it increasingly risks becoming associated primarily with appearances and less with ecological integrity.

Additionally, if a mock ecosystem is created in a place where it has not existed before, and likely could not exist without careful management, one must question, what happened to the previous ecosystem? In addition to altering people’s perceptions of nature through commodification, the themed nature displaces the authentic ecosystem. This displacement presents a dilemma not only for restoration but also for preservation as authentic ecosystems are destroyed to make way for hyperreal ones. I wonder then if these entertainment venues will one day, in a sadly ironic twist of events become the sites for beneficent ecological restoration once they cease producing sufficient profit.

The previous case of the no net loss initiative exemplifies the commodification of restoration as well. Although my earlier examples focused on cases in which creation was used to offset the loss and destruction of wetlands, restoration may also be implemented. The restoration of a wetland in the context of the initiative is a direct result of another wetland’s destruction. Because the action plan does not go into detail over why the no net loss initiative has been implemented, I cannot state with certainty the rationale behind it. However, the action plan refers to no net loss as part of the Clean Water Act. I interpret this reference as a response to the relatively recent acknowledgement of the role wetlands play in water filtration, the recharging of aquifers,

⁶⁷ Ibid., p. 205.

and the offsetting of flooding problems. In other words I interpret the initiative as a result of enlightened self-interest. Now, this result is not the worst of all things to happen. In many respects it also saves wetlands from thoughtless destruction as there is a value, albeit mainly anthropocentric instrumental value, attached to wetland ecosystems. Additionally, in the meantime, other species of life benefit from their continued existence. However, the idea that restoration serves as a tool to achieving clean water for humans and preventing devastating floods seems to stop short of what restoration should be. Rather than restoring an ecosystem for the ecosystems sake, it makes the restoration conditional on short-term anthropocentric interests. As a result, although I do accept it as real restoration, I do not accept most ecological restoration that results from mitigation programs as good restoration. I believe they have failed to meet the potential, and may not even be what restorationists such as Jordan have in mind when referring to restoration. The fact that restoration is traded for a development project means it is commodified. Moreover, the only reason why restoration would be undertaken in the no net loss initiative is to keep the tally even, so to speak. Wetland restoration here fails to appreciate the wetland as a historical ecosystem that needs assistance recovering even when there is not something else to trade it for.

Corporate Ecological Restoration

While Disney's wilderness lodge and other similarly themed approaches to nature have appropriately avoided calling what they do restoration, some companies have engaged in corporate ecological restoration. My take on corporate restoration suggests an approach of prudence, but does not rule it out altogether.

An increasing number of companies are becoming involved in restoration in one sense or another. For example, Coastal America, a government organized coalition, has organized a corporate wetlands restoration partnership which includes over one hundred fifty state corporate members throughout the United States in addition to non-profit organizations, governmental affiliates, and military partnerships. The companies involved range from those directly involved in the environment for their livelihood, such as Capaccio Environmental Engineering, to others which have a reputation of having detrimental environmental impacts, like the DOW Chemical Company and Exxon Mobil Refining and Supply. Most have little direct link to environmental issues such as Verizon, and Anheuser-Bush Co., Inc.⁶⁸

A variety of approaches exist for companies wishing to get involved in ecological restoration. Some turn their own properties into restoration project sites, bringing native plants and even streams or ponds back into their historic vicinity. They may even replace blacktop parking lots with more natural and permeable pea gravel or stone. A good example of such restoration is the General Electric facility located in Pewaukee Wisconsin. GE restored a tall grass prairie within its historic range on the land surrounding the building and parking lot. Other companies contribute financial support to restoration projects outside of their property. They may lend their support in name and acceptance of optional policies that benefit ecological restoration. Companies may even encourage their employees to become directly involved in ecological restoration.

I applaud the direction these companies have decided to take. Even a conscientious effort to landscape the property surrounding the company buildings with

⁶⁸ Corporate Wetlands Restoration Partnership, Participating Companies as of 7 February 2005, <http://www.coastalamerica.gov/text/cwrppart.html>.

native flora is a significant improvement over the ubiquitous field of closely trimmed grass and buildings surrounded by tightly sheered hedges. Considering the large role corporations play in Western culture, I believe their assistance is important in achieving the environmental goals of decreased pollution, emissions, consumption of resources, and use of chemicals. By getting involved at the corporate level, these companies have a unique opportunity to communicate the importance of the environment, including approaches of conservation and restoration, to the public. They also, typically have the financial capacity to support more ambitious restoration projects that need more initial monetary input than either communities can or a government is willing to provide.

Yet, I cannot speak honestly about corporate ecological restoration without issuing a caution. As I mentioned earlier, it is extremely difficult to find published cases of unsuccessful restoration projects. Thus, I speak to my concerns surrounding corporate restoration without attributing any particular concern to a specific corporate sponsor. To begin, corporate restorations run the risk of being seen as a publicity ploy. Companies are increasingly discovering the benefits of promoting their own environmental record, which works to raise their public approval and ideally their bottom line as well. While I have no problem with a company benefiting from its own restoration work, I am deeply concerned that the primary reason for getting involved in ecological restoration is so it may serve as a tribute to the company, as a living advertisement. In such cases, the focus is less on the ecosystem and more on the appearance of the company and the corresponding approval from consumers. The restoration undertaken by corporate sponsors runs a very high risk of becoming commodified. That is, ecological restoration may only be carried out when there is a sufficient return on the

company's investment. It may be used to gain a political and financial edge on competitors. While I feel certain such restorations are possible, Higgs states this position even more strongly by generalizing, "The uses of restoration in corporate environments serve to justify the political-economic interests of the firm as much as or more than the ecological interests of the site."⁶⁹

Another concern is that ecological restoration work may be used to mask or justify the negative actions the company has partaken in, especially with respect to the environment. Restoration may be used as a diversion to focus on positive accomplishments and reduce concern about negative impacts of the company's work or product. As a result, actions to curb negative impacts may be avoided if customers and the public in general are satisfied with the contributions to ecological restoration.

A third concern is similar to the one Higgs and I express about themed nature. Restoration may be carried out in a way that is not adequately grounded in ecological and regional knowledge. The emphasis may be placed on appearances rather than the integrity, function, and health of the restored area. As a result, the attempt to restore may not result in restoration per se, but on landscaping designed to fit the perceived desires of the public.

Finally, corporate restoration is less likely to include all of the potential values for the local community as compared to a community-sponsored restoration. They are also less likely to use volunteers as their primary work force. They often choose instead to hire professional restorationists or landscapers. Companies want to know that their workers are reliable and that what they are getting is a consistent product. They also want to have someone who can legally and financially insure their work. While using

⁶⁹ Higgs, *Nature by Design*, p. 207.

professionals is not necessarily a bad way to reach the end product, something is left out in the process of restoration.

Commodification of Practice

I have been speaking predominantly about restoration here in terms of its product, the end result of the restoration goal. The function and integrity of the resulting landscape is important, as one would expect. After all, the interest of the ecosystem is the reason why restoration should be initiated in the first place. Additionally, in the best restoration efforts the ecosystem is the principal focus of the established goals. Still, another aspect of the commodification of restoration is the commodification of its practice, the process of restoration. As I have shown thus far, the process of carrying forth the work of restoration offers just as much potential benefit as the end product. Currently, the practice of restoration is also the most vulnerable and disputed aspect of restoration. Even among restorationists, there is disagreement over how to best carry out the practice or work of ecological restoration. The science supporting ecological restoration, while constantly being updated, has reached a kind of paradigmatic consensus. However, a similar agreement has not been achieved regarding how restoration should be carried forth and by whom. At the forefront of the debate are the problems and promise of professional restorationists versus the benefits and drawbacks of volunteers. I address the contributions that volunteers can bring to restoration in chapter 4. Consequently, my focus here remains with the advantages and limitations of ecological restoration professionals.

To begin with, professionals who carry out the work of restoration for a living have a lot to offer to the field. They generally speaking, are informed about current restoration practices and techniques, are educated in ecological principles, have experience with ecological restoration by the time they are professionals in the field, are dedicated to the values of environmentalism especially at the ecosystem level, and often are insured. As professionals, they are likely to engage in a variety of projects over a long period of time, and thus have a vast amount of experience. Professionals are also more dependable than volunteers due to the direct connection of the work to their livelihood. Accordingly, they can offer something volunteers cannot, a fairly consistent product for their client.

Encouraging restoration to become the more professionalized would also create many opportunities for environmentally friendly employment. Consequently, it would provide an added boost and a new direction to the economy. It would allow more formalized standards to be implemented. Furthermore, professionalization of restoration could require more rigorous requirements for certification of particular skills, knowledge, or the practice of restoration in general.

Yet, there is something about the idea of professional restorationists that leaves people such as myself, Jordan, and Higgs to do an about face and examine the implications of making restoration a professional undertaking. It has nothing to do with a suspicion of sinister motives of professional restorationists. Our hesitation also does not emanate from attitudes of jealousy or contempt for those who want to find a good living doing something that will benefit the environment, and thus all of humanity to some extent. I know it is difficult to find steady paying work that focuses on the environment in

a compassionate way. Professionalization of ecological restoration has given a number of people the promise of turning their values and interests into something meaningful, which rewards them accordingly for their work. My hesitation to accept widespread professionalization of restoration does not even originate from some sense that those individuals involved in restoration as a career are greedy profiteers ready to demand exorbitant amounts of money. My sense is that most people who go into restoration want to be able to contribute their skills and labor to the benefit of the natural world and fellow citizens while being able to making a decent income.

My hesitations regarding restoration as a professional enterprise are twofold. First, making restoration the work of professionals clearly moves it into the area of commodified labor. A price can now be put on the practice of restoration. Therefore, restoration becomes valued not merely instrumentally, but with a strictly quantitative, free-market monetary value. The focus shifts from the ecosystem in consideration to the professionals and their corresponding certification and required payments. The degree to which this shift would take place could vary considerably and depends on both the attitude of the professionals and the expectations of the clients. Yet, professionalization of any field inherently changes the focus of the enterprise to some degree. As Higgs writes, "To commodify a practice means to change the locus of attention from things to devices and to transform it into an exclusive professional enclave geared to efficiency."⁷⁰ This is not to say that this is sufficient reason to prevent ecological restoration from becoming a professional occupation, rather it requires us to be conscientious and careful about the direction professionals take restoration.

⁷⁰ Ibid., p. 206.

Second, and I believe more potentially problematic, though not inherent in professionalization, is the worry that professionalism will eliminate the participatory element of volunteer restorations along with the corresponding values which are more likely to occur in volunteer organized restoration projects. By restricting restoration to professionals, the community will not be able to have as direct a role, if any, in restoration projects that affect them. They would be less likely to go through the certification process and formalized coursework, and therefore would not be eligible to participate in ecological restoration in the same way as professionals. The implementation of professional standards would reinforce a hierarchy of valued knowledge and skills and lead to the exclusion and discouragement of individuals who are rich with important local knowledge. As a result of the commodification of the practice, professional restorationists would be less likely to recruit volunteers, especially those who have equivalent skills, for fear they may undermine their own professional opportunities if they have to compete with someone similarly qualified who is willing to work for free. Eliminating the participatory element of ecological restoration also works to undermine creativity and experimentation, which have been defining characteristics, setting restoration apart from other environmental management approaches. Higgs acknowledges this possibility by writing, “The process of commodification threatens to undermine the subject of restoration by distorting our relations with natural processes and also by turning the practice of restoration into a product.”⁷¹

I discuss a number of reasons for supporting the inclusion of community-based volunteers in the next chapter. Let me leave this discussion by saying that while professionalization does not bid well for the participatory element of community and

⁷¹ Ibid., p. 214.

volunteer based restorations, it does not inherently eliminate the possible continuation of this important factor of good ecological restoration. Yet, it is important to realize that making the field increasingly professionalized is far easier than removing the professional standards and corresponding attitudes once they are in place. A possible compromise would entail one or a small group of professional restorationists working closely with volunteers on all levels and encouraging individuals who have local knowledge and creative inspiration to contribute in a community friendly atmosphere.

Conclusion

Even though ecological restoration presents us with a wonderful opportunity to take actions toward healing our damaged ecosystems, it cannot be carried out flippantly and carelessly. We must be seriously concerned that restoration does not serve to replace other effective approaches to the natural world, such as conservation and preservation. It is also important to distinguish between real restoration and practices such as creation, which may cause public confusion regarding what restoration really is and what it attempts to accomplish. The commodification of nature in general has a negative impact on the goals of restoration. National and corporate sponsored restorations pose a serious threat to the essential character of ecological restoration by encouraging the commodification of the product of restoration. The commodification of the practice of restoration is also problematic. While I recognize the benefits of professional restorationists, a move in this direction should be approached cautiously and with conscious effort made to incorporate the values of non-commodified, particularly community, restoration.

CHAPTER 4

INVOLVEMENT

Determining Who Should be Involved in Ecological Restoration and Why

If a restoration project needs doing, does it really matter who carries it out? Additionally, if the project organizer(s) do have preferences as to who is to be involved in the restoration project, does this mean their preferences are ethically relevant? After all, the most important thing, and often the only concern, is that the vegetation gets restored and the processes of the natural ecosystem are up and running again. Right? Wrong. While it may initially appear as though who does the restoration does not make much difference, it actually does have a significant impact not only on the success of the first round in restoration, but on the longevity of the ecosystem. Over and above the practical concerns of involvement, who is involved and just as importantly why they are involved, contributes to a number of potential values we have the opportunity to receive from the practice of restoration. In most cases what kind of person is encouraged to get involved and what kind of person is not has serious ethical and even political ramifications. In this chapter I explore the impact of involvement on ecological restoration. Areas of examination include practical and community concerns as well as ethical and political impacts from what kind of people get involved in restoration projects. Before analyzing what kind of people should be involved in restoration, I examine what constitutes involvement in ecological restoration.

What Does Involvement Mean?

When people think about getting involved in ecological restoration, they often first visualize clearing the undesirable vegetation and planting the new seeds and seedlings. This part of restoration is labor intensive and the most direct interaction restorationists have with the ecosystem they are trying to restore. While direct work with the ecosystem clearly makes up a significant part of restoration, and one in which a lot of labor is required, it is not the only thing that goes on during restoration. Participants can be involved in restoration in a number of ways. Depending on the size, type, and needs of the restoration project as well as the ability, strengths, and level of commitment on the part of the individual participant, they may be involved in every step along the way, or focus their efforts on one part of the project.

Before doing anything else, the project needs planning, recruitment of restorationists, and acquisition of adequate supplies. Depending on the project, they may also need to obtain financial support. While all these tasks could be accomplished by one person, it is possible to have different people working on different tasks. For certain requirements such as planning and recruitment, the project would be better off with a collaborative effort. If the project is largely volunteer based, it is more likely that these tasks will be filled by different people to distribute the work load. If there is a paid position, that person would probably lead most if not all of the tasks listed above. I have suggestions in the next section about what kind of people should get involved in work preparing for restoration.

Another way to get involved in restoration is to offer support services to restorationists during the restoration. Every project I have been involved with, and I

believe this is the case with most restoration projects, require some transportation between the homes or workplaces of the participants and the restoration site. Additionally, most projects last at least several hours while others may take all day for several days. As a result, a large project may need someone to coordinate the distribution of snacks, beverages or even meals to the other participants. People who are willing to provide rides and water to restorationists are just as involved in the project as those who are digging holes to place seedlings.

Another way to participate in restoration is one that has been gaining in recognition through books such as *The Sunflower Forest* and plays such as *Queen Salmon*.⁷² Art, poetry, and performances contribute to the full range of ecological restoration involvement. By celebrating the ecosystem, and restoration, we celebrate and value our ties to the natural world and our place within it. Artistic displays also educate people about the possibilities of restoration and advocate an awareness of the relationship humans have with their natural world. Unlike landscape art, postcard photography and transcendental naturalism, art that illustrates restoration includes humans in nature not as visitors or villains, but as integral members of the natural world.

In chapter 2 I took a look at restoration and ritual, specifically ritual as a way to celebrate and gain a deeper connection with both fellow participants and the natural world. I must acknowledge here that *ritual* is a loaded word, often associated with religion and exclusive societies. Ritual need not be exclusive or religious. However, if the word becomes a barrier to actually attaining the desired effect, then one could think of the celebratory acts more as community traditions or simply restoration celebrations.

⁷² Mattole River Restoration documentary including *Queen Salmon*, "Thinking Like A Watershed," 1997.

In his book *Nature by Design: People, Natural Process, and Ecological Restoration*,⁷³ Eric Higgs suggests that *ritual* is too loaded a term and too problematic to be broadly applied to ecological restoration. He writes,

Proponents of ritual in restoration have generally adopted the view that ritual has benefits such as enrichment, community, creativity, and liberation. However, there is also evidence that ritual can have a conservative function and constrain social possibility. It can exert a powerful normative force on a community, which is often the case with devout and heavily prescribed religious practice...[also] ritual, no matter how it is understood, is political....The right to perform the rituals one chooses can be a political issue on par with freedom of religion and expression.⁷⁴

I agree with Higgs that ritual does open itself to the possibility of excluding some by making ritual normative and seemingly necessary part of restoration. Yet, because rituals such as the Raja Parba festival can bring together people from seemingly opposing cultural and religious backgrounds, I do not suggest that ritual automatically is problematic or should be abandoned. However, if the terminology gets in the way of achieving the sense of celebration and community, locally appropriate terminology can be used in its place without losing anything significant.

Practical Concerns

All restoration attempts aim for a successful outcome. The goals may be different according to the type and scale of the project, but in the end every restorationist hopes their goals will be met and their work will live on without requiring undue levels of further involvement. Because ecological restoration focuses on natural systems including the living and non-living entities as well as ecological processes, a general understanding of

⁷³ Eric Higgs, *Nature by Design: People, Natural Process, and Ecological Restoration* (Cambridge: Massachusetts Institute of Technology Press, 2003).

⁷⁴ *Ibid.*, pp. 252-253.

ecology is required to ensure the project's success. Just as important, and I argue often more important, is the understanding of local dynamics including the natural history of the area, endemic species, local weather patterns, regional fluctuations, and human influences including historic and ongoing impacts. Higgs promotes various types of knowledge that should be applied to ecological restoration in his book *Nature by Design*, including, "Ecological knowledge [which] is a distinctive fusion of scientific impulse and local knowledge."⁷⁵

The best way to ensure that the project encompasses both general and local knowledge is to have someone involved who knows these things. There is no harm in including a number of people who are knowledgeable in the same area. Backgrounds in ecology and natural history are important. Because they tend to compliment each other, the resource person will often be the same person. However, while a restoration project should have at least one individual onboard who has knowledge of general ecology, this person need not be a scientist. This person may not even need formal or advanced training. This is not to say the person should not be up to date on ecological concepts, restoration approaches, and local knowledge. But a great deal may be learned through books, discourse, and field work, which have no ties to a degree or a degree granting institution. A good number of successful restorations, and indeed the earliest attempts were carried out by people who did not have degrees in ecology or restoration.

Leopold's work on the abandoned farm around the shack in Sauk county Wisconsin was primarily an attempt to bring life back to the property, hold the soil, and preserve as much of the remnant vegetation and habitat areas for both year round and migrating animals. Leopold's work may be considered something more like land

⁷⁵ Ibid., p. 196.

reclamation by today's standards than restoration. His aim was not necessarily to get the farm back to pre-settlement conditions. While Leopold was trained as a forester, he did not have any formal training in restoration. What he did have was experience of what not to do, an observant eye, an inquisitive mind, and a determined spirit combined with a deep care for the land.

Similarly, the initial restorations at the University of Wisconsin Arboretum were done by early ecologists and land managers who had a great knowledge of ecology, but no background in restoration or any guides they could use to check their progress or measure their results. Jordan elucidates this point:

No one really knew, in 1934 [when the Arboretum first begun] how to restore a prairie, a maple forest, or a freshwater marsh, and not surprisingly, the results were uneven. All of the Arboretum's restored communities were defective in some way. ... It was not until Ted Sperry, the young ecologist hired to supervise restoration of the prairie, had completed several acres of prairie plantings, only to discover that they were being overwhelmed by weedy, mostly exotic species, that he and John Curtis began a series of experimental burns in the prairie plantings. The results published in 1948, clearly demonstrated the value of fire as a tool for prairie restoration.⁷⁶

Jordan is demonstrating here that because restoration is a relatively new field, a number of important advances in ecological restoration came through trial and error. They were often done with limited ecological knowledge by today's standards and the individuals carrying out the work did not have formal certification or degrees of any sort in restoration. Yet their contributions are remarkable as they set the stage for upcoming generations of restorationists.

Higgs goes even further than I do, regarding scientific knowledge not only as insufficient for restoration, but encompassing a potentially harmful attitude. He claims

⁷⁶ Jordan, *The Sunflower Forest*, pp. 79-80.

science can interfere with the work of restorationists by displacing other kinds of knowledge and making abstractions or archetypes appear real.⁷⁷ I do not interpret Higgs as completely dismissing scientific knowledge and I certainly believe it is important: an important but insufficient knowledge for restoration. Although I do not agree with his interpretation whole heartedly, I do agree with the sentiment behind his implied question: [Why is] someone with practical knowledge seldom regarded as an expert?⁷⁸ Higgs' question serves to promote the normative value of local and traditional knowledge, which he does not see being adequately appreciated by scientists and lay citizens alike.

Now that we have a better understanding of ecological restoration and there have been numerous restoration projects throughout the United States and the world in various ecosystems, restorationists should have little difficulty finding information about restoration procedures and experiences. Information about general and local ecology can be found at most libraries and bookstores and of course through internet data searches and online journals. With the considerable amount of general and specific information accessible to the public, there is no reason why someone planning and participating in restoration should not have enough information to sensibly carry out his or her project.

Nonetheless, from my experience with courses in biology and natural resources at the college level, sometimes the most appropriate and focused information is not what is offered in a general lecture, or even an upper-level seminar or field work based course. Guided independent study often provides the most complete understanding of

⁷⁷ Higgs, *Nature by Design*, p. 201.

⁷⁸ *Ibid.*, p. 196.

the area focused on in the research. Also, not many colleges offer classes focused on restoration ecology, and if they are offered, they are infrequent and sometimes difficult to enroll in because of prerequisites or caps on the number of students allowed to enroll. As a result, I suggest that people who are goal and project focused, rather than pursuing a career in ecology or restoration, may be better off skipping the formal coursework and doing in-depth independent research. If professionals who have training, experience, or information on restoration are accessible, it would also be helpful to contact them for their input and guidance. Good places to locate them include colleges, state or national parks departments, private companies and nongovernmental organizations such as Society for Ecological Restoration.

Some skills, however, may require formal training and even certification. Whether someone preparing to do restoration needs formalized training and certification largely depends on what kind of restoration they are doing and the approach they are taking. The most obvious technique one would need proper training in is carrying out a controlled fire. Due to issues of safety and liability, as well as concerns for the success of the project, anyone partaking in a controlled fire as part of a restoration project should be properly trained and attain any necessary certification as required by insurers and the local, state, and national governments. Controlled burns are typically used in prairie restoration, but any other kind of training and certification mandated by the government, such as dive or forestry certification, should be attained before proceeding with the restoration project. The certification and understanding of government restrictions should be kept current as these requirements are liable to change from year to year.

Just as important as knowing the ecology and having certification in proper techniques for land management is knowing the local and regional development plans. Someone involved in the restoration project should be informed on what kind of short-term as well as long-term plans are being forwarded for the area where the restoration is to take place as well as the surrounding area. This knowledge will allow restorationists to make an informed decision as to what scale they are working with, how intense the restoration should be, or even if they should proceed with the project. Knowing ahead of time what local and regional development plans are in the works will help reduce the chances that one year's restoration project site is another year's strip mall development. It may also set into motion actions to preserve an area as a natural park, reserve, or encourage individual or community investment in the area. Having someone with this knowledge of future land use seems obvious in metropolitan areas where development is incessant. But according to the 2000 census, the fastest developing region in the United States is the west.⁷⁹ This area includes less developed arid regions and previously expansive landholdings of private owners. Even areas that previously seemed like they were in the middle of nowhere are now experiencing pressure to develop into more human intensive land uses. Therefore, every restoration project should include at least one individual who is well informed on these plans and who contributes their knowledge to the planning process of the restoration project.

⁷⁹ U.S. Census Bureau News, "Largest Census-to-Census Population Increase in U.S. History As Every State Gains, Census Bureau Reports," http://www.census.gov/PressRelease/www/releases/archives/census_2000/000718.html. "During the past decade, the fastest-growing region was the West at 19.7 percent.... The fastest growing states in the nation were all located in the West: Nevada (66.3 percent), Arizona (40.0 percent), Colorado (30.6 percent), Utah (29.6 percent), and Idaho (28.5 percent). California recorded the largest numeric increase of any state, 4.1 million people."

Community Considerations

Practical concerns about who is involved in restoration are very straightforward, and have been the first thing most restorationists I have spoken with have considered in determining who they should have in their restoration group.⁸⁰ Still, they do feel it is important to get community involvement to promote long-term success, not only for the project at hand, but for restoration in general and the environment as a whole.

There are many layers to the reasons why community involvement is important. One reason is that each restoration represents the ecological restoration paradigm as a whole. I believe restoration requires support from the local community to be continuously successful. To earn this support the restoration must take local influences, local concerns, and local goals into consideration. The best way to incorporate all of this is by having a number of local residents involved in the restoration from the earliest stages through the assessment of the project. Ideally the restoration will be carried out as a local or regional project.

Admittedly, *local* and *community* are vague terms that I do not clearly define. I will not say where local ends, whether it is a certain distance, the boundaries of a township or county, or even a separation by ecosystem type. I do not want to restrict groupings by these arbitrary categories because local should be determined by the group itself. However, local is not the national level or groups of people who come to the area only to work on the restoration and then leave. Local requires commitment to the area and the people residing in it. In the model of restoration, local means being close

⁸⁰ I am including here my personal experiences working with restorationists at Lewisville Lake Environmental Learning Area, conversations with restorationists at the Texas Society for Ecological Restoration Conference in 2004, and an informal survey to a number of those attendees from which I received 5 responses from the 22 inquiries emailed.

enough to the project site to make regular trips without incurring a high personal cost or time burden. I anticipate the area considered part of a community will be impacted by the population density. For example, in a high density area, the community may extend only a few city blocks in any given direction, whereas in an area of low population it may be a radius of twenty miles or more.

In addition to making sure a significant number of participants in the restoration project are local residents who have a long-term vested interest in the well-being and thus the success of the area, I also encourage people of all ages to get involved in restoration. As mentioned in chapter 2, the value of restoration is not only the value of the restored land, but possibly the value of a strong community. A community is composed of people from all walks of life. Thus, to get the value that is possible from restoration, all efforts should be made to include people who are young, possibly as young as kindergarten age, and older adults. Men and women of all classes and education levels should also be encouraged to not only get involve in the work of restoration but the planning and long-term goal setting.

My experience with outdoor activities whether it be recreation or land management efforts indicates that young middle-class adults with some education beyond high school are the most eager to get involved. Recruiting them is the least challenging. However, more effort should be put into getting families and older adults involved.

Of course, restoration can often end up being long and strenuous work, so there will be some tradeoffs involved with a mixed restoration team. Large projects may need to take place over the course of several days or weeks. Some people may not be able

to stay out all day, or may need frequent breaks. Others may be in a better position to provide support services such as transportation or distribute water and snacks. Others who have a great deal of knowledge of local influence or have connections with government or other agencies may contribute primarily on planning and evaluating the restoration. Hence, a coordinated effort will be necessary so that everyone who wants to be involved can do so.

I promote getting children involved in restoration for a number of reasons. Clearly, ecological restoration provides a hands-on approach, which tends to have a lasting impact on children. Children learn more about the natural world, their environment, by working with it than by reading about it or hearing a lecture on it. They can feel the soil, seeds, and water, hear the birds and rustling of leaves, and observe the changes that they are helping to initiate. Simultaneously, working with adults, especially their parents or guardians, provides a great opportunity to see adults follow through with the lessons they often recite to them. Ecological restoration is one way of instilling values, particularly values of care and reverence for the environment, by literally performing what is valuable. In addition to all of the ways children can benefit from participation in ecological restoration, adults and the whole group can benefit by having the energy, excitement, and playfulness children bring to restoration. They should be encouraged to have fun with it, and in the meantime adults will also learn to have fun with their restoration effort.

As I suggested in chapter 2, making restoration fun benefits the participants by making the effort less drudgery and more interesting. By encouraging an atmosphere of playfulness, the practice of restoration itself benefits because participants are less likely

to get worn out quickly and more likely to continue their involvement in restoration as well as conservation and preservation. Doing good work that also makes one feel good contributes to the continuation of the work, and does not diminish the importance or value of the work being done.

Whether considered part of initiation, ritual, or simply a desire to bring in new people to the community based restoration, I suggest inviting new people to participate in each restoration project. It is always easy to recruit people you know have done something similar before, people who are clearly interested. Nonetheless, it is not only a nice gesture indicating inclusion to invite people who have never participated in restoration before to join in, but also critical for keeping restoration, and in the cases of community based restoration, local knowledge, active and uninterrupted. Knowledge of the natural world, ecological knowledge, is meant to be shared under the restoration paradigm. Every person is a member and citizen of the natural world and he or she should be able to fully participate as an aware member and citizen. By inviting new people to participate in restoration we move beyond giving this concept lip service to giving it manifest meaning. Most people who genuinely want to participate in restoration should be able to do so in some way. Ecological restoration should not be relegated to scientists, natural resource managers, and landscape architects.

While restorationists I have spoken with have pointed to both benefits and drawbacks of incorporating a primarily volunteer force into their restoration projects, I strongly advocate volunteer-based restoration projects. One of the major reasons why I support volunteers as a critical part of the restoration includes their tendency to be local to the community where the restoration is occurring. As a result they have more at stake

and generally feel a stronger connection to the area and the work they do. Also, the very fact that volunteers work toward the goals of restoration without monetary compensation indicates their support for the project and their care for the natural world. It makes no difference if they are acting from duty, habit, complete altruism, or the desire to gain something for themselves in the meantime. The fact is that they want to be a part of the restoration and are willing to do so with some sacrifice in time and energy. In part because of this willingness and desire to accomplish the restoration goals, some restorationists have indicated that they actually find their volunteers more motivated and enthusiastic than paid staff.⁸¹ Volunteers want to feel like they are making an important contribution, that their work is valuable. When they understand the significance of their involvement, they are more likely to see the project through to completion of the first round, and will possibly find themselves committed to the continued wellbeing of the restored area. Furthermore, because volunteers are not getting paid, they actually may feel more at ease to have fun with the project even if that means taking longer to complete it. They can dance and gossip, and enjoy the view without the kind of stress, restrictions, and deadlines paid workers experience. They do not have to worry about a hard driving supervisor, because supervisors of volunteers, even if they themselves are being paid, are happy to have the volunteers working with them and less likely to push them to the point where they would walk out.

As I suggested earlier, volunteer participants do present some drawbacks as compared with paid workers. Volunteers are not usually legally responsible for their actions. They do not have insurance for the project. Having a paid worker usually solves this problem, as they are legally responsible for their actions and the company or

⁸¹ Three out of the five restorationists responding to my informal survey noted this observation.

organization they are working with typically has some insurance for human injuries and destruction of property.

Paid personnel are more dependable because their income depends on them putting in the time they have committed to. Volunteers will show up and stay as long as the restoration does not conflict with any other commitment or emergency. Volunteers are also less likely to make a firm commitment. From a personal experience I can relate to the tendency of making *tentative* plans to participate in a restoration project. After putting in a long week at school and work, I do not want to tie myself to a commitment of a weekend of hard labor. If I feel up to it, I will participate; but my well-being and other interests and obligations also factor into my decision to be involved.

With volunteers the project leaders may not know how many people to expect and what kind of skills or dedication they have. In contrast, a paid worker is more apt to have a background check and an evaluation of his or her skills. A paid worker may be required to gain certain formal training before getting the go ahead to work as an official employee on the project.

I am not altogether opposed to having paid staff included in ecological restoration projects. Sometimes there is no other way around it if the restoration is being headed up by an agency or NGO. My concern is that restoration work should not be initiated solely because of a monetary incentive. We must consciously steer clear of opportunistic individuals and agencies who would not be concerned with ecological restoration if they were not going to make a profit.

Restoration's Political Component

Another consideration in deciding who should be involved and how the participation in restoration should be organized was raised by Andrew Light and Eric Higgs in their article "The Politics of Ecological Restoration."⁸² They argue that while restoration (as a process) is not inherently democratic, it has an "inherent democratic *potential* within its inherently political domain."⁸³ In other words, restoration can take place without a democratic process. But it has the potential to be democratic and provide an additional positive value that other approaches to the natural world such as preservation do not offer. They argue, and I concur, that any approach to interacting with or managing the natural world has a political dimension in the sense that it is regulated politically and incorporates political, social and ethical values.

Restoration, unlike preservation, does not occur independent of human assistance. Light and Higgs recognize this difference and a second way in which restoration is distinctive from preservation. Restoration creates value. In contrast, preservation, while it may preserve value, does not produce new value. They point out that one type of value created from restoration is the positive value of creating and/or strengthening community, especially within the context of democratic organization. Clearly I agree with their argument as it includes the spirit of my theory and incorporates my own push for involvement by a variety of people who have a local connection to the region and who possess diverse skills and knowledge.

I appreciate their restraint in acknowledging the potential for restoration to bring forth values of community and democracy. Restoration does not automatically entail the

⁸² Andrew Light and Eric Higgs, "The Politics of Ecological Restoration," *Environmental Ethics* 18 (1996): 227-47.

⁸³ *Ibid.*, p. 234.

plethora of values I set forth in chapter 2, nor the democratic system as proposed by Light and Higgs. As seen in chapter 3, restoration has been carried out undemocratically. Some of the undemocratic restorations may appear adequate from an ecological perspective. They may have even met all of their project goals. Nevertheless, even if they have been otherwise successful, they have lost the opportunity to create even greater value.

Examples of undemocratic restorations, such as corporate and national restorations, are explored by Light and Higgs. Regarding national scale restorations, they go on to state that

The hope for the preservation of participation as a part of restorations is best placed in local projects. This is not to say we favor naïve localism on all environmental questions, but only that this particular struggle for the character of restoration is best fought on individual home fronts, before the fight can be taken to larger arenas.⁸⁴

This statement elucidates one of my reasons for insisting that the process of restoration remain in the hands of local community members. People can actually feel like they have a relationship with the natural world as an integral part of it, a member of the ecological world.

In response to corporate restorations, their aversion is even stronger. Light and Higgs point out that

When corporations appropriate restorations to serve only their interests in increasing their positive image with respect to their relationship with nature, restoration is turned into a means to satisfy a capital end and little else.⁸⁵

I agree with their point that both commodified and national-level restorations keep many people off the stage of the natural world, treating them instead as visitors to some

⁸⁴ Ibid., pp. 245-246.

⁸⁵ Ibid., p. 240.

hyperreality (think Busch Gardens) or violators of nature's needs (think large restoration projects in the Canadian national parks and Florida's Everglades). Corporate and nationally managed restorations are not entirely abysmal considering the alternatives we are sometimes faced with. I would much rather see a corporate restoration, for instance, than a huge expanse of Bermuda grass or worse, a toxic brownfield. Thus, I refuse to go so far as to make a claim that they should never be pursued. Nonetheless, they typically lose the opportunity to express restoration's inherently democratic potential. Corporate and nationally managed restorations certainly should not become the exemplary paradigm of ecological restoration.

Conclusion

What kind of people participate in ecological restoration is just as important as the method of restoration or the product of the restored area. Participation includes direct work on the land and water as well as research, planning, support services and artistic expression of the project. My ideal team of participants includes a diverse group of local volunteers. Each individual should play to their strengths, participate in a democratic process, and enjoy their work toward a greater community goal. While a formal education in ecology and restoration is not required, knowledge of general and local ecology certainly is required. Other types of knowledge, including a variety of types of local knowledge is just as important. Due to their endemic nature fewer people will be able to convey the local wisdom to the restorationists. These people should be respected as local experts.

Although restoration has a democratic potential, it is up to the participants to ensure that that potential becomes expressed. Doing so requires keeping profiteers out of restoration as much as possible. Corporate and national restorations can sometimes offer an alternative to neglected or mismanaged land. However, they are not democratic in the same way community organized restorations can be. They even risk being inherently undemocratic. As a result, they lose the opportunity to create additional positive value.

FINAL REFLECTIONS

Ecological restoration offers a powerful tool for initiating ecological repair and working *with* the natural world to carry it through. It also provides a unique opportunity to develop more personal relationships with each other and the natural world, thus moving us a step closer to truly acting on the ideal set forth by Leopold of becoming members of a biotic community. Elliot and Katz are justified in expressing concerns and reservations with ecological restoration, but fail to make enough of a case against ecological restoration to bring it to a halt. Some of their underlying assumptions are misguided. By sorting through these assumptions I see them agreeing with many of my own hesitations about commodified restoration, restoration projects as a means of justifying destructive development, and as replacement for natural ecosystems. Light, Rolston, and Jordan present good arguments about the importance of ecological restoration and what is possible through restoration.

A number of fundamental questions within the area of environmental philosophy continue to daunt the debate. Responses to questions regarding value and metaphysical reality of the natural world continue to be widely disparate. My work was unable to cover all of these questions in depth as a result of limits on both space and time. As a result, I offer my position and cursory arguments for the topics of nature/culture dualism and intrinsic value as they relate to ecological restoration.

Restoration can be viewed in two different, yet related ways. One is the product, the outcome that results from restoration work. The other is the process or practice of restoration. I chose to focus primarily on the latter because I saw a tremendous opportunity for development and assumptions that were left open regarding the practice,

while a lot more progress in ecological research has gone into determining the best product. As a result, I have taken a broad approach to the idea of ethics, which includes social, political, aesthetic, and other value considerations.

Instrumental and subjective intrinsic value can be both attributed to and received from the practice of restoration in a variety of forms. But, because ecological restoration works with ecosystems that do not objectively exist, it is not possible for them to have objective intrinsic value. Some of the most important values that the practice of restoration can impart are those that environmental philosophers and scientists have both shied away from. Values of community, initiation into the natural world, and spirituality round out our understanding of ourselves, and our environment. This understanding is crucial for restoration in addition to preservation and conservation of the natural world.

Community is one of the most important elements of involvement in ecological restoration. The sense of community possible in volunteer based restorations is a major reason why I promote them as the ideal. I understand and support professional restorations to an extent, but encourage professionals to work with community members in a way that acknowledges and respects their unique local knowledge.

There are quite a few other questions that need to be addressed regarding ecological restoration. They include, more depth on the topic of good versus bad restorations, how can restoration be incorporated into environmental justice, how does language frame the topic of restoration from scientific, political, and social standpoints, and how should ecological restoration be employed in policies? These questions all deserve further attention. However, they will have to be answered at another time, and

perhaps by other philosophers, as I am limited here in the breadth of my examination of ecological restoration.

POSTSCRIPT

Poetry celebrating the Prairie Restoration at LLELA February 2004

HAPPY SEED STOMP

BUZZ! BUZZ! BUZZ!

Y A W N

Early alarm
Snoozing – not an option
Activities more important than a stuffy class
Occur TODAY!!!!

Load seeds, check
gather tools, check
verify bus, check
Damn! No time for a cup-a-joe
Wait!

Restroom rush

Drive...
On the road with a sense of purpose

Inform	understand What, Why, How
Inspire	hard work
Destroy	enemy invasives
Discover	nuanced nature
Hope	buffalo are curious
Help!	sore arms, sunburnt faces
Restore	prairie
Renew	ecosystem
Build	community
Believe	vision

With so much contemplation...preparation, and anticipation
our day finally upon us
better than expected
perfect weather
clearing the land
lacking fire as friend

fun fluffy Lil' Blue floating from our fingers
performing: "The Happy Seed Stomp"

twirling toes over freshly raked soil
round and round
and doe see doe

We seeded the road as well as the barren "prairie"
Making our footprints serve as saucers for seed
Apologizing that it was made to wait a century plus
Delighted we could be the ones involved
Many of us will never see the prairie in bloom
Mature seed heads swooning in Texas twists of wind
Relegated to our imagination
But to have performed the task
learned the land
made new friends
strengthened bonds with old

Native
Living
Fresh
Vibrant
PRAIRIE

It is enough to know

Together we will grow

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