

## Sustainability in Outdoor Education: Rethinking Root Metaphors

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*Note from Guest Editor Pramod Parajuli, Ph.D.: Given the compelling nature of this topic, we decided to facilitate a deeper discussion among a larger group of professionals in outdoor education. Following the original submission are responses from several reviewers, all professionals in the field of outdoor education. The original authors then provide a rejoinder to the reviewers' comments "Metaphorically Speaking." Readers are encouraged to read all three sections as a continuum in order to get a sense of this very important debate.*

### Abstract

Recognizing that behavior comes not only from understanding, but also from attitudes cultivated in outdoor settings that elicit visceral feelings toward nature, outdoor educators have unique opportunities to make sustainability comprehensive, accessible, and relevant. Yet the principal metaphor underlying outdoor education in general, and the Leave No Trace (LNT) program in particular, may be counterproductive to fostering environmentally and socially responsible behavior. We attribute this possibility to the prevailing "humans as apart from nature" metaphor underpinning LNT and recommend it be replaced by a "humans as a part of nature" metaphor grounded in heightened ecological understanding. We contrast the tenets of LNT with those of *As Sustainable As Possible* and *Conscious Impact Living*, and with the work of ecologists and critical educators to illustrate the practical implications of our point of view. We conclude by suggesting that outdoor educators are well-suited to lead the proposed linguistic, metaphorical, and pedagogical shifts towards better encompass humankind's relationships in the natural world. In so doing, we hope to encourage dialogue about the unique opportunities outdoor educators have to shape an ecologically literate citizenry prepared to make environmentally responsible choices in all dimensions of their lives.

**Keywords:** framing, Leave No Trace, metaphor, outdoor education, sustainability education

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## **Introduction**

Outdoor experiences are critical in fostering environmental commitment (Chawla, 1998) and environmental concern (Hanna, 1995; Teisl and O'Brien, 2003). While outdoor educators may recognize a responsibility to cultivate environmental ethics that promote these ends, the ability to foster more comprehensive sustainability may be impeded by common practice. Based on our combined experience as outdoor educators and researchers, here we consider three questions: Is outdoor education inadvertently furthering a fundamental disconnect between what takes place in outdoor settings and what takes place in people's everyday lives? Is outdoor education failing to promote basic ecological literacy and undermining sustainability education more broadly? If so, how can we best leverage outdoor learning experiences for sustainability education?

Researchers suggest that connection to place is an essential element in coming to know and care for the environment (Vaske & Kobrin, 2001; Williams & Vaske, 2001). Outdoor educators often attempt to facilitate a connection to wilderness and places far removed from home (Baker, 2005; Martin & Thomas, 2000), and while the transformative power of a wilderness experience is an effective entrée into environmental ethics (Hammit, Freimund, Watson, Brod, & Monz, 1996; Mazze, 2006), studies have not conclusively determined that participants apply environmental ethics to behaviors in their home environs when their outdoor education experience has concluded (Gillet, Thomas, Skok, & McLaughlin, 1991; Hanna, 1995). We suggest that much of this wilderness—home disconnect is rooted in a dominant cultural perception that is reinforced in the language and metaphor of outdoor education. Furthermore, we suggest that language frames, and the metaphors upon which they are based, play a role in defining our relationship with the natural world in a way that is fundamentally out of keeping

with a basic understanding of ecology. We provide a frame of reference for rethinking this base metaphor, followed by a proposal for language that, from an ecological perspective, more accurately represents people's relationships in natural systems. This shift is particularly important for sustainability educators because metaphor, reinforced in the prevailing instructional language, subverts the powerful positive effects of even the best outdoor experiences that could otherwise be compelling tools for sustainability education.

Specifically, in this essay we will examine the power of metaphor, consider how traditional metaphors are used in outdoor education, and consider the impacts of these metaphors for sustainability. Next we will consider a new metaphor for outdoor education discourse along with its implications, and suggest a new language that is in keeping with this metaphor. Finally we will discuss how this new language, in combination with the powerful attributes of outdoor education, can enhance sustainability learning.

### **The Power of Metaphor**

Rethinking the root metaphor in outdoor education is one way to help resolve the gap between ethics in the field and ethics at home. According to Lakoff, "we may not always know it, but we think in metaphor. A large proportion of our most commonplace thoughts make use of an extensive, but unconscious, system of metaphorical concepts" (1995, p. 177). Schema theory (Anderson, Reynolds, Schallert, & Goetz, 1977) suggests that one word or fact activates a larger mental picture, or metaphor. This is why facts alone do not resonate; they can be assimilated into the brain only if there is a context to make sense out of them. Further, neural research supports these ideas, indicating that actual physical synapses in our brains form by our learning via language, and that this learning happens more readily when ideas fit with what is already

understood (Bransford, Brown & Cocking, 2000). For example, the language commonly used to describe an argument frames it such that the dominant sociocultural construct of war is the base metaphor: “His claims are indefensible. He attacked every weak point in my argument. His criticisms were right on target. He shot down all my arguments” (Lakoff & Johnson, 1980, p. 4). Lakoff and Johnson ask how we might act differently if our metaphor for argument was instead a cooperative dance, judged on aesthetics and performance. In the same way that traditional language implies that argument equals war, the predominant discourse of outdoor education suggests that humans equal non-nature. The question then becomes, how might we act differently if our base metaphor included humans as a part of nature?

We reason that our ability to apply a comprehensive ecological framework to our behaviors in both frontcountry and backcountry settings will be enhanced through the use of this new base metaphor. Grounding the powerful combination of visceral and affective connections made in backcountry settings in a “humans as a part of nature” metaphor will be a more effective and persistent means of sustainability education. We believe that if we can work from, and reinforce, a metaphor that is consonant with ecological reality, we may be able to explore sustainability in ways that are applicable to all contexts of program participants’ lives.

### **Traditional Metaphors in Outdoor Education: The LNT Example**

Leave No Trace (LNT), a widely recognized set of guidelines for outdoor recreation behavior, provides an example of the underlying cultural metaphor that both defines and reflects humankind’s relationship with the natural world. The LNT message is internationally known and LNT has been effective in reducing immediate visual human impacts in the backcountry for nearly thirty years (Daniels & Marion, 2005). More than 250,000 people have been formally

educated in LNT skills and ethics trainings, and an estimated 10 million people a year receive an impression of LNT [i.e., exposure to the company's logo, sign, booklet, or receiving some sort of official message] (Rose, 2006). Simon & Alagona suggest that "practicing LNT has become a part of [one's] identity as an educated outdoor enthusiast" (2009, p. 25). The program is so popular that it has been adopted by most well known wilderness and outdoor education organizations in the U.S., including the Wilderness Education Association, the National Outdoor Leadership School, Outward Bound, the Appalachian Mountain Club, and the Boy Scouts of America. Clearly, the LNT program resonates with many audiences, and as such it is not unreasonable to conclude that it plays a major role in influencing how people think about wilderness and backcountry experiences, as well as how they conceptualize their relationship with nature in a more general way.

The LNT program is dedicated to "responsible enjoyment and active stewardship by all people, worldwide"(Leave No Trace, 2008), and lists the following seven principles:

**1. Plan Ahead and Prepare**

Know the regulations and special concerns for the area you'll visit. Prepare for extreme weather, hazards, and emergencies. Schedule your trip to avoid times of high use. Visit in small groups when possible. Consider splitting larger groups into smaller groups. Repackage food to minimize waste. Use a map and compass to eliminate the use of marking paint, rock cairns or flagging.

**2. Travel and Camp on Durable Surfaces**

Durable surfaces include established trails and campsites, rock, gravel, dry grasses or snow. Protect riparian areas by camping at least 200 feet from lakes and streams. Good campsites are found, not made. Altering a site is not necessary.

In popular areas: Concentrate use on existing trails and campsites. Walk single file in the middle of the trail, even when wet or muddy. Keep campsites small. Focus activity in areas where vegetation is absent. In pristine areas, disperse use to prevent the creation of campsites and trails. Avoid places where impacts are just beginning.

### 3. Dispose of Waste Properly

Pack it in, pack it out. Inspect your campsite and rest areas for trash or spilled foods. Pack out all trash, leftover food, and litter. Deposit solid human waste in cat holes dug 6 to 8 inches deep at least 200 feet from water, camp, and trails. Cover and disguise the cat hole when finished. Pack out toilet paper and hygiene products. To wash yourself or your dishes, carry water 200 feet away from streams or lakes and use small amounts of biodegradable soap. Scatter strained dishwater.

### 4. Leave What You Find

Preserve the past: examine, but do not touch, cultural or historic structures and artifacts. Leave rocks, plants and other natural objects as you find them. Avoid introducing or transporting non-native species. Do not build structures, furniture, or dig trenches.

### 5. Minimize Campfire Impacts

Campfires can cause lasting impacts to the backcountry. Use a lightweight stove for cooking and enjoy a candle lantern for light. Where fires are permitted, use established fire rings, fire pans, or mound fires. Keep fires small. Only use sticks

from the ground that can be broken by hand. Burn all wood and coals to ash, put out campfires completely, and then scatter cool ashes.

## 6. Respect Wildlife

Observe wildlife from a distance. Do not follow or approach them. Never feed animals. Feeding wildlife damages their health, alters natural behaviors, and exposes them to predators and other dangers. Protect wildlife and your food by storing rations and trash securely. Control pets at all times, or leave them at home. Avoid wildlife during sensitive times: mating, nesting, raising young, or winter.

## 7. Be Considerate of Other Visitors

Respect other visitors and protect the quality of their experience. Be courteous. Yield to other users on the trail. Step to the downhill side of the trail when encountering pack stock. Take breaks and camp away from trails and other visitors. Let nature's sounds prevail. Avoid loud voices and noises.

These principles allow us to reflect on how LNT presents human relationships with nature. An underlying metaphor of these core values is that humans are *apart from* rather than *a part of* nature and the evolution of this metaphor can be traced back at least as far as the Western European colonists that settled North America. Equipped with a mindset that saw nature as a storehouse of raw materials that became valuable only when extracted for human use, the pioneers plowed their way westward imbued with the self-confidence that nature was theirs for the taking. Reinforced by a Judeo-Christian tradition that saw wild lands as valuable only to the

extent they were cultivated for human purposes (White, 1967), and fueled by the logic of Adam Smith's "invisible hand," the pioneers set out to pursue their individual human self-interests. Nature was, in their thinking, "outside" of them. More than a century later, similar thinking was reflected and codified in the Wilderness Act of 1964 when humans were characterized as "visitors" who would not remain in wilderness. The idea of "human apart" has thus evolved throughout the history of the Western industrialized world. Figure 1 contextualizes LNT's seven principles in terms of how they function within the larger humans = non-nature metaphor. Yet, when we scrutinize these principles more closely in the context of how ecology works, and the ways humans connect with the landscape, the problems inherent in this underlying metaphor become clear.

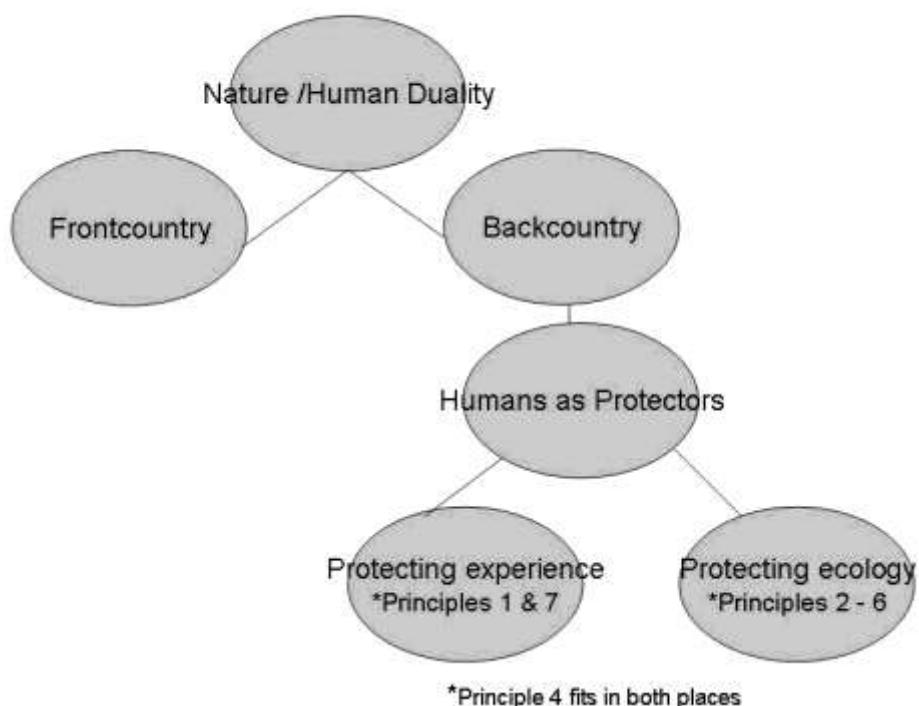


Figure 1. Contextualizing LNT within the Human Nature Duality

## **Impacts of the Traditional Metaphor**

The consistency with which we see nature as “other,” a separate place that is not a part of the daily, embedded experiences of our lives, has implications for the way in which we understand our roles. We tend to see wild lands differently from other places. In wild lands there seems to be two different ways that we are to see our role as protectors: we are to protect the physical integrity of the backcountry; and the experience of the backcountry user. This approach stems from the initial human-nature divide depicted in Figure 1.

In terms of protecting the human experience, Principle #1 encourages us to be prepared, and to make sure we have what we need for comfort and safety. Implicit in this message is that if we do not prepare ourselves, either nature will suffer from our abuse or we will suffer at the hands of the natural world. Principle #7 encourages us to preserve the wilderness experience by distancing ourselves from other backcountry users. These principles reinforce the idea that humans are not a part of nature and thus need to behave in specific ways while there.

The other LNT principles intend to protect the physical integrity of the place we are visiting, but therein lies a bigger problem. Ecology does not function in pieces or recognize this backcountry-frontcountry distinction. This divided conception of backcountry-frontcountry and of humans-nature gives primacy to immediate nature and backcountry behaviors, unintentionally making more complex individual and societal frontcountry behaviors seem less significant (Corbett, 2006). Yet, as Muir reminds us: “When we try and pick out anything by itself, we find it hitched to everything else in the universe” (Muir, 1911, p. 11). This ecological insight renders our initial human-nature duality and our role as protectors, inherently problematic.

Further examination of specific principles illustrates some of these difficulties. For example, Principle #3 tells us to dispose of waste properly. In the backcountry this usually

means, “pack it in, pack it out.” But what about the larger picture? Once we get our waste home, shall we throw it away? Ecology tells us there is no “away,” but that our waste products will reside somewhere, and affect additional elements in our ecosystem. Clearly some environments provide better options than others for decomposition of matter, and it would be irresponsible to “litter” in the backcountry. The problem is, that by suggesting that we take great care in backcountry practices without regard for frontcountry consequences, we undermine the ecological whole. Aside from issues pertaining to waste disposal, a more complete understanding of ecology nested in systems thinking would suggest we also ask the following questions: are the coffee grinds that we are so carefully carrying in and out of the backcountry shade-grown to prevent habitat destruction for songbirds? Was this coffee a product of a local cooperative of coffee growers using organic sustainable agricultural practices, or of a multi-national corporation exploiting the land and people of other countries for a cut rate? By what means of transportation did the coffee arrive here? What non-coffee materials are needed in the production and consumption processes? Are coffee grounds better off being composted locally or should they be shipped to a landfill for burial by heavy equipment? Similarly, Principle #5 tells us we should cook on a stove rather than a campfire. Again, a deeper understanding of ecology would prompt the question: Is the imported fossil fuel-based propane that we are packing in more sustainable than using local dead and downed wood in the area? There are some settings where this measure would be impractical or even harmful, but blanket statements encouraging the use of fossil fuels remain problematic. In fact, a broad understanding of the ecology would prompt even more questions such as: what are the ramifications of my choice of transportation to the backcountry, my choices of gear in terms of the materials used, the process of their construction, and the manner of their transportation? What about my food selection?

Because LNT's message is not grounded in comprehensive ecological understanding and "does not address exploitative labor conditions in less developed nations, domestic landfills, chemical pollution resulting from the manufacturing process, or other social and ecological consequences of outdoor recreation" (Simon & Alagona, 2009, p. 27-28), it serves to reinforce devastating social and ecological patterns. The questions above inform important philosophical and behavioral shifts applicable in a variety of settings regardless of activity or location and thus it is incumbent upon outdoor educators to dissolve the frontcountry-backcountry divide and work towards a more ecologically complete analysis of sustainable behavior.

That we are expected to leave no trace or footprint when we "visit" nature may also inhibit our ability to connect with nature in important and meaningful ways. One outdoor instructor suggests:

The next time you watch someone give an LNT talk, put yourself in the novice's shoes and see how often it sounds like 'we humans are bad, don't touch that, don't pick that up, we need to tiptoe around the woods because we don't really belong there' (Moskowitz & Ottey, 2006, p. 17)

In this discourse, protection connotes the absence of humans, implying that human engagement with nature should be limited. This idea is also exemplified in Principle #4, which discourages collecting and gathering despite the fact that such activities have been shown to be integral to forming connections with nature (Finch, 2004). In fact, ecologist Aldo Leopold identified collection of physical objects, or a trophy-seeking experience, as critical to recreation. While recognizing that some things are more resilient to human collection, he called trophy gathering "the prerogative of youth...and nothing to be apologized for" (1949, p. 177). These trophies- a seashell, a smooth rock, a chunk of driftwood- easily serve as icons that help bring memories of the natural world home with us, extending the effects of the rejuvenation process we get from

communing with nature. Discouraging these activities may counter our own biophilic tendencies such that long-term connection to the land may be obstructed.

Several years ago, at a conference of nature center professionals, Finch and Pyle (personal communication, August 13, 2004) began a session by asking the group to think about what brought them to their positions as professional nature center educators and administrators. Most attendees shared stories of their childhood, special places and times in which they were free to explore, romp through and modify landscapes, pick, collect, and get dirty. One participant shared a story of her worm infirmary in which she would use her father's old syringes (he was a doctor) to inject worms with Bactine. While this example may cause visceral feelings of aversion, consider that increasingly we are coming to understand that connecting to the natural world in these unstructured ways is important. Even Leopold's recollection of the fierce green fire dying in the eyes of the wolf he shot was a true turning point and led him from a utilitarian philosophy of nature to one that was inclusive and devoid of a human-nature split (Dunsky, Steinke & Shapiro, 2007). Yet all of these behaviors are incongruent with the protocols advocated by LNT philosophy and, perhaps more importantly, with its guiding metaphor. These types of experiences, though they run counter to LNT practices, oftentimes produce individuals and societies that are intimately connected with issues of ecology and conservation (Chawla, 1988, 1998). In such circumstances, LNT practices can have undesirable unintended consequences that may exacerbate a feeling of separateness from nature.

LNT principles provide a poignant example of why the dominant metaphor of humans as apart from nature needs to be rethought. Metaphors of nature as "other" or nature as "resource," that put humans in the role of users and protectors are no longer valuable, ethical, or sustainable. Addressing this disconnect is critical because it leads to "serious deficiencies in how students

understand the social dimensions of environmental problems" (Barry, 2010, 116). Consider Turner's observation that what must change is social in nature:

the positive-feedback system comprising overpopulation, urbanization, outrageously high standards of living, outrageously unjust distribution of basic goods; the conjunction of classical science, technology, the state, and market economics that supports the high standard of living; the endless presumptions concerning our rights, liberties, and privileges; and the utter absence of a spiritual life that might mitigate against these forms of greed. In short, the preservation of wild-ness, wilderness, and biodiversity requires a revolution against social pathology... (1994, p.181)

We believe that this revolution must begin with a new metaphor.

### A New Metaphor

A more useful root metaphor for a sustainability revolution would connote a holistic, integrated connection uniting people and the environment. It would attend to necessary social changes by examining the words we use and the underlying metaphors they activate. The question is not whether humans are *a part of* or *apart from* nature. We know that nature, a complex evolutionary system, includes humans, just as it includes all other life on earth. In fact, we know that humans are *of* nature. The question now becomes how do we assimilate this new guiding metaphor of ourselves *as* nature, and what might this metaphor actually look like in terms of both understanding and application? Ehrenfeld suggests that this is important because changing our root metaphor may provide a map:

Now, let me step off the diving board and plunge into deep waters by suggesting that learning, innovation, paradigm change, thinking out of the box, and so on, take place, first, by grabbing onto a metaphor that dissolves the problems that have stymied action. Then, if the actor is comfortable in the metaphor, she or he begins to look for rules that allow analysis, design, and practical action (2003, p. 2).

The metaphor of humans as part of nature does in fact dissolve many of our problems. With a more integrated perspective, we do not see nature *as* other, or nature *as* resource, but we see

nature *is us*. The role of humans as protectors shifts from that of policeman to citizen as we begin to realize that any damage to the biosphere as a result of our actions is damage to our own bodies. Interconnection is the cornerstone of this thinking, grounded in the ecosystem metaphor that also invokes notions of feedback loops, material cycles, and energy flows along with community, local sufficiency, and the value of diversity (Ehrenfeld, 2003). From this vantage point there can be no waste because all waste products of one life form are an energy source for another equally valuable life form, even when that life form is bacteria. Ecosystem as a guiding metaphor necessitates an awakening in terms of what we produce and consume and who or what then takes up the byproduct. And, it does this in every context in our lives.

The merging of all things into a system is a more complex process than just conceiving of humans *as* nature or biosphere *as* body. As Shepard expresses:

Ecological thinking requires a kind of vision across boundaries. The epidermis of the skin is ecologically like a pond surface or a forest soil, not a shell so much as a delicate interpenetration. It reveals the self ennobled and extended rather than threatened as part of the landscape and the ecosystem, because the beauty and complexity of nature are continuous with ourselves (1969, p. 2).

This paradigm shift, triggered by the changing of our base metaphor may provide an excellent foundation for an outdoor education language that would create a widely applicable environmental ethic.

### **A New Language**

Researchers widely acknowledge that changing behavior to a more sustainable form requires social pressures and conditions that go beyond simply providing information (McKenzie-Mohr and Smith, 1999), and we suggest that language has a vital role to play in this project. Language that sets an alternative metaphor can provide subtle and persistent social pressure. For example,

“rethink, refuse, reduce”(Webster, 2004, p. 3) awakens us to the shortcomings of the more common phrase “reduce, reuse, recycle” not only through inducing dissonance, but also by inviting us to conceive of our own role differently, highlighting the responsibility of consciousness in evaluating lifestyle choices. Similarly, terms like “disposable,” “throw away,” and “pack it out,” that activate the “humans as apart from” metaphor would be replaced with terms that tap a metaphor suggesting that humans are a part of nature, promoting a consideration of nutrient cycling. For example, labeling “disposal” alternatives in three different ways: “compost,” “recycle,” or “transfer to the landfill,” might clarify the ecological realities of matter cycling while encouraging an ethic that promotes a life cycle assessment of the products used. Similarly, natural resources as a term would be discouraged. This term, rooted in Western society’s “ceaseless attempts at finding new and more intensive uses of nature” and reflecting our exploitative and anthropocentric perspectives (Dustin, McAvoy and Schultz, 2002, p. 122), no longer fits. In addition, our retooled language would allow us to unveil some of the misconceptions that come with traditional phrasing. For example, survival of the fittest is often thought of as “the strongest survive” as opposed to a more realistic interpretation of a “symbiotic and interactive view of the history of life on earth”(Margulis & Sagan, 1986, p. 16). According to Margulis and Sagan, old notions of survival of the fittest:

dissolve before a new view of continual cooperation, strong interaction, and mutual dependence of life forms. Life did not take over the globe by combat, but by networking. Life forms multiplied and complexified by co-opting others, not just by killing them (p. 29).

Thus survival of the fit-ins is a better linguistic alternative that taps our larger humans = nature metaphor. How might our behaviors change if cooperation, a prevailing behavior when you are a part of something, replaced competition?

These seemingly small language shifts may be powerful and instructional because language both shapes and reflects our worldview. Lakoff warns us that cultivating new frames requires “going on the offense with your values and principles, repeating them over and over and over” and that “it must be done over a long period, planned in advance” (Lakoff, 2006, p. 31). Outdoor education may provide one compelling venue for this offensive to begin.

### **Implications For Sustainability in Outdoor Education**

The implementation of new metaphor and language in outdoor education requires new program practices that change the focus of students’ and recreationists’ immediate impacts on natural spaces, and invites questions and concerns for larger ecological and social systems. This is the purview of critical outdoor education “which attempts to escape the nature-culture dualism that dominates in western society by instead depicting the world as a unified system” (Thomas & Thomas, 2000). Critical outdoor education “examines outdoor recreation beliefs and practices in terms of whether they maintain or resist the dominant historical human nature relationship: one of exploitation” (Martin, 1999, p.465). In keeping with a critical perspective that sees humans as a part of nature, two newer programs provide alternative principles for educational and programmatic guidelines. Conscious Impact Living (CIL) suggests the following principles that can apply to both front and backcountry:

1. Live Simply
  2. Think globally and plan ahead
  3. Follow the precautionary principle
  4. Reduce, reuse, recycle, relearn
  5. Follow nature’s lead and blend into one’s surroundings
  6. Use appropriate technology and use technology appropriately
  7. Show respect and compassion for all forms of life
- (Moskowitz & Ottey, 2006)

In much the same way, *As Sustainable As Possible* (ASAP), in development at Northland College, recognizes issues of sustainability in outdoor education and offers ways to quantify impacts related to all the decisions that we make in participating in outdoor experiences, moving us from linear and fragmented dualistic thinking and behavior to more holistic and integrated thinking and behavior. These program guidelines, largely in keeping with our base ecosystem metaphor, call on us to be a part of a larger system and consider the impacts of our decisions in the broadest possible context; one which includes social and cultural factors that are so desperately in need of changing given sustainability as the goal.

Critical outdoor educators and programs like ASAP and CIL recognize the importance of closing the human/nature and backcountry/frontcountry divides. Our hope is to strengthen these efforts through the consistent use of language and metaphor that will reinforce a larger paradigm shift in outdoor education.

### **The Power of Outdoor Education for Sustainability**

Outdoor education often facilitates the reflexive moments that contribute to one's identity as an environmentally aware individual (Thomashow, 1995). This is not only due to the well-documented positive affective connections that are made in wilderness settings (Tiesl & O'Brien, 2003; Martin & Thomas, 2000; Williams & Vaske, 2001), but also because participants become more familiar with feedback loops that are normally obscured from view (Martin, 1999). Students pay attention to what they eat, what they don't eat, what and where they excrete, what they carry, and where they sleep. This heightened visceral awareness provides an experiential lesson in energy flows and material cycles in ways that indoor classrooms often cannot. A change in our language that honors such observations and experiences may reinforce these

compelling lessons. Thus, outdoor educators can aspire to the high standards of teaching scientifically based ecological concepts experientially, where students do not see human activity as being distinct from the natural world, and from which a broad-based understanding of sustainability can emerge. Ecology is not a discipline, but a perspective (Shepard, 1969), and at a time when human behavior is changing the very geochemical composition of the earth, we need to examine the metaphors we live by to develop a way of thinking about ourselves in a systems context that is ethical and sustainable in the long run.

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## Responses to “Rethinking Root Metaphors”

*From Nicole Apelian, PhD student (Cohort-5), Prescott College*

The authors argue that the replacement of current language in outdoor education will lead to a more holistic understanding of our place in nature. They examine the underlying etymology of Leave No Trace's (LNT) guidelines for outdoor recreation (Leave No Trace, 2008) in relation to the “humans apart from nature” metaphor. The idea of integrating the ‘frontcountry’ so that the idea of a holistic ecology is not lost once one leaves “the wilderness” is indeed important for fostering environmentally sound behavior.

I agree that current colonial-based metaphors must change in order to include humans as an integral part of nature, but would recommend focusing more on modeling rather than relying so heavily on language. I am not convinced that the language in these principles is the sole underlying problem. LNT's principles are important guidelines for being in nature in a considerate and safe fashion, especially for those who are inexperienced.

Perhaps what is needed is a rewording in line with the Conscious Impact Living (CIL) guidelines, but done so in a way that is clearly understandable to a person with little wilderness experience. As the authors point out, this combination must not use words that may bring up subconscious thoughts about nature as separate from self. There is an implication in LNT's principles that those who utilize land cannot be “stewards” of land, and LNT's guiding metaphor of “responsible enjoyment and active stewardship by all people, worldwide” (Leave No Trace, 2008) promotes colonialism in its very word-choice of ‘stewardship’. For instance, as the San of the Kalahari utilize the land they live on, who is to say the San, or similarly the Inuit of Northern Canada, are not responsible guardians? Indeed, most ‘pristine’ lands have, at some point, been managed by local or indigenous populations (Alcorn, 1981; Posey, 1985).

We need to be a part of nature rather than apart from nature, as that is, in fact, what we are. How do we foster relationship and connection to nature while not overburdening it? Does my son taking an elk skull home lead to an increased awareness of nature as he looks at that skull for years to come? Is the value of it being taken out of the woods greater than the value it has *in situ*, breaking LNT's tenet of “Leave What You Find”? In this case, I, like the authors, believe the answer is yes, with the important caveat of moderation.

The crux of this article is how to best foster a connection to nature. Our alienation from nature is a key component of environmental destruction (Berkes, 1999). How do we not get stuck in the language and thinking of Western reductionism and fragmentation, but instead view the world as an integrated being? Perhaps examining the experiential transmission of traditional ecological knowledge can help outdoor educators facilitate behavior-oriented approaches. TEK “teaching” is characterized as activity-based, unconsciously done, observer-activated and learner-directed (Zent, 2009, p. 52). Bates (2009), in his article on learning and knowing in Inuit societies, argues that active interaction with the land is of greater importance than the retention of the Inuit language itself. Without the land connection, language lessons lack context, and thus the language holds no meaning.

Jelinski (2005) also examines metaphors and their relationship to the environment. He believes ‘Mother Nature’ and the ‘Balance of Nature’, guiding ethics often used in the field of conservation, are harmful in that they reinforce the Cartesian view of man versus nature. While I agree with this premise I believe that modeling, more so than language, should be the primary focus in outdoor education.

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*From John Gookin, PhD Student (Cohort-3), Prescott College*

This article belongs in JSE because it provides critical ideas that challenge these educational programs to think about sustainability in a broader and more holistic worldview. This is an extension of the classic environmental dilemma we associate historically with Muir v. Pinchot: preservation v. conservation.

I think this article has a responsibility to suggest improvements of Leave No Trace (LNT). LNT is here to stay and has global branding. Even if you want to replace it with

something else, LNT will still be there and this cause will be served by improving it.

I suggest, authors mention that the very name "Leave No Trace" implies that humans are but visitors in the unbuilt world. We need people to "own" their impact by seeing more of the energy and material cycles they are part of: harvesting locals foods and fuels helps shorten these feedback loops.

Please acknowledge that high use areas (like campgrounds) can not sustain high use with local resources and may need to import firewood and export waste to be composted elsewhere.

Please acknowledge that designated wilderness should remain bio-geographical islands, worthy of protection, but suggest that this protection is done with a conservation attitude rather than a preservation attitude, specifically so we can practice sustainable harvests, composting, and the other lifestyle choices we should be practicing back in urbania.

Overall, I love this article and think it can help fix a fundamental flaw in outdoor education. I welcome further discussion of any of these points. Thanks for the opportunity to jump into this.

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*From Denise Mitten, PhD, Chair Adventure Education, Masters of Arts Prpgran (MAP),  
Prescott College*

The authors have addressed the important concept of the nature and human duality promoted by western society. This dualism may well hinder people's understanding and practice of ecologically appropriate actions. Quoting Thomas and Thomas (2000) the authors contend that unless we emphasize that humans are a part of nature and that the world is one system then people will not understand how to behave in ways that truly help us live in harmony and in a sustainable fashion with the earth.

I agree with the authors that language is important in determining behavior. I also agree that western culture has assumed and maintained a separation from nature that is reinforced by language, which continues the dualistic thinking.

However, in their critique of Leave No Trace (LNT) I think the authors have over reached to make their point. Humans have found ways to work with nature in ways that offer protection from certain environmental elements and we have evolved to need this protection. Humans, as well as some other animals, create waste management systems in order to keep their environment livable. Therefore the underlying concept and values of LNT are valid.

Outdoor educators and outdoor adventurers have used and constructed various living practices, including waste management in the outdoors, in order to be safe and comfortable. This has been

called low impact camping and then minimum camping. The latest rendition of US camping management is Leave No Trace (LNT) and like the authors I agree that the words “leave no trace” as well as the “humans as apart from nature” phrase imply an unsustainable separateness.

However from the LNT website LNT “is best understood as an educational and ethical program, not as a set of rules and regulations.... Leave No Trace information is rooted in scientific studies and common sense.” In fact because most recreation actually takes place in the front-country, LNT has developed front-country practices. The practices can be interpreted to help humans develop a sense of place-based affiliation with nature. I believe it is because many humans rely on rules that LNT guiding principles get interpreted so narrowly. Because of this inclination LNT has developed guide books for many different bioregions to broaden applications of the rules.

It is unfortunate that LNT was named using language that promotes a separateness from the land, however, we ought not toss the baby out with the bathwater. While it is both impossible and undesirable to try to leave no trace, it is logical, desirable, and normal to teach people how to live sustainably with nature. As the authors said, “The role of humans as protectors shifts from that of policeman to citizen as we begin to realize that any damage to the biosphere as a result of our actions is damage to our own bodies.” This means that we have to think critically about how we process our waste and in some areas this means carrying it out. Most outdoor educators help students think critically about how to dispose of the waste once in the front country and LNT encourages this thought.

Another example of overstating is the argument that “rethink, refuse, reduce” is better than “reduce, reuse, recycle”. This slips in dualistic thinking. All of those actions are needed depending on the situation. Why try to vote for one set of words over another?

Their concern with principle #7 Be Considerate of Other Visitors is a huge stretch. Respecting other people’s space is a courtesy and if people go to the wilderness to commune with nature the positive benefits are often maximized in small groups or in solitude.

Finally, the coffee example is out of place. It is a different critique. If the authors were using this example to illustrate how mechanistically people use the LNT principles without thinking for themselves, I agree.

The authors have prematurely discarded the values of LNT by overstating arguments. However, their premise that western culture has created a duality that separates humans from nature is accurate and we need to consider and treat ourselves as part of nature.

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*From Marieke Slovin, PhD Student (Cohort-5), Prescott College*

Our current relation to the natural world is defined by extreme distance and disconnect . This article is timely and entirely relevant to the current situation in which our species finds itself. I have worked as an interpretive park ranger and environmental educator for many years

and have taken note of how our language and behavior serve to reinforce rather than bridge this distance. It is refreshing to read the authors' insights into the human relationship with the natural world in terms of language, metaphor, and behavior.

The authors portray the language of the Wilderness Act of 1964 as a means of disconnecting with wilderness. Western culture has evolved to the extent that we choose where and when to visit wild places but typically stay for limited lengths of time unless forced to remain under unforeseen, extreme circumstances. The Wilderness Act does not suggest that humans should be completely devoid of experiences in the wilderness. The language was carefully chosen to avoid sending this message. For instance, the use of the word untrammeled, which can be defined as not depriving or restricting the freedom of the landscape and consequent ecosystems, inhabitants, and functions to go about their business, suggests that people should spend time in the wilderness but should take care not to impact the resource in a lasting way such that nature can endure for generations yet to come.

The authors provide an interesting history of the language and traditions leading up to programs such as Leave No Trace (LNT), along with language and behavior that serve to separate rather than connect our species with the natural world. As a park ranger, I have been trained and certified in LNT principles, which I have explained to visitors many times when issuing backcountry permits for backpacking trips in the North Cascades. I have debated these principles with fellow rangers, as well as the connection between our behavior in the wilderness and our own human-dominated communities. These inconsistencies range from disposal of our waste in the wilderness versus the toilets in our homes to the origins of the coffee we drink, the transportation we use to travel to the backcountry, and the gear we use during our visit, without which we may not otherwise survive since our knowledge of ecology and place has diminished with our departure from life in wild places to developed communities.

Our culture is quite structured and rife with rules and regulations. While it is important to protect the small islands of wilderness that remain, it is of equal importance for humans to immerse themselves in it. Through these direct experiences, lives are altered and behavior patterns gradually shaped to fit a more ecologically harmonious mold. A close study of the history of humans interacting with the natural world demonstrates that we as a species have in ways both great and small impacted the world around us. It is imperative that we invite people to continue this interaction at a level that is sustainable and respectful toward this shared world. I grew up rampaging through the woods, building forts, and playing for hours in imaginary lands within the woods of New England. I am sure I left social trails, trampled a number of innocent shrubs, and sent many a squirrel scrambling for cover; yet, out of this rampage grew a deep connection with the natural world based on love and respect, such that I have spent my entire adult life working to protect it through education and example.

In conclusion, it may be appropriate to consider moving beyond outdoor education with this new language and to include rather than exclude any and all organizations, programs, people, and places that could benefit from this evolution – for example, United State Forest Service. Our species has already grown so distant from the natural world upon which it depends for its survival. Let us not risk further distance from each other.

*From Dan Wayne Caston, PhD Student (Cohort-6), Prescott College*

Cachelin et al. make a very compelling argument for a re-framing of the Leave No Trace (LNT) principles. In the abstract, the authors use the word “pedagogical,” which implies limiting application to youth education only. A more comprehensive word might acknowledge the adult populations that also participate in these types of educational programs-I mention this because the focus of the paper is so heavily concerned with linguistics. The discussion of the impact of the “traditional metaphor” was very accurate and I found myself nodding along as it unfolded. However the “implications for sustainability in outdoor education need to be expanded upon-possibly through a brief discussion of the CIL principles and more information about the ASAP model. The Leave No Trace principles come off as prescriptive while the approach the authors advocate compels discussion of the ideals purported. In this way, this new approach moves from being transmissive to creating the conditions and opportunity for participant transformation.

## **Metaphorically Speaking: A Rejoinder to Apelian, Caston, Gookin, Mitten and Slovin**

By

Adrienne Cachelin, Jeff Rose, Dan Dustin, and Wynn Shooter

We read the responses to our article *Sustainability in Outdoor Education: Rethinking the Root Metaphor* with great interest and thank authors Mitten, Caston, Apelian, Slovin, and Gookin. This process has given us the opportunity to elaborate on important elements of our work and incorporate provocative new perspectives. Specifically, in this rejoinder we hope to encourage readers to reflect on the importance of language and underlying metaphor by integrating traditional ecological knowledge (TEK) into the conversation and considering the powerful role outdoor educators can play in fostering sustainability through a critical approach to language and metaphor.

Outdoor education can be a powerful force in fostering sustainability; however, in its current form it is at best overlooking valuable tools and at worst undermining sustainability education altogether. The tools of which we speak are language and the underlying metaphors that language activates. Language is not reflective of the world but rather defines and shapes it (Carroll, 1956; Lakoff & Johnson, 1980). This understanding is fundamental to our premise that the dominant metaphor in outdoor education, *humans equal non-nature*, needs to be changed. Intentional language choices are essential in educational contexts because, while language conveys surface meaning, it also broadcasts a deeper worldview.

Traditional ecological knowledge, as mentioned by Nicole Apelian, is a valuable tool in understanding the power of metaphor. Because TEK holds that nature is subject, not object, and

that humans are indeed a part of nature, TEK approaches can provide more “holistic ways of understanding the environment and offer alternatives to the dominant consumptive values of Western societies” (Berkes 1999, Hunn 1999 as cited in Kimmelman, 2002). Gadgil et al. (1993) further emphasize the value of TEK, noting:

Modern scientific knowledge, with its accompanying worldview of human beings apart from and above the natural world, has been extraordinarily successful in furthering human understanding and manipulation of simpler systems. However, neither this worldview nor scientific knowledge has been particularly successful when confronted with complex ecological systems.... It is in this context that traditional ecological knowledge is of significance (p.51).

Taken together, these perspectives suggest the dominant worldview is inadequate to address ecological complexities that accompany this “consume and manage” approach.

Current “waste” management systems provide an interesting example. Ecologically speaking, there can be no waste because the waste material from one organism is the source of energy for another. This is a particularly important point when considering that living sustainably means that we don’t use parts of ecosystems, a.k.a. natural resources, more quickly than ecosystem processes can renew them, and that we don’t discharge wastes more quickly than they can be absorbed (Hardin, 1985). Yet our dominant narrative about consumption does not include a holistic cradle-to-cradle approach. At best we seek to minimize waste and then redistribute it, rather than rethinking our practices and avoiding products and processes that create material that cannot be systemically absorbed. Consequently, waste management means moving by-products and toxins from one location to another less desirable one, ignoring ecological complexities and resulting in environmental injustice.

Consider a more TEK-aligned approach to waste. In Indonesia “traditional systems combined rice and fish culture (*subak*), and wastes from this system often flowed downstream into brackish water aquaculture systems (*tambak*). The *tambaks* themselves were polyculture

ponds, often combining fish, vegetables and tree crops. The *subak* itself was part of a water temple system (Berkes, Folke & Gadgil, 1995). Here we see a complex application of ecology that goes beyond thinking of waste as something to “pack out” or move around. In terms of an approach to modeling appropriate techniques in outdoor education settings, this understanding mandates that we consider energy and nutrient flows of production and consumption in a larger systems context than that advocated by LNT. The point here is not to chastise LNT per se, but to question its underlying metaphorical basis and to suggest that an alternative metaphor like the one inherent in TEK provides one possible solution.

The dominant cultural metaphor nested in LNT sends powerful messages, with impacts on education, consumption patterns, and land management practices. To greater and lesser degrees, LNT’s success means it is part of how we live, how we recreate, and how we conceive complexities about ourselves as a part of something larger. As commentator John Gookin points out, LNT’s future is well entrenched, with multiple corporate partnerships, as well as substantial partnerships with federal land management agencies. Since its inception over two decades ago, LNT has shown flashes of dynamic potential, changing both with recreational trends and also innovations in knowledge, understanding, and technology. LNT has taken steps toward localizing its message, indicating not only that different recreational practices are necessary in different ecosystems, but also that small groups dedicated to stewardship, education, and connection to place are vital partners in this process. As scholarship illustrates the embedded interconnectedness between human and non-human worlds (Cronon, 1996; Demeritt, 2002; Proctor, 1998), and evidence comes to light that manipulating language to activate alternative metaphors can increase critical thinking (Cachelin, in press), LNT can take advantage of its cultural and educational prominence to support and advance the development of this perspective.

There is no way to “leave no trace” when we recreate in the outdoors, just as there is no place on the planet that is free of our collective human traces.

In the words of popular author Richard Louv, outdoor education is “sacred work.” Under environmental, social, and political conditions that invite outrage, and amid calls for radical change, subtle adjustments might actually be most powerful and consequential in the long run. Outdoor education, providing visceral connections to the surrounding world in a small group setting where social changes can be enacted, is fertile ground for educating for a more sustainable world. As we advocate for this type of education, we should do so carefully and with great intentionality. Words and metaphor matter, and outdoor educators will do well to embrace ecologically accurate language that moves us toward greater justice and sustainability.

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