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Environmental Decline, Loss, and Biophilia: Fostering Commitment in Environmental Citizenship

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Abstract

In exploring our personal sense of loss as a response to environmental decline, this article outlines several dimensions of this experience (guilt, shame, helplessness, anxiety, environmental disequilibrium, environmental trauma, cosmological loneliness), and traces promising healing responses in the health professions and ecosocial work. Focusing on a public educational empowerment model, the article proposes E. O. Wilson's notion of "biophilia" – an innate attraction to life and to affiliate with living things - as a basis for a model of practice. This educational approach uses biophilia and ecological narratives as a foundation for deepening personal motivation for sustained action in environmental citizenship.

Introduction

"It is in the destruction of the world in our own lives that drives us half insane, and more than half. To destroy that which we were given in trust: how will we bear it? To have lost, wantonly, the ancient forests, the vast grasslands is our madness, the presence in our very bodies of our grief" (Berry, 1998, p. 98).

With eloquence, Wendell Berry captures the anguish of our experience of loss in the wake of accelerating ecological deterioration. Our grief and emotional loss as a reaction to environmental decline is an idea that rarely appears in conversation or the popular media; neither does it circulate widely in the discourse of contemporary society. But recent polls echo this growing sense of fear and anxiety among Canadians about the future related to environmental problems, rivaling their concerns regarding security and health care (Langi, 2007; Neuman, 2007). Macy (1990) puts her finger on this intuition, naming it as crucial to our contemporary collective psyche. "Given ...the progressive destruction of our biosphere, polls show that people today are aware that the world, as they know it, may come to an end. I am convinced that this loss of certainty that there will be a future is the pivotal psychological reality of our time (p. 56; see also Macy, 1995, p. 241). As this intuition deepens and begins to percolate into our

awareness, it undermines our sense of certainty about the future of our children's and the planet's well-being, sprouting blossoms of fear and anticipatory grief.

When I present workshops on this topic, it has been my experience that many people testify that they have never encountered this notion before. But, as soon as I describe my own personal experience or those of others as a *grief* reaction to environmental losses, what McKibben (1989/2006) has termed the "end of nature," people insist that they know exactly what I am describing. It is as if elements of their lived experience that were inchoate and lying outside of the realm of language, suddenly leap into the foreground of their awareness, giving shape to something that was previously only in the shadows. More importantly, giving language to the experience as loss or grief provides the opportunity to change the relationship between the people and their experience, so that they now have the opportunity to take healing action in response to their sense of loss.

Loss in the Face of Environmental Decline

"For one species to mourn the death of another is a new thing under the sun" (Leopold, 1970, p. 117).

So writes Aldo Leopold, a respected voice in environmental writing, as he offers a poignant and prescient insight into our personal response to the loss of species and the destruction of the natural world. Leopold's own sense of loss and grieving is a thematic thread that runs throughout his writing in his classic *A Sand County Almanac*, where his poetic reflections are pervaded with a sense of mourning, mixed with a joy in the biotic life that surrounds him. In his piece, "Marshland Elegy", set in the marsh habitat of Wisconsin, Leopold (1970) laments: the "sadness discernible in some marshes arises, perhaps, from their once having harbored cranes. Now they stand humbled, adrift in history." (p. 103). Elsewhere, Leopold (1970) writes about the monument erected to the pigeon to "commemorate the funeral of a species. It symbolizes our sorrow. We grieve because no living man will see again the on-rushing phalanx of victorious birds, sweeping a path for spring across the March skies" (p. 116). Leopold's ecstatic responses to nature, interwoven with his loss with the extinction of species, are emblematic of our own emotional responses to environmental losses.

Our awareness of the magnitude of the problems, combined with the inadequacies of our response, cedes to increases in our emotional experience of fear, grieving, and anxiety. Turner (2007) describes his childhood in terms of watching *National Geographic* documentaries that inevitably converged on how another animal or forest was on the precipice of its "imminent demise." Each year, his family received WWF calendars with "twelve more flawless masterpieces soon to vanish, a childhood enumerated by extinctions" (p. 14). Even a casual survey of news media reveals a steady barrage of news coverage of environmental disasters and events, which take their cumulative toll on the human psyche and our emotional lives. In his documentary, *An Inconvenient Truth*, Gore suggests that individuals often move directly from denial to despair as they learn about global warming, bypassing any kind of personal engagement or committed action. Environmental educator, Thomashow (1996) writes: "Some of us become psychologically numb as we become accustomed to the litany of environmental bad news. Others experience fear and anger, are outraged by the social and environmental injustices that plague the

planet. Sometimes people just tune out and ignore or avoid the negative images, rationalizing their inaction, practicing denial and apathy” (p. 143).

In both environmental studies and the media, a similar discussion has emerged, suggesting that increasing numbers of people may simply withdraw from any advocacy or political involvement around ecological issues. As the gap between the scale of collective action needed to address the environmental crisis, and the actual response on the part of political and institutional leadership shrinks to disheartening proportions, our sense of immobilization is exacerbated. This sense of disempowerment then doubles back on itself, further inhibiting the possibilities of timely and decisive action. As a result, a collective ecological fatigue sets in, effectively constraining our ability to collectively respond to the challenges that we are facing.

The Ecology of Loss

“One of the penalties of an ecological education is that one lives along in a world of wounds. Much of the damage inflicted on land is quite invisible to lay [people]. An ecologist must either harden his [or her] shell and make believe that the consequences of science are none of his [her] business, or [s]he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise” (Leopold, 1970, p. 197).

In the face of environmental decline, our sense of loss appears to be experienced differently, depending on the developmental life-cycle stage of the individual. Researchers (Stone & Barlow, 2005; Kahn & Kellert, 2002) have suggested that children in primary school respond to specific animals (bears, turtles, and wolves figure prominently) or particular features of the natural world (river or other geographic features), but lack a larger cognitive context in which to locate the specific animals or ecological features. At age nine, children’s developmental orientation begins to take on a moral perspective on the world, perceiving environmental issues in a broader context. For this age group, their experience of loss tends to focus more on the “why” of the loss of species or the degradation of the environment. For adolescents, the perspective becomes even more broadly contextual and focuses on environmental justice (Lanza, 2005), often centering on taking action through habitat restoration or political advocacy (Thomashow, 2002).

In her essay “The Ecology of Grief,” Windle (1995) offers one of the first explorations of the landscape of our ecological loss, drawing on her experience as a palliative care specialist. Windle highlights the dimensions of loss that overlap and co-mingle with each other. Some dimensions are more in the foreground of a person’s awareness, exercising a greater influence on the person’s consciousness. What are the dimensions of our experience of loss in response to environmental deterioration?

1. Guilt and Shame regarding Past Environmental Behavior

In McKibben’s (1989/2006) exposition of the “end of nature,” he identifies both sadness and guilt as emotional responses to our contributions to the degradation of the environment (p. xxiii). These responses signify our sense of responsibility for the deterioration for the natural

realm, and an awareness of our failure to adequately change our actions so that our ecological impact was lessened or eliminated. McKibben writes: “there is the sadness of losing something we’ve begun to fight for, and the added sadness, or shame, of realizing how much more we could have done – a sadness that shades into self-loathing” (p. 74). Knowing that our consumer lifestyle in the global North had destructive consequences for the Earth, nevertheless, we did not translate our concern into decisive action as a global community. For McKibben (1986/2006), our “sadness is almost an aesthetic response – appropriate because we have marred a great, mad, profligate work of art, taken a hammer to the most perfectly proportioned of sculptures (p. 74).

2. *Despair and Helplessness regarding Influencing Change in the Present*

As we shift our gaze into the present, we sense a different shading of the experience of loss. Our pervasive sense of *powerlessness* that gnaws at our awareness and sense of agency is a prominent feeling, which solidifies over time into “environmental despair” (Macy, 1995, pp. 240-259). Drawing on her experience as a public educator, Macy identifies *fear* as a key element, and delineates several kinds of fear: fear of pain, fear of appearing morbid, fear of appearing stupid, fear of guilt, fear of causing distress, fear of provoking disaster, fear of appearing unpatriotic, fear of religious doubt, fear of appearing too emotional, fear of feeling powerless. Closely related to this fear is the *anger* and *rage* that can arise with news coverage about the declining health of the environment or instances of ecological disaster, combined with a deepening *frustration* with the lack of political and institutional leadership in addressing these problems.

3. *Anxiety and a Diminishing Sense of Certainty about the Future*

Perhaps the dimension most ignored is our disheartening fear that we are significantly diminishing our children’s health as well as that of future generations and the biotic communities on Earth through environmental degradation. Orr (2002) writes: “Without anyone saying as much and without anyone intending to do so, we have unwittingly begun to undermine the prospects of our children, and I believe that at some level they know it” (p. 279). On the one hand, this diminishing sense of confidence hollows out any resolve we might muster in taking decisive action. Yet, this anxiety about the future and our environmental legacy that we are leaving our children can also spawn motivation for taking action. Social work educator Zapf (2009) suggests that the fear of the “implications of climate change and sudden renewed interest in the natural environment have created a context where society may be facing a fundamental shift in values and approaches toward living on and with this planet” (p. 24).

4. *Environmental Disequilibrium with Climate Change*

As climatic bioregions shift and ecological niches of species migrate towards the poles under the pressure of climate change, there is a growing instability in the climate patterns and rhythms of the planet. For us, this breakdown in the predictability of climate is causing increasing havoc with our ability to feed ourselves, as climate stability has been a cornerstone of our long history of agriculture. Climate stability and predictability of the cycle of seasons is important not simply because of our biological and physical needs, but for our eco-psychological health and well-being. We depend on the planet to provide us with a sense of safety, stability,

and security. Finch (quoted in McKibben, 1986/2006) writes: “Nature has always provided the ‘deep, constant rhythms,’ even if, in our turbocharged and jet-propelled arrogance, we have come to think that we are independent of the earth’s basic pulses” (p. 87). On some deep level, we are beginning to know that the foundational rhythms embedded in our biological and ecological structures through time are now becoming unraveled, leading to increasing psychological disequilibrium (Roszak et al., 1995). We long for reassurance that the natural world will continue be a source of ecological stability. “The recurring cycles of the year are not simply entertaining phenomena...but signs that the cosmos is still intact, that we remain in something larger and more reliable than our own short-lived enthusiasms” (Finch quoted in McKibben, 1989/2006, p. 87). Instead, we are disheartened to discover that we feel a deepening sense of anxiety and fear as the climate destabilizes and the environment declines.

5. *Environmental Trauma*

If we in the global North feel increasingly bereft of the *psychological reassurance* derived from a stable climate, then it is also the case that those in the global South suffer from *higher levels of physical risk and danger* as their weather becomes destabilized and less predictable. In the developing world, people are often fearful for their very physical survival, and are increasingly forced to become environmental refugees and to migrate due to environmental decline or “development” projects initiated by the global North. The gravity of this problem is exacerbated by the sheer numbers of persons that are currently affected. In 2003, the UN reported that for the first time in history, the global number of environmental refugees (25 million) exceeded the number of war and political refugees (23 million). With the increase in extreme weather events, growing numbers of persons and communities will experience environmental trauma in a variety of ways: fatalities, injury, distress arising from loss of family, property, and the inability to physically sustain themselves (Intergovernmental Panel on Climate Change (IPCC), 2007). All projected trends indicate a sharply rising trajectory of emotional and psychological distress on a global level.

6. *Cosmological Sense of Loneliness*

In his essay, “Loneliness and Presence”, Berry (2006) relates the story that in the treaty negotiations with Europeans, Chief Seattle of the Squamish tribe on the North Pacific coast is reported to have said when the last animals have disappeared, “humans would die of loneliness” (p. 33). In the sixth great “spasm” of species loss, this perception that loneliness is part of our malaise highlights the *existential* dimension of our sense of loss. Unlike the five other spasms of extinction due to natural causes, this sixth wave of extinction is attributed to human activity through the impacts of toxic pollution, destruction of habitat, and global warming. As other species suffer, die, and are lost through extinction, irreversibly and eternally, our biophilic web is disturbed and ruptured. We are ushered into what Wilson (2002) calls the “Age of Loneliness.” And yet, this cosmological loneliness and the “ache” over the loss of species has the motivating force that has given rise to leaders in the environmental field, such as Goodstein (2007) as revealed in his book, *Fighting for Love in the Century of Extinction*.

Healing Responses to Environmental Loss: Promising Directions

“...ecological identity work has a profound healing agenda: restoring ecosystem health, community well-being, and personal happiness” (Thomashow, 1996, p. 143).

Health Professions

In their discussion of the consequences of climate change, the report of the Second Working Group of the IPCC (2007) on “Impacts, Adaptation and Vulnerability” refers specifically to the psychological dimensions that need to be addressed by policy-makers and the helping professions (pp. 735-736). Of these dimensions, the acknowledgment of the need to therapeutically respond to the psychological impact of *disasters* is most widespread, figuring prominently now in mainstream trauma literature (Briere & Scott, 2006; van der Kolk et al., 1996). However, a debate has emerged as to whether these mainstream approaches are too focused on individual trauma symptoms in seeing symptoms as an early sign of PTSD, a psychiatric disorder (Walsh, 2007). Some researchers (Landau & Saul, 2004) propose that therapeutic approaches assisting those impacted by disasters needs to be reconstituted, focusing on strengthening family and community resources and enhancing resilience. Others (Arulampalam et al., 2005) insist “disaster therapy” must be culturally appropriate, and respectful of culturally-specific understandings of mental health.

Ecosocial Work

Among the health professions, social work (Ife, 2007; Mary, 2008; Whitaker, 2007) has begun to identify the range of the personal and interpersonal effects of the environmental crisis, as evidenced by the assessment tools developed to evaluate the effects of environmental health hazards on the health of individuals (Soine, 1987). For instance, social work is recognizing the centrality of responding to the environmental trauma experienced by individuals and communities through extreme weather events and accelerating climate destabilization. Bohm (2005) situates social work practices in the field of trauma interventions, writing that increased “environmental disasters such as floods and severe weather, owing in part to global warming, have created trauma as well as financial losses” (p. 123). Other practitioners have explored clinical responses by developing coping tools for clients to alleviate emotional distress (Berger & Kelly, 1993) or disruptions in their social well-being (Hoff & McNutt, 1994). For Coates (2003), a critical task of “social work and counselling professions will be to help people deal with their sense of anxiety and loss. While people may not be aware of the cause of these feelings, for many the distress will be rooted in trepidation about the present and the future” (p. 131). As people become more familiar with ecological decline and its implications for human health and survival, many have found it difficult to resist drifting into discouragement, anxiety or denial, which often leads to a resigned passivity.

In the context of the accelerating ecological crisis, future social work practice could become well positioned to provide assistance to those struggling with their personal responses, to collaborate with other allies in advocating for environmental justice, and to develop community-based forms of public education. Through individual and group intervention, social work practitioners need to assist both themselves and others to grieve their sense of loss, hopelessness,

and pervading anxieties and fears regarding the future and the impacts on their children and the vulnerable populations of all species (Coates, 2003, pp. 109, 65, 157, 134). Intervention by ecosocial workers can find expression in a variety of clinically-based forms of individual, family and group counselling as well as community practice (Lysack, 2009a; 2009c). For Muldoon (2006), there are “few other professions capable of coping with fear and illness, while simultaneously possessing the ability to listen, empathize, analyze, and organize” (p. 1). This crucial healing agenda cedes to a challenging question: Is it possible for individuals to transubstantiate their *sense of loss* into a personal *sense of mission and commitment* to protect and restore the Earth? Can we as practitioners facilitate this process for others through a learning process? If so, how can this be accomplished?

Elements for Building Motivation for Environmental Action

“Environmental educators ‘have a responsibility not only to advocate for ecological reform and to inculcate appreciation of the natural world but also to provide support for the anxiety that accompanies the perception of cultural upheaval and wounded ecosystems’” (Thomashow, 1996, pp. 143-144).

While it appears to be the case that clinical intervention might provide assistance for people coping with their reactions to environmental decline, this may not be the only avenue for individuals to accomplish this task. Environmental educators suggest that *community-based forms of public education* may also play a role. Priorities for developing and facilitating such educational processes are now beginning to emerge from current research, which could empower individuals to move from being passive consumers to becoming engaged and committed environmental citizens.

1) Information Alone is Insufficient

While we are still uncertain as to what engenders ecological awareness or engaged environmental advocacy, a consensus is emerging as to what is ineffective in engaging citizens in committed social action. For instance, we now know that in ecological education, “knowledge or information alone is not sufficient to produce behavior change” (Moser 2007b, pp. 85-86). Neither do alarmist messages in themselves create the conditions for the emergence of committed ecological action, as such messaging only encourages people to simply turn down “the internal anxiety”, to “block out more news on the topic or distract themselves from feeling the fear” (p. 89).

2) Emotional Engagement

Biologist and conservationist, Wilson (1984) insists that it is crucial to link emotional and intellectual dimensions “in order to create a deeper and more enduring conservation ethic” (p. 119), which could form the basis for engaged ecological advocacy. Stephen Gould also maintains that emotional engagement is critical to the formation of an ecological identity of a person that actively defends and protects the environment. Gould writes: we “cannot win this battle to save species and environments without forging an emotional bond between ourselves

and nature as well – for we will not fight to save what we do not love” (quoted in Orr, 2004, p. 140).

3) *Fostering Hope, Values, and a Vision of the Future*

While the affective dimension is necessary in educational processes that foster committed environmental action, it is insufficient by itself. From her research as a climate change educator, Moser (2007a, pp. 64-75) indicates that there are substantial risks not only in ignoring the emotional responses to global warming information, but also in appealing to individuals' fears and anxieties regarding ecological degradation as a means of provoking action. Is there a way, Moser asks, to foster *hope* rather than appealing to fear, to evoke *positive values* rather than entrench person more deeply in their defence mechanisms, and to imagine a *future worthy of sustained and sacrificial struggle*?

4) *Cultivating a Moral Framework*

While agreeing that it is important to attend to the affective dimensions of environmental education, Moser (2007b) also maintains that effective environmental education needs to build on the “yearning for community” experienced by many in society by enhancing “the moral sense of responsibility that goes beyond one’s small self-interest” (p. 81). As Moser suggests, all “successful social movements have an unshakable moral foundation” that must also offer a hopeful and “compelling vision for the future” for participants (p. 82; see also p. 84). Thus, any environmental education process must include more than the intellect, but must also engage the *commitments* and *values* of individuals in order to be effective in facilitating persons to become actively involved with environmental advocacy.

Biophilia: Affiliation with Nature that Cedes to Loss

“[Biophilia is] the innate tendency to focus on life and lifelike processes...To an extent still undervalued in philosophy and religion, our existence depends on this propensity, our spirit is woven from it, hope rises on its currents” (Wilson, 1984, p. 1).

Could it be the case that there may be a relationship between our sense of intense *attachment* to life on the Earth, and our reaction of *loss* to ecological decline? From our own experiences of grief as family members die, we know that our experiences of loss arise as our relationships with those we love are ruptured and our bonds of attachment are broken. If this is an existential condition in our family relationships, could it not also be so with the attachments that we form with the natural world? This apparent paradox of healing *grief* responses while cultivating affection for the natural world is a pattern that reappears in many environmental writings. For instance, in his reflections on fostering a robust ecological identity among his students, Thomashow (1996) struggles with a widespread predicament: how does one educate individuals so that they can “simultaneously promote awareness, enjoyment, and sensitivity to the natural world, while pointing out all of the ominous threats to global ecosystems, local habitats, and human well-being” (p. 142)?

Conceptual resources are now emerging within environmental studies that provide one possible basis for mapping out the elements of an attachment to nature. One of the more promising theoretical resources is biologist E. O. Wilson's (1984) notion of *biophilia*, the "the innate tendency to focus on life and life-like processes" (p. 1; see also 2002, pp. 134-142). Wilson (1999) highlights how biophilia entails a human *bond of attachment* to the biological community on the planet, manifesting itself as "the connections that humans subconsciously seek with the rest of life" (1999, p. 350) or as an "urge to affiliate with other forms of life" (1984, p. 85). From "infancy we concentrate happily on ourselves and other organisms. We learn to distinguish life from the inanimate and move toward it like moths to a porch light" (1984, p. 1). Children seem to be irresistibly drawn to animals, and display a delight and joy in encountering animals. Children's stories and movies as well as world stories and myths are filled with animal characters or plants or natural landscapes. As adults, many of us experience a deep attraction to gardening, nature walks, hunting, and fishing. All of these are signs of our bio-philía, or our love of life.

Since Wilson advanced his notion of biophilia, other researchers have utilized the idea as a heuristic device for orienting other inquiries into human-nature relationships (Kellert & Wilson, 1993) and children's connections to the natural world (Kahn & Kellert, 2002). Research in environmental psychology suggests that there is a close relationship of biophilia to our psychological health and well-being, including a sense of happiness and meaningfulness in our relationships and life and an enhanced resiliency in responding adaptively to problems and stress (Mayer & Frantz, 2004). In social work, Besthorn and Saleebey (2003) have provided a comprehensive overview of the conceptual resources associated with the notion of biophilia, detailing how these resources might be enfolded into a framework for social work practice in order to provide a greater environmental sensibility.

For Wilson (1984), biophilia permeates and ripples through human history, arcs across the individual life cycle of a person, and "cascades into repetitive patterns of culture across most or all societies" (p. 85). Through this biophilic love of life on earth, we are able to challenge our misguided tendency to elevate and separate ourselves from the rest of the biosphere, and reclaim our niche within the web of life in an acknowledgement of our kinship with life. If biophilia can serve as a heuristic device for understanding fields as diverse as child development, environmental psychology, and social work, could it also function as an organizing metaphor for educational processes aimed at assisting individuals to relate their sense of loss to their biophilic attachment? Could it provide a foundation for fostering committed advocacy on behalf of the biotic community on Earth? This article concludes with a brief discussion of the elements of a public education practice that uses biophilia as a foundation for a process where individuals have an opportunity to integrate their experience of loss into an enhanced commitment to protecting the environment from further deterioration.

Beginnings of a Model for Practice: A Proposal for Biophilic Public Education

"We know enough of our own history by now to be aware that people *exploit* what they have merely concluded to be of value, but they *defend* what they love" (Wendell Berry, 2000, p. 41).

Towards an Framework for Educational Practice

The foundation of effective ecological education that enables us to make sense of our sense of loss lies ultimately not in the lure of economic gain, or the promise of personal health, or our enthusiasm for the outdoors. Rather, it is to be found in the powerful biophilic attraction and the innate impulse to affiliate ourselves to other forms of life in the natural world. Like the roots of a tree, these impulses and longings grow and spread throughout our life and relationships, animating our affection for nature, and fortifying our commitments to seek its protection. As Wilson (1984) has suggested, it is out of this deep and abiding connection that we feel for the diverse forms of life around us that we derive our yearning to protect ecological kin.

For social work practitioners, public education can be vectored to facilitate individuals to make connections between the *personal* and the *ecological* (Park, 1996) and linkages between *social and ecological justice* (Besthorn, 2003; Keefe, 2003). Educational processes also need to explicate and uncover the ethical dimensions of environmental issues (Lysack, 2008; see also Orr, 2009). Coates (2003) concurs that the ecological crisis will demand nothing less than a “new set of values and beliefs, a new world view” (p. 37; also p. 131) if we are to respond adequately to our fears and anxieties regarding the future of our species. Practices of public education that facilitate the emergence of environmental citizenship would conceptualize ecological learning as a *social and personal* process (Lysack, 2009b), enhancing the skills of *resiliency* (Lysack, 2009c), thus equipping persons to engage in *committed action* (Lysack 2009a; 2009d).

Wilson (1984) and others would maintain that this impulse to connect with other forms of life lies at the heart of who we are as human beings, linking us to a robust spirituality. This biophilic connection with life enables us to recover our sense of vocation to be the guardians of life on the Earth, a calling that runs deep in the wisdom and spiritual traditions, stretching like an arc through human history. As Coates (2003) suggests, health professionals and other practitioners need to offer effective forms of intervention enabling individuals to “seek a new sense of purpose, meaning and connection in their lives” (p. 131).

How do we discover, or re-discover this sense of our connection and affiliation with life? Through my work of community-based public education, I have developed an educational pathway that appears to assist people to re-connect with their desire to protect the environment, deepening their capacity to take action on behalf of the environment. It involves a series of personal reflection exercises, utilizing a sequence of questions that lead a person into their own inner awareness of their connection with living beings and the biosphere. This sequence of reflection exercises does not start with people’s experience of loss regarding the environment, but with their attachment bond to the biotic community and their experience of affection for the natural realm. Such is the paradox of environmental education in the context of widespread ecological decline and accelerating climate change: providing support for people to cope with their grief or fears, by assisting them to rediscover their attachment to the very thing whose loss precipitates their grief. Only after individuals have recovered their sense of attachment with the natural world do participants explore their responses to the environmental losses they sense around them.

The third section encourages participants to make interpersonal and family connections between their values and ethical commitments that underlie their interest in protecting the natural realm, and the significant persons in their life experience who have shaped these values. Finally, this set of reflection exercises encourages individuals to focus on how they can enact and deepen their newly emerging commitment to protect the natural world.

I Our Biophilic Connection to the Natural Realm

Here is an overview of the key elements arranged in an incremental sequence, accompanied by a reflective commentary.

1) Encourage individuals to identify the one part of nature (species of animal or plant; ecological feature such as an area, forest, or river; element of nature) that they want to protect the most from environmental decline or climate change.

This starting point draws individuals into the heart of their experience of biophilia, and highlights the specific part of the natural world that they will protect or defend because of their affection for it. As a person moves through the sequence of questions from this starting point, s/he travels inwardly into their awareness in order to answer this question. In doing so, there is an opportunity for individuals to bypass the political splits of right or left, and to become more ready to recover their sense of attachment for the planet. This attachment becomes the foundation for their sense of protectiveness and environmental justice for threatened species and the bionic community as a whole, and begins to galvanize their commitment to advocate on their behalf.

2) Assist persons to highlight stories about how they came to identify this part of nature as something that they value, and with which they have developed a bond or sense of attachment

As individuals retrieve these narratives from their personal memories and share them with another person, this memory retrieval gives a dimension of history to their biophilic attachment that stretches through time. In developing the constituent elements of ecological narratives (Thomashow, 1996), individuals begin to develop a plot-line of their personal story that has a past and a present, and (potentially) a future. In his research into narrative knowledges, Bruner (1986, 1987, 1990) describes narratives as consisting of a *sequence* of experiences and *events* that unfolds through *time* according to a *plot*, thereby coalescing into a tapestry of *meaning and value*. As their sense of history emerges through these reflections, they may discover that their affection for nature has a reality that spreads through their lives like vines of endearment. Participants in this educational process discover that the part of the Earth for which they feel affection is deeply embedded in their own personal experiences and history.

II Our Environmental Sense of Loss

3) Support the individuals to articulate how they would experience the extinction or permanent loss of this part of the natural realm that they cherish so much, and what it would mean to them if they discovered that its extinction was due to human activity.

This part of the educational process takes individuals directly into their emotional pain and their abiding sense of grief as more of the natural realm is lost through the impacts of climate change, environmental degradation, or species extinction. It uncovers not only participants' sense of guilt and shame about their *past* behavior, but brings individuals face-to-face with the anger and moral outrage about what is being lost in the *present*, and their fear and anticipatory grief about what the *future* holds. In struggling with this question, it is hoped that participants experience the emotional bond that is needed if individuals are to persevere in their protection of life on Earth. As participants reflect on how ecological destruction is due specifically to human activity, individuals' sense of moral responsibility for caring for the ecological communities of the web of life is aroused.

4) Invite them to universalize their sense of loss by imagining that others in the human species would be experiencing a similar loss of what they value, and to imagine what impact this widespread sense of loss would have on the whole human community.

This section serves to move participants out of themselves as individuals, and invites them to place themselves in a larger context of the biosphere beyond their individual concerns. The experience of the bonds of attachment to nature are now expanded and extended into a universal concern shared by the entire human community. As individuals begin to imagine the sheer breadth of the impact of the human species on the planet, and the emotional reactions that many individuals are beginning to experience, participants are encouraged to discover that this sense of loss is both a *personal* as well as a *shared* grief. In touching this emotional distress, participants are also encountering the crisis that current scientists are projecting: an extinction rate of as high as one-third to one-half of species by 2050 within the lifetime of our children and grandchildren, due to habitat loss as it is driven by global warming, pollution, and urban sprawl.

III Weaving our Sense of Biophilic Attachment into our Interpersonal Relationships

5) Encourage the individuals to identify who (an outsider-witness) would be the least surprised to hear about their connection and affection for this part of nature, highlighting the narratives that this other person might share that would explain why they would not be surprised.

This section of the reflection process supports individuals in making linkages between their biophilia and the significant interpersonal relationships that have had a formative influence on the individuals' sense of personal ecological identity. The identity of individuals is not an object or possession, but rather, it is a gift from a history, a network of relationships and community of people, and an ecological place. As participants reflect on who would be least surprised to learn about their attachment to nature (a grandmother, for instance), individuals recover what the anthropologist Barbara Myerhoff (1986, 1992) calls an "outsider-witness," who authenticates the sense of ecological identity, while giving a deeper reality and *history* to the person's attraction to nature.

6) Assist the persons to explore the connections of shared values, commitments or priorities between themselves and this outsider-witness, and how these values and commitments have been enacted in the life and relationships of the persons in the exercise.

Exploring this area serves to strengthen the renewed sense of commitment that surfaces in participants as they re-discover the values and commitments that they share with those who have shaped them as persons. In making these links, participants also deeply sink their roots in their vocation of protecting the environment into a network of like-minded individuals. The analogy is made in the course of the reflection exercises between the practice of passing on physical objects to others as part of a will, and a person's commitment to nature as a spiritual or ethical "will" that is passed on to another person. It is hoped that such an image of an "ethical will" enhances the sense of responsibility needed to be cultivated, if a person is to be worthy of receiving such a set of values as an inheritance from their forbears.

IV Commitment to Action and Engaged Environmental Citizenship

7) Support the persons to identify what specific actions they might take in order to protect the part of nature that they value.

The journey into one's sense of biophilic attachment to nature is not simply an experience to enjoy, but the starting point and foundation for committed engagement in the arena of ecological advocacy. The action of resigning oneself to being a passive bystander, or an ecological "free-loader" (benefiting from the efforts of others protecting and conserving the environment, but taking little or no decisive action oneself) is simply not an option, given the seriousness of the environmental crisis. In becoming engaged environmental citizens, individuals need to become active in many forms of public education and political advocacy. Furthermore, the actions need to be directly relevant to the species or part of nature that individuals wish to protect. For instance, participants are instructed that recycling milk cartons, as helpful an activity that it is, is not as directly related to saving the ecological and social communities in the Canadian Arctic, as is writing the strategically located government ministers to take action on protecting the Arctic.

8) Invite participants to consider who they might join with in order to strengthen their activity, or what community of environmental action in which they will participate that would amplify their actions to protect what they love and value.

McKibben (2007) describes how the mere addition of actions by individuals do not comprise a critical mass for ecological change, especially given the serious time limitations as the impacts of climate change and the deterioration of the environment accelerate. He (McKibben et al., 2007) suggests provocatively that if Martin Luther King Jr. and those struggling for racial equality had continued to desegregate one lunch counter at a time, merely adding up their actions over time, then Obama would not have been elected as President of the United States. Rather than addition, McKibben proposes *multiplication* of our actions for the environment, where the public drama of just and ethical actions of protecting nature through advocacy and education spreads virally through the public consciousness, acting as "salt" to preserve nature and transform society. Because this action of multiplying personal commitment and public impact can only be accomplished through participating in a community of environmental action, participants are encouraged to identify an existing environmental organization that they might join.

9) *Encourage the individuals to imagine what difference it would make for the biotic community on Earth as they take this protective posture relative to what they value in nature, and what impact it will have on them as they take action together with others.*

As part of the concluding reflection exercise, participants are asked to envision or picture the future impact of their actions in the present of protecting the planet's ecological communities. It is easy to be recruited into thinking that one's actions do not count for much, and that it makes little or no difference if one takes action to defend and to protect ecological communities and species. Given this inertia, being empowered to engage in sustained action relies on cultivating a growing awareness of how one's actions both contribute to and are nurtured by the global groundswell of environmental activity.

Future Directions

"Is it possible that humanity will love life enough to save it?" (Wilson, 1984, p. 145)

Future research and ongoing practice will explore in greater depth how this educational process can be enacted as a form of community practice that encourages the emergence of committed environmental citizenship and courageous ecological politics. While a promising outline of a sequence of questions and the beginnings of a rationale have been developed, it is clear that further work remains to be done in order to translate this framework into a coherent and effective environmental educational approach. The demand for an approach that nurtures engaged involvement in restoring the natural world exceeds simple expedience. Given the magnitude and challenge of the environmental crisis, such an approach to facilitating the emergence of environmental citizenship is urgently needed.

Such an educational practice is inherently *transformative*, for, as Coates (2003) suggests, any practice of transformation in the context of environmental decline needs to create the conditions for a personal sense of connectedness to emerge from the "depths of our spirit, which is beyond attachments and social status, where one realizes that one is deeply connected to all being" (p. 95). It is intrinsically *political*, for the complexity of power relations and decision-making, and the resources of all of society are required for this environmental renaissance. But more than all of these, this practice is essentially an *ethical stance*, where the political, environmental, and educational are woven into a tapestry of service to others, both for us as humans and for our biological kin with whom we share the Earth, our island home. Vaclav Havel lay bares the ethical roots of genuine politics:

[it] is simply a matter of serving those around us: serving the community, and serving those who will come after us. Its deepest roots are moral because it is a responsibility, expressed through action, to and for the whole, a responsibility...only because it has a metaphysical grounding: that is, it grows out of a conscious or subconscious certainty that our death ends nothing, because everything is forever being recorded and evaluated somewhere else, somewhere "above us", in what I have called "the memory of being." (Havel quoted in Orr, 2004, pp. 151-152).

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