Making Nature Personal:
Cincinnati Nature Center's Educational Philosophy

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Introduction

In 2010, Cincinnati Nature Center's Education Committee presented a landmark document to the Board of Trustees for approval. Called *Making Nature Personal*, this document was the result of months of research and discussion and explained a shift in thinking about what nature centers like CNC can and cannot accomplish (O'Connor 2010). It presented the philosophy behind how CNC delivers its mission. The original document is available in its entirety for those who are interested.

This second edition of *Making Nature Personal* incorporates new findings, removes dated program information, and improves readability. Specific initiatives and outcomes related to each philosophy are listed in a separate year-end report, beginning with 2012. This report is available upon request.

Philosophy 1: Science-based nature interpretation is more effective than environmental education.

The mission of CNC is: To enrich lives by inspiring passion for nature through experience, education, and stewardship.

Implicit in this mission is that CNC is focused on interpretation. Interpretation is a "communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource" (NAI 2002). Best practices in interpretation include providing authentic, multi-sensory, hands-on experiences. At every opportunity, nature center programs should include an outdoor component and opportunities for the audience to actively participate. One of CNC's guiding principles is that its interpretation is based on science.

There has always been a dichotomy within nature study: scientific research—which is based on quantifiable results—seeks to eliminate emotion and to focus on objective observation, whereas nature appreciation encourages emotional connection to the land (Armitage 2009). This dichotomy can lead to a relaxing of standards in regard to science, and we are ever-vigilant of this danger. We assume our members expect us to model the kind of critical thinking that defines science and truth, even while offering opportunities to connect to nature through emotion. We interpret science in ways that are entertaining and relevant, helping to advance scientific literacy while supporting a growing demographic of people who learn about science in their free time (Falk and Dierking 2010).

We are not the first to recommend that nature centers should be focused on helping people develop their own personal relationships with the environment (Kostka 1976). One may wonder how a focus on emotion is relevant at a time when there are so many environmental problems and so much at stake. Shouldn't we be teaching ways to save the world? That is exactly what the environmental education movement intended to do. The term "environmental education" (EE) was coined in the 1970s to describe an educational approach that developed to address an alarming number of environmental problems. Citizens were supposed to be trained to possess the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward solutions (UNESCO 1976). However, environmental education has failed to bring about the changes in attitude and behavior necessary to stave off the detrimental effects of climate change, biodiversity loss, and environmental degradation that our planet is experiencing at an alarming rate (Saylan and Blumstein 2011).

The National Environmental Education Act of 1990 was aimed primarily at schools, where complex environmental problems and solutions could be explored while integrating knowledge in all subject areas. It supports the view that students must learn to recognize obstacles to high-quality decision-making and acquire skills such as critical thinking to overcome problems as complex as those we face today with our environment (Arvai, Campbell, et al. 2004). However, as David Sobel writes, "environmental education ... wanted to be more like reading and math and science, wanted to be

incorporated into the academic standards. As a result, environmental education got reduced to a set of facts to be mastered, content to be internalized and regurgitated" (2012, p.68). Consequently, EE is seen as one more subject area to add to the curriculum. This is not how it was intended, and it's no surprise that EE is not taught in most schools.

Environmental problems are complex and cannot be separated from social and economic issues (Hawken 2007). Children should be educated to be productive members of society, with skills in critical thinking, civic responsibility, and leadership, in addition to knowledge in various subject areas and current events. CNC can contribute to some subject areas, such as biology and earth science, while modeling inquiry and critical thinking and inspiring an interest in learning.

By the time students reach adulthood, they may be aware of environmental problems, while acting only in small ways such as recycling of consumer goods or line-drying their laundry. Most Americans agree that nature is threatened by a variety of problems (ACEVS 2011); however, we are left wandering in the dark about solutions. What skills are most essential? Which behaviors? We don't want to either overwhelm people with bad news and guilt or encourage complacency by over-simplifying answers (Jensen 2009). Comprehending and solving environmental problems requires knowledge of politics, consumption, educational and legislative institutions, economics, psychology, and science. Citizens need to understand, visualize, and use their collective resources to solve problems. Therefore, when programs or exhibits focus on simple behaviors such as ten small steps you can do today, these suggestions are often ignored (Clayton and Myers 2009). And yet, people are overwhelmed with information and have little time or energy for more. The problems affecting education, and consequently society, are too complex to be quickly understood. If the solutions were simple, the problems would have been solved by now (Saylan and Blumstein 2011).

Research indicates that people can have positive values about nature and a fair degree of knowledge, but still not act in ways considered responsible towards the environment (Bixler, Floyd, and Hammit 2002; Ham 2007). They will act only if they believe that a desired outcome will result from their action and if the barriers to that action are worth overcoming. In addition, people tend to refer to only those perspectives that fuel pre-existing views, and their beliefs or behaviors are rarely influenced except by someone familiar and trusted (Schulz 2011; McKenzie-Mohr and Smith 1999).

When environmental organizations provide general information about a broad range of problems and solutions, social marketing research indicates that behavioral change cannot be expected. If an organization chooses to target behavioral change, it must identify a small group of very specific behaviors, identify barriers against and motivations for those behaviors, and develop a strategy to remove barriers and provide motivations (McKenzie-Mohr and Smith 1999). So what behaviors should CNC hope to influence?

Philosophy 2: Empowering nature enthusiasts to share their values can have a positive impact on the broader community.

Nature centers typically have a local focus and a small reach. They should be realistic about behaviors they hope to influence. Rather than tackling education reform, climate change, or other global problems head-on, CNC is best positioned to offer support to nature lovers—which for CNC means current and future members.

CNC has selected one key behavior to foster within its membership: to share values for, experiences in, and knowledge about nature with others. This choice is critical because it hinges on the power of influence. Social marketing theory tells us that people are more likely to change their behavior after having conversations with people they know and trust, coupled with a public declaration about how their actions support their beliefs and values (McKenzie-Mohr and Smith 1999). As members share their experiences in and knowledge about nature, they are reinforcing their own positive values about the natural world while potentially expanding the reach of CNC well beyond its membership. Exposure to nature may encourage people to value community and relationships and feel more altruistic (Weinstein, Przybylski, and Ryan 2009). Nature may inspire members to take action, personally or collectively, for the sake of a better world.

CNC is a resource for nature lovers just as a library is a resource for learners. It's a place where we initiate, reinforce, or extend a person's interest in nature. In addition, it's a place where nature enthusiasts experience a sense of community around a shared value: a love of nature. Research indicates that people are more likely to take collective action if they have strong social ties and higher social status (Bandura 1997). This collective action is necessary to solve environmental problems. CNC strives to provide a community where people experience social acceptance and status because of their values toward nature—values that might be mocked or ignored elsewhere in their social circles. At CNC, we embrace nature nuts and our audiences laugh and sigh with relief to hear this. Some have said, "It's like coming home."

Social groups protect and reinforce group interests (Bixler 2001). When social subgroups such as recreationists, hobbyists, and environmentalists are encouraged to engage with and influence one another, everyone can benefit (Bixler, Floyd, and Hammitt 2002; Bixler and James 2005). Some visitors may enjoy the opportunity to interact and add their own voices to discussions about information presented by the organization, preferring social and creative recreational activities over non-social, non-participatory programs such as lectures (Simon 2010). While a more community-based approach may not be appropriate for everyone, and certainly there are people who visit CNC particularly for solitude and quiet, there are times when interaction among our members will accomplish exactly the effects we want: stronger nature values, increased nature knowledge, and more enjoyable experiences outdoors.


Building Good Char

Philosophy 3: Children should get outside frequently, starting at an early age.

In Last Child in the Woods: Saving Our Children from Nature Deficit Disorder, Richard Louv presents a compilation of research that indicates there are many benefits for children who play frequently in nature, including resilience to stress, increased creativity and ability to concentrate, better scores in school, improved fitness and coordination, and overall good health (2005).

Nature needs children just as much as children need nature. Louv writes, "The protection of nature depends on more than the organizational strength of stewardship organizations; it also depends on the quality of the relationship between the young and nature—on how, or if, the young attach to nature" (2005, p.154).

Studies show that frequent positive experiences in nature at a young age will help children grow into adults with positive values toward nature (Tanner 1980; Bixler, Floyd, and Hammitt 2002), although these experiences alone may not lead to positive environmental behaviors (Vadala, Bixler, and James 2007) because, as previously discussed, barriers against or motivations for a particular behavior are complex.

Research suggests that programs must offer at least ten hours of contact to create a lasting influence on knowledge and values (Zelezny 1999). CNC takes this into account when planning programs, putting more resources into those programs and services that provide the most contact time, and encouraging parents to extend their child's experience beyond CNC.

Children should begin to have positive experiences in nature early in their lives. Ruth Wilson (1996) asserts that the first few years are when children are developing the values and attitudes that they will carry throughout their lives. A child must develop a sense of respect and caring for the natural world when he/she is three to five years old or be at risk of never having such attitudes (Sobel 1996).

Early childhood is the time to "prepare the soil," according to Rachel Carson (1956). The preparation itself consists of extensive time spent in nature because young children develop emotional attachments to what is familiar and comfortable (Wilson 1997). Many believe that since humans evolved in the natural world, children are born with a connection to nature (Wilson 1984; Sobel 1996). If regular contact with nature is not provided, they may grow up seeing themselves as separate from the natural world and may develop attitudes of domination or fear (Sobel 1996).

John Burroughs wrote, "Knowledge without love does not stick; but where love comes first, knowledge is pretty sure to follow" (1919, p. 28). Ken Finch from the Green Hearts Institute for Nature in Childhood says, "There is no lack of readily available knowledge, and never will be again. The key is to want that knowledge. And how do children come to want a deep knowledge of nature?

The same way it has always happened, by making nature a cherished part of their personal lives" (2009, personal communication).

Emotion plays a key role in determining where people put their attention (Webb 2000). Nature education for children six to ten years of age should focus on the affective realm, emphasizing emotional concern and sympathy for animals (Kellert 1985). The emerging field of anthrozoology examines the complicated and sometimes inconsistent relationships we have with wild and domestic creatures. A child's response to a non-human animal is likely to be a mix of evolutionary psychology (e.g., an innate fear of snakes) and societal norms, or how parents and other role models respond to a particular animal (Herzog 2010). The adults in a young child's life have control over that child's access and connection to nature.


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Philosophy 4: Family members and other significant adults in children's lives are the best role models to connect them to nature.

Time spent in nature with a knowledgeable adult role model is an important influence for young environmentalists (Sivek 2002). A caring adult who models love and respect for nature can have a powerful and lasting influence on a young child's positive values toward nature (Tanner 1980; Chawla 1998). Children also learn best in environments that are familiar to them (Nabhan and Trimble 1994). For this reason, CNC focuses on providing ways for families to experience nature together, often with parents, grandparents, or teachers at the helm. In addition, parents play a strong indirect role in preparing their children to benefit from environmental education or related subjects by providing them with unstructured, self-directed experiences in nature (Vadala, Bixler, and James 2007).

In the early 1900s, nature educator and conservationist Anna Comstock realized that nature study would not survive in schools, but rather in camps, during vacations and leisure time, and in youth organizations (Armitage 2009). Parents need to understand the value of providing such opportunities for their children, and school programs are one way for CNC to reach parents about the importance of getting their children outside.

There is a growing body of evidence that people learn science in settings and situations outside of school. A 2009 report on informal science states that even everyday experiences such as a walk in the park contribute to a person's knowledge and interest in science and the environment (Bell, Lewenstein, et al. 2009). A field trip to CNC, while often a stand-alone experience, may inspire a love of learning about nature and science. Parents should be encouraged to support that love of science and to provide opportunities for their children to get outside to reinforce it.

CNC is mindful that children need support of their enthusiasm for nature throughout their lives, including as they transition from childhood to adulthood. CNC, like many nature centers, struggles to find ways to serve youth in their teen years. It's not uncommon for CNC to serve children regularly until they become teenagers, at which point they disappear until resurfacing as adults years later. Since teens are especially sensitive to the opinions and support of their peer group, programs designed for them should provide social opportunities that connect them to one another around nature-related hobbies or adventure (Arnold, Cohen, and Warner 2009). Teens are most responsive to interest-based activities, creative problem-solving, and hands-on experience (Peterman 1990), all of which CNC can provide. CNC should help teenagers who enjoy nature to connect with one another, either through CNC programs or by referring them to adventure-themed organizations which serve this age group.


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Philosophy 5: Enthusiastic school teachers are important allies in connecting children to nature.

Because of the relatively short time students spend with its staff, a nature center cannot lead environmental education efforts; nevertheless, it can be a resource for teachers (Larsen 2002). Even if environmental education seems irrelevant to teachers' current goals, nature is not. Outdoor education should be part of every teacher's toolkit. Outdoor education is an approach to instruction, rather than a content area. Its sole specification is the place for learning: outside the school building (NCEET 1994). National Wildlife Federation's 2010 survey of educators revealed that 75% believed students who spend regular time outdoors tend to be more creative and better able to problem-solve in the classroom (NWF 2010). Educators know that children learn best through direct experience with real objects, where their natural affinity for investigation and inquiry can be fostered. Research indicates children are more inventive and creative when exposed to a large number of environmental variables (Ramey, Campbell, and Nicholson 1973). Outdoor education can be as simple as teaching a reading lesson while sitting in the grass, or it can actively engage children in exploring nature and applying it to a particular subject area. Nature can be used to spark interest in subjects as diverse as social studies, mathematics, literacy studies, and art, in addition to the traditional use of nature to teach life and earth sciences. Today, as in the past, the main purpose of outdoor education is to provide meaningful contextual experiences that complement and expand classroom instruction (Woodhouse and Knapp 2000).

A 1998 study of schools using the environment as an integrated context for learning found that students had higher standardized test scores in reading, writing, math, science, and social studies, fewer discipline and classroom management problems, increased engagement and enthusiasm for learning, and greater pride and ownership in their accomplishments (Lieberman and Hoody 1998).

Field trips have more long-term impact on values and/or knowledge when reinforced by the teacher with pre- and post-trip classroom activities (Clayton and Myers 2009). Since teachers are more likely to incorporate instruction about the environment into their curriculum if they have had positive informal experiences in nature themselves (Plevyak, Bendixen-Noe, et al. 2001), nature centers should facilitate such experiences. And because teachers' subject-matter knowledge is a robust predictor of student learning outcomes, nature centers should also provide teachers with information and methods to reinforce and extend the experience back at school (Enfield & Rogers 2009; Kennedy 1998; Wilson, Floden, and Ferrini-Mundy 2002). Finally, CNC believes an effective school-based program should also encourage parents to participate: children do better in school if they have parental support and involvement.

Because people are most influenced by those whom they know and trust, CNC asserts that school teachers can play a vital role in helping children develop positive values about and comfort in nature.

CNC's primary effort is to deepen our relationships with teachers and to extend the services we provide to them; our intent is to inspire and train them to make the most of their field trip to CNC and to incorporate nature more fully into their curriculum as well as in their personal lives. CNC supports those teachers who already have a personal interest in nature and seek assistance in taking it further.

Studies of a teacher training program in Pennsylvania indicate that its success was partially due to the fact that adoption of the program was teacher-driven. The teachers' subsequent interest in and enthusiasm for it led to eventual administrative support, a component which is critical to program growth and maintenance (Kenny, Militana, and Donohue 2003). By providing inspiration and support to teachers, CNC anticipates that they will share their nature experiences, knowledge, and values with their students and colleagues. Teachers are encouraged to create a demand for real-life learning in nature that might also inspire their administrators.

Summary

CNC believes that by supporting and strengthening the bond of people with nature, we better enable them to share their values for, experiences in, and knowledge about nature with others. This approach is intended to increase the overall number of people who feel connected to nature. CNC encourages positive values toward nature for people of all ages, so that throughout their lives, their behaviors will increasingly reflect these values.

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