

# A While in the Wild: Educating for Environmental Empathy

by  
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*On a visit to the coulee, a startled owl exploded off of a nest that we thought was empty. On the bus ride back to school, one boy reached for my hand, "Feel my heart," he said. "It's still going really fast."*  
—from the Cayley School action research project

Since the 1980's, researchers in environmental education have explored this basic question: Why do some people care about the natural environment enough to protect it, while others do not? Current environmental education,

taught as a unit of instruction within the science curriculum, tends to assume that imparting information about the environment will inspire students to care for it. But a generation of young people educated in this way has not yielded a generation of adults committed to caring for the natural world.

The people of Cayley School, situated in a rural hamlet about one hour south Calgary, Alberta, struggled with a similar dynamic. In the spring of 2005, the teachers, parents, community members, and students of this small school (150 students in kindergarten through eighth grade) met with the Stewardship Centre of Canada to explore what their school could do to foster care of the natural environment.

The Youth Environmental Stewardship Program (YES) was born, sparking much activity at Cayley School. The school maintains ten photovoltaic units and a small wind turbine to provide three kilowatts of power to the grid. Students and staff participate in a thorough recycling program. An environment club meets weekly. Classroom instruction pursues cross-curricular inquiry into many environmental issues. Recognized in the media, and given multiple awards for environmental projects, Cayley School has laid strong ground work for meeting the goals of the YES project.

However, in a meeting of YES stakeholders in the fall of 2007, consensus emerged that the specific vision of the program—shaping students toward lifelong leadership in environmental

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## A While in the Wild *(continued)*

stewardship—was not being realized. Students did not display a general ethic of stewardship, nor were they eager to fill leadership roles in the YES program.

Thorough environmental instruction combined with exciting school-wide environmental projects had failed to translate into genuine environmental stewardship. Why? There it was again, that thirty-year-old question: Why do some people care about the natural environment enough to protect it, and others do not?

### **Where does environmental stewardship come from?**

Researchers in the field of environmental education have approached that question in a variety of ways. Tanner read the biographies of conservationists looking for patterns in their early experiences that might explain their lifelong care of the environment. In these biographies, and in a subsequent survey, he discovered that conservationists consistently report having spent a significant amount of time as children in wild or semi-wild places.

Subsequent studies had similar findings: time spent in wild or “domesticated” nature correlates significantly with subsequent environmentally responsible behavior. Wells and Lekies investigated the optimal age for these experiences and concluded that, “participation with ‘wild’ nature before age 11 is a particularly potent pathway toward shaping both environmental attitudes and behaviors in adulthood” .

Many of these studies discovered that when these nature

experiences are shared with an important adult—a family member or a teacher—positive environmental behaviors are strengthened. During shared experiences in nature, a child becomes aware of the environment by attending to the bird, leaf, or rock that has captured the attention of the adult companion. Chawla calls this the power of joint attention. The child turns his or her attention to things pointed out by an adult, and then begins to do the same, pointing at things and calling out their names. An adult

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noticing nature helps a child take the first steps toward becoming environmentally aware.

Shared adult/child experiences in wild nature moves a child into a process by which stewardship behavior develops. The stages of that development can be compared to the evolution of a loving relationship between

two people. In both cases there is a five step process: awareness, knowledge gathering, coming to appreciate, coming to love, and acting to protect.

Once the child has become aware of the natural environment, through the power of joint attention, she begins to gain knowledge about nature by interacting with it, by experimenting first-hand. The theory of ecological psychology describes how the natural world provides opportunities for interactive learning. For example, a low tree branch allows a child to climb; rough ground affords the opportunity to establish balance. Nature offers a rich environment for these interactions, and provides immediate and often powerful feedback to all of the senses. Free play in nature, then, begins a relationship between the child and the natural world.

First a child is exposed to nature, then, he spends times interacting with it. Now he is ready for the knowledge building activities he finds in environmental education curricula in the schools. Students learn facts about the local environment from books and teachers. The more this learning serves to directly explain, support, and deepen the students’ hands-on outdoor experiences, the more meaningful it is.

The more children learn about a place the more they appreciate it. Going forward, they maintain interest in it and show simple, environmentally responsible behavior when they are there. Lindemann and Matthies found that the more plants and animals children could identify in the field, the more appreciation they would show for all kinds of plants and animals. Increased knowledge of nature leads to increased appreciation of nature. Increased appreciation sparks more frequent visits to the natural world and increases the length of each visit.

Appreciation deepens to a feeling of love as the child begins to identify and empathize with the natural world. Once that attachment is formed, the child consistently exhibits environmentally responsible behavior in that place. Attachment to one special place will often generalize to changed behavior in other settings.



Unfortunately, most children today have little, if any, experience in wild nature, with or without a significant adult. In his fifteen years of interviewing families across the United States, Louv found:

*“With few exceptions, even in rural areas, parents say the same thing: Most children aren’t playing outside anymore, not in the woods or fields or canyons. A fifth-grader in San Diego described his world succinctly: ‘I like to play indoors better ‘cause that’s where all the electrical outlets are.’”*

As outdoor experience becomes less common, environmental education gains importance. It is here that children can be reconnected with “the restorative, challenging, primal qualities of nature” and guided through hands-on, personally meaningful activities, that construct an empathetic knowledge of the natural world.



children’s relationship with the natural world shows three clear stages of development. From age four to six a child connects with the immediate world through his empathy for living things, particularly animals. From age seven to eleven the child’s desire to explore becomes stronger—exploration activities become appropriate. It is not until the age of twelve that students typically can begin to deal with tragedies, so at this age social action can become a focus.

Environmental education that is developmentally insensitive can do more harm than good. Sobel especially cautions against introducing ecological problems to a child who has not developed the power of abstract thinking. Such premature calls to action will distance the child from

the natural environment.

Developmentally appropriate curriculum, on the other hand, nurtures a strong connection to the natural environment in stages. First a child connects with her immediate environment, then to an expanding local landscape, and finally to the global environment. Formed in those experiences, she takes action when she is ready.

### **Effective Environmental Education—three considerations**

Experiences in wild nature shared with an important adult are vital components of successful environmental education. Further studies insist, however, that they are not the only considerations when designing experiences aimed at forming an ethic of stewardship.

Effective environmental education programs share several common features: they are experiential and personally meaningful; they are developmentally appropriate; and they provide opportunity both for deeper understanding and for the application of new insights.

### **Experiential and personally meaningful**

John Dewey, in 1891, articulated the importance of building connections between school and personal life:

From the standpoint of the child, the great waste in the school comes from his inability to utilize the experiences he gets outside the school in any complete and free way within the school itself; while, on the other hand, he is unable to apply in daily life what he is learning at school. That is the isolation of the school, its isolation from life.

Duffin and Gostev and Weiss show that environmental education programs that succeed in increasing environmentally responsible behavior provide students with hands-on learning and abundant opportunities to make personal connections.

### **Developmentally appropriate**

Developmentally appropriate research investigating

### **Opportunities for deeper understanding**

Environmental education explores situations where the “correct” answer can be ambiguous. Students become equipped to respond to such complexity when, in the context of nature, they are coached through a process of assessment and judgment. Educators begin by teaching basic environmental knowledge, but the process does not stop there. Students learn to weigh the competing values that often make environmental decision-making difficult. Such experiences equip students to take action and allow them to assume increasing ownership of environmental problems. Students feel empowered and confident as they apply knowledge to action. Students who have been coached in this way—prepared to think critically when faced with complex problems—are more likely to exhibit complex, environmentally responsible behavior.

### **Developing environmental empathy at Cayley School**

Armed with research and eager to realize Cayley School’s vision to foster environmental stewardship, we designed a five-month environmental experience for the kindergarten class. From October ‘07 to March ‘08 fourteen five and six year olds, eight boys and six girls of mixed socio-economic circumstances

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## A While in the Wild *(continued)*

and academic and social ability, participated in a place-based environmental education model aimed at building environmental empathy and responsibility.

Because research emphasizes the powerful outcomes of time spent in wild nature with an important adult, our program design involved frequent outdoor experiences led by the kindergarten teacher. There were two components to the outdoor experience. The class frequently visited and explored natural environments within walking distance of the school. We also designated a more distant, wilder location (fifteen minutes away by bus) as Our Special Place and visited it several times throughout the duration of the project.

### **Time in wild nature**

Outdoor experiences in the surrounding environment happened daily. These were initially scheduled for the same time each day in order to create a habit of outdoor learning time. As outdoor time became entrenched in the day, access to the outdoors became more spontaneous and flexible.

Planned outdoor activities were drawn from resources such as Thomson and Arledge. (2002). *Five Minute Field Trips: Teaching about Nature in Your Schoolyard*; Cornell, J.B. (1979). *Sharing Nature with Children*; and Sobel, D. (2004). *Place Based Education*. Planning was informed by Wilson's (1986) guidelines: begin with simple experiences, provide frequent positive outdoor experiences, and focus on experiencing versus teaching.

The schoolyard at Cayley School offered many rich opportunities. Off the gravel of the play structure, there is a terraced, bushy Memorial Garden, big poplar trees, long grass, and ready access to fields. A fifteen minute walk north of the school yard offers a hay field and slough. Activities in the schoolyard and at the slough were planned with "wildness in mind" in order to maximize the positive influence of wild nature mentioned in the literature. Over the course of the five month study, a new subdivision being built north of Cayley expanded toward the slough and blocked the walking path for two weeks. The new construction presented an unexpected opportunity for conversation and questions.

Five times over the course of the project the class visited Our Special Place, an intact buffalo jump surrounded by native grassland called "Women's Coulee." We timed our visits so that students could experience the coulee across the seasons--late fall, winter and spring. Our activities at the coulee mirrored our daily outdoor activities within Cayley; however the trips to the coulee were far richer and more spontaneous due to its diversity and wildness. On one trip the students were able to study large, perfectly formed snowflakes that covered the ground. On another the group startled a female great horned owl off of a nest that we had assumed to be empty. On a return trip, with binoculars to study the owl, the students found prairie crocuses blooming.

### **An important adult**

Remembering the role of a significant adult in shaping environmental responsibility, we carefully considered the teacher's contribution to the children's experience. The teacher enthusiastically supported the children's budding sensitivity for wild places, demonstrating personal interest and enjoyment, and

modeling care and respect for the natural environment. In order to broaden the network of important adults, parents and other community members were invited to join as assistants and fellow nature-learners.

### **Supporting nature experiences in the classroom**

We made changes within the classroom to support our outdoor experiences. Curricular instruction integrated environmental themes. The space and routines within the classroom were also re-designed. Following their explorations, students came into the classroom to record their observations and research their questions. Reference books were readily available. Art materials were on hand to encourage students to represent their nature discoveries with their own hands and in various media. Nature journaling became a regular part of the experience as it is "hands-on learning at its best".

The room decorations reflected a focus on our natural place, as well as the human penchant for displaying nature in interior spaces. Natural materials were used as much as possible. Students were given an opportunity to share nature treasures on a well-lit discovery table at their viewing height.

### **Outcomes**

Quantitative and qualitative data, gathered in pre-tests and post-tests, show that the kindergarten children at Cayley School built greater knowledge, developed keener interest, and formed more positive attitudes toward the natural environment as a result of our five-month trial.

Asked to identify the photographs of 16 local native animals in a pre-test and post-test, the group increased their correct answers by 32 percent. An increase in animal knowledge is a very powerful first step toward environmental stewardship. Lindemann and Matthies found that the more plants and animals children could identify in the field, the more appreciation they would show for all kinds of plants and animals.

An attitude questionnaire administered as a pre-test and post-test, measured the students' empathy and emotional affinity with the natural world. Questions were designed to explore their concern for animals and plants, their participation in animal make-believe, evidence of love of nature, and whether they have feelings of freedom, of safety, and of oneness while in nature. A response of "no" to a question such as: Is it a good idea to pick wildflowers? was marked "positive" because it showed a protective attitude toward the natural environment. Positive student responses on the attitude questionnaire increased 23% on the post-test.

When students were invited to explain why and why not on their answers to the post-test attitude survey, an interesting change emerged. Many students took longer to answer the questions than they had on the pre-test, now having to sort out an issue that was no longer obvious to them. For example, on the pre-test many students quickly and confidently stated that the spider should not be put outside, but should be killed. On the post-test students talked about the fact that spiders might bite or make a mess with their webs, explained methods for picking the spider up, and considered carefully before giving their response. Some students felt the need to explain behaviors that they now felt were inconsistent with what we had been learning. When

asked if it was a good idea to pick wild flowers, some explained that they did pick wild flowers, but only in places where there were lots of flowers.

Prior to and again following the trial, students drew a map showing special places that they could go to around the school. Pre-test maps showed a fairly equal representation of natural and man-made features. On the post-test, however, 83% of the features drawn on the post-test maps were natural. There were no animal drawings in the pre-test maps, but animal drawings were included in almost all of the post-test maps. The scope of the maps also expanded. Pre-test maps were almost all restricted to the boundaries of the school yard. The post-test maps showed a much wider geographic scope, indicating a broadening view of the world around the school and an expanding awareness that other creatures live in the places close to us.

### Implications

The children of Cayley School kindergarten will perhaps never forget the excitement of seeing a startled owl explode off of a nest that we thought was empty. One boy said to his teacher on the bus ride back to school, "Feel my heart. It's still going really fast." The children who participated in the project developed a genuine, excited sense of connection to the natural world. They became eager to learn more. They developed more complex environmental thinking and showed a willingness to consider their decisions in relation to nature much more carefully.

Our educational trial brought the people of Cayley School closer to the vision they formed back in the spring 2005 when the Youth Environmental Stewardship Program (YES) was born. Experiences in wild nature, the leadership of a significant adult, and the educational support of the classroom offer powerful tools in shaping students toward lifelong leadership in environmental stewardship.

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