A Call to Action by the
Nebraska Department of Education (NDE) and
(Additional Supporters to Be Named)
Arbor Day, 2008

…children are disappearing from the outdoors at a rate that would make them top of any conservationist's list of endangered species if they were any other member of the animal kingdom. Tim Gill, British play advocate in *The Ecologist*

Re-Connecting the World's Children to Nature

Introduction

I suspect that the child plucks its first flower with an insight into its beauty and significance which the subsequent botanist never retains.
Henry David Thoreau, American Naturalist

A child's experience in the natural world can be as small as helping to plant a roof top garden, sitting under, in, or around the single tree in sight, or listening for the sound of the bird. Spending time in a natural environment has been documented to improve life and learning in many ways. Sadly, such a connection with nature has been slipping away from many of us—and especially so for the world's children.

Initiated by the Nebraska Department of Education, this paper calls upon families, educators and community leaders worldwide to become as children and rediscover the benefits of paying attention to nature—and to take action to strengthen children's connections to nature--making developmentally appropriate nature learning experiences a sustaining and enriching, fully integrated part of the daily lives and education of the world's children.

This paper is intended to underscore both the principles and the research that help us all understand that experiencing and learning about nature are essential to fully realizing our humanity. For children, from infancy onward, discovering their own humanity and its relationship to nature begins very early in life.

> The term 'nature learning' is used in this paper to encompass both spontaneous and intentional learning experiences that occur when young children interact with the natural environment—sometimes on their own and sometimes with the assistance of adults.

The expansion of educational opportunities for young children has often meant a shift in practices in home-, school-, and center-based care and education settings and in teacher education. Many of these practices are beneficial. They provide thoughtful, intentional instruction and encouragement as children learn. However, some of the practices are having a detrimental effect. An overemphasis on the standardization of learning outcomes, inappropriate and excessive assessment, and the narrowing of attention to development in the multiple domains of learning are a few of the concerns. Educators report feeling the pressure to become standardized in their teaching which leads to remarkably sad effects in classrooms of inquisitive young children. These practices limit opportunities to reconnect children to nature and to learning more about it. They raise important questions.

In the midst of these concerns, what is the best way to help children learn about the world in which they live? How can we raise children who care about their earth if they do not first have an opportunity to learn to appreciate and investigate it? The topics and complexity of study for younger and older children are different. Young children will come to learn about the strength and diversity of species in a much different way than older students. However, both should be exposed to many elements of the natural world and have an opportunity to develop a sense of their surroundings so that they grow to understand that nature <u>does</u> matter. Especially, young children cannot find this kind of experience inside. Reading about the way the plant grows is never the same as digging the dirt, planting the seed, spilling a little water when caring for it, and watching it daily for some sign of growth and life.

Yet, a curious aspect of contemporary life is the seemingly mass refusal to pay attention to well-established recommendations for healthier or more beneficial behavior. Examples abound in areas of health and energy management. Similarly, respected national and international organizations are unwavering in expressions of concern about present trends toward limiting play and the standardization of learning, including the American Academy of Pediatrics, the American Psychological Association, and the National Association for the Education of Young Children (Ginsburg, 2007). This paper addresses a specific and troubling aspect of these trends—the loss of children's access to and experience with the natural world. Because—when we choose to listen, the voice of nature is powerful and unique.

We do know that reconnecting babies, toddlers and young children to the natural world:

- is crucial for their optimal intellectual and physical development;
- provides a sense of refuge and healing in a sometimes violent and frightening world;
- helps them grow into adults who care about environmental stewardship; and,
- nurtures a sense of shared community among the world's peoples. (NACC, 2007).

The National Science Teachers Association position statement (2000) calls for a richer approach than is often seen in stating that:

- *no single universal step-by-step scientific method captures the full complexity of doing science;*
- *creativity is a vital, yet personal, ingredient in the production of scientific knowledge;*
- *with new evidence and interpretation, old ideas are replaced or supplemented by newer ones; and*
- *while science and technology do impact each other, basic scientific research is not directly concerned with practical outcomes, but rather with gaining an understanding of the natural world for its own sake* (NSTA 2000).

As adults, we should be opening the doors and providing young children opportunities that fully connect them to the natural environment so they can gain an understanding of the natural world in as many educational and recreational settings as possible. *We cannot start too soon!*

A Call to Action

The Nebraska Department of Education (NDE) and (other agencies/ organizations to be added) support the conclusion that children and youth of the world benefit in many ways and across multiple domains of learning and development when they become more connected to the natural world around them. They will grow healthier, wiser, and more content when they are more fully connected throughout their childhood to the natural environment in as many educational and recreational settings as possible. These benefits are long term and significant and contribute to their future well-being and the contributions they will make to the world as adults.

This call to action is written to the adults who spend time with children in a variety of roles, and to the community, national, and world leaders who plan for their future. We add this voice to others that call on us to enable children to become more connected to the natural world around them.

Scientists, physicians, educators, naturalists, landscape architects, city planners, artists, and historians have built a foundation for our thinking. We cite their works and support their continued efforts on behalf of children and the strengthening of their interactions with the natural world. Like nature herself, diversity builds strength. As we live together on the same planet, use the same natural resources, we also share the choice to work together to make the changes that are suggested here. As adults we make decisions each day that either minimize or promote children's ability to connect—not solely through technology—but to the living, natural world which is increasing being left out of the culture of childhood worldwide.

What Leads Us to this Belief that Connections to and Experiences with the Natural World Are So Important?

There is an emerging awareness and concern that children are less and less likely to have experiences that involve the simplest interactions with nature—the plants, animals, and the earth around them—as a part of their continuous learning process. As we look at the children around us, we observe them living increasingly unhealthy lifestyles. For many, childhood is spent overly plugged-in and programmed inside their homes, schools, and community settings in human-made environments, eliminating the out-of-doors, the benefits of nature, and all that exists in the natural environment (Wike, 2006).

> *There is nothing inherently dangerous about a boulder, there is nothing inherently dangerous about a chasm you leap over, nothing inherently dangerous about ... a little stream, there's nothing inherently dangerous about a walk in the woods. There's nothing inherently dangerous about digging in the sand or dirt. You can use all those settings on purpose to hurt yourself. But if you take some care along those lines these things are very, very safe.*
> Ron King, Natural Playground Designer

Even a generation ago, children spent more time outside, because it was the normal thing for children to do. Adults did not question the value of time spent out-of-doors and had much less anxiety about the risks involved. Children walked and played outdoors and planted things in the dirt; they rode their bikes, invented games, and spent the majority of their time in less structured activities and natural environments. Very young children carried out these activities in their yards and immediate neighborhoods. Urban environments offered the occasional playground and vacant lot. Older children roamed beyond their neighborhoods to adjacent lands, streams, woods, or urban parks. Exposure to the natural world brought opportunities for children to make sense of their surroundings and to develop their own sense of 'place.'

Over a relatively short time, we adults have allowed this connection to the natural world to slip gradually away from children's lives. Evidence of this trend surrounds us:

- Children now spend nearly 30 hours a week watching a TV or computer screen, listening to something through headphones or, for older children, using cell phones or media players (CDC, 2005; Ginsberg *et al*, 2007). (Note: the several comments about overuse of technology in this paper should not be interpreted as a rejection of technology in children's lives; it is a matter of balance; ever more, the balance is moving in an often unhealthy direction.)

- Children experience increasingly timed and structured family lifestyles with less emphasis on unstructured outside time. Particularly in more densely populated countries, urban growth has eliminated green spaces and natural environments. The proliferation of air conditioning in more affluent countries has had an impact on the way children and adults experience and perceive the outdoor environment (U.S. Census Bureau statistics in Louv, 2005, pp. 56-7). Children living in unsafe urban areas are kept indoors to protect them from neighborhood violence; too many of the world's children are kept indoors to shield them from armed conflict. Fewer families are vacationing in national parks (Fish, 2007). Together these changes keep many children separated from nature and without time for solitude or unprogrammed experiences.

- In America, two of every ten children are clinically obese, and child obesity rates are increasing at an alarming rate—almost fourfold in three decades (Perrin *et al*, 2007). This is occurring at the same time that there is the greatest increase in organized and commercialized sports for younger and younger children.

- There is a steep increase in the use of behavioral drugs in preschool children surpassing the use of antibiotics and drugs for childhood asthma. Drug use for conditions such as ADHD is skyrocketing (CDC, 2005). Currently eight million children in the U.S. have mental disorders with ADHD a prominent diagnosis (CDC, 2005).

- Instructional time outside, recess, or unstructured playtime is being eliminated from the school day (Clements, 2007).

- Outdoor play spaces or playgrounds have become safer at some sites due to national playground standards, but in other locations, play spaces have been eliminated or often lack the natural elements that encourage a different kind of interaction among children (Moore & Wong, 1997).

- The curriculum for children in centers and schools is becoming narrower, with more time spend on teacher-directed lessons and testing and less time spent investigating and learning through activities that build on a child's sense of wonder, curiosity, and the benefit of first-hand experiences (Hyson, 2003; McMurrer, 2007; Marcon, 1999).

- On a global scale, children in underdeveloped countries live with general ill-health and illness and the loss of family and home due to both war and poverty. More than half of the world's children will live in an urban slum and never be exposed to a natural environment versus a human design (UNICEF, 2002). Underdeveloped counties are experiencing rapid deforestation with its attendant degradation of the natural environment and children's access to it (UNICEF, 2002).

Consequently, we have gradually found our children growing up in a clash of optimal and minimal learning opportunities. Optimally, technology opens worlds never before so readily available to children; however, the opening of this side of learning has contributed to shutting the door to children's access to the more natural environment that gives a lasting attachment to children's sense of place and their awareness of the habitat and environment nearest to them. This lack of connection can engender both apathy and ignorance in children's early perceptions of the world around them and their roles in enjoying, learning from, and protecting it.

Guiding Principles for Reconnecting Children to Nature

This paper calls for action by adults to make a commitment to protecting and promoting children's interaction with nature. To support nature learning experiences in centers, schools, and communities requires an intentional examination of all possible opportunities. To implement these enriching experiences both indoors and out, the following principles should guide the actions and decisions of adults:

1. Children will have time out-of-doors in nature that is spontaneous and unstructured, with peers or family. Such settings should promote observations and discovery and foster creativity and imagination.

2. Adults will create opportunities to promote nature learning which is likely to be at least semi-structured, using nature as the source of learning and inquiry (e.g., in forming the foundations of various arts and sciences).

3. Children will have daily opportunities to experience the land, water, and living things in their surroundings. It is through these natural experiences that they will develop both an attachment to and an understanding of their world and of other species.

4. School and community project work will include an active, hands-on approach to nature and the opportunity to develop integrated natural science knowledge. Engagement in the natural environment will allow for exploration and meaning-making experiences since both intentional learning and spontaneous activities build awareness and observational skills in children when outdoor spaces are rich with things to experience. (Faber Taylor, *et al*, 1998; Kirby, 1989).

5. Nature learning experiences will be developmentally appropriate recognizing that young children (prior to age nine) need experiences that support their natural affinity with nature and which are directly accessible to them (e.g., learning about birds in the neighborhood

rather than those in a far off jungle). Without an opportunity to experience, children will not have an opportunity to develop appreciation or connections. Children should not be flooded with only negative facts and concerns about the earth before having a chance to develop their own sense of place. In middle childhood, children can begin to address more complex concepts such as loss of species (White, 2001).

> *Key findings of a case study of . . . preschool and kindergarteners' learning when they were engaged in hands-on activities in the garden and greenhouse areas of a model outdoor classroom suggest that . . . they are (1) communicating their knowledge about the world to others, (2) conveying (and learning to process and manage) emotions, and (3) developing important skill (e.g., initiative, self-confidence, literacy, math, science skills) that will help them be more successful in school and better navigate the world.* (Miller, 2007)

6. The culture and native environment Of the community will be honored and cherished. Nature-rich curriculum and project work will link learning standards to the real life experiences of children and families, their cultures, their oral and written traditions, stories and art, and their common experiences of growing up.

7. A common sense approach by adults will support children in the challenges of their out-of-doors learning. Children will be allowed both 'direction and freedom' to investigate and explore with reasonable safety considerations and toleration for messiness (Chawla, 1994).

8. Community and school leaders will consider the preservation of natural environments in their approach to land development and building design. Centers and schools will be beautiful, engaging, and amazing places.

9. Community and school leaders will build 'green schools' that are energy efficient, sustainable, and provide healthier learning environments for both children and those who work with children in those settings.

10. Adults will take care not to allow the lure of technology to override the allure of nature. The unprecedented opportunities technology offers to learn more about nature should be used to supplement real nature experiences.

'Natural' Benefits for Children, Adults, and their Communities

Where these principles guide planning and development and nature learning becomes a part of the child's life, there are many positive benefits.

- Children who have more positive and enriching experiences in the natural world are more likely to become better-informed adult consumers and savers who are environmentally alert to their own lifestyles and practices.

- "Children develop and cultivate an understanding of fellow creatures." (Louv, 2005)

- Spending time in nature aids in stress reduction and in the treatment of depression and ADHD. (Faber Taylor, *et al*, 2003; Louv, 2005; Wells, & Evans, 2003)

- Both boys and girls develop the courage to handle challenges, problems, investigations, and "just manageable" risk.

> *If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.* Rachel Carson in *The Sense of Wonder*.

- Children are encouraged to build a sense of caring about the earth and the need to act responsibly toward it. E.O. Wilson describes this innate need for connection as 'biophilia,' finding a place for yourself in the world (Wilson, 1984).

- Natural environments offer greater opportunities for unfettered physical movement, thus decreasing the likelihood of obesity (Moore, *et al*, 2003).

- Children who experience the natural world and have opportunities to play and learn within it are more likely to choose science or related fields as a career.

- Nature learning brings an expanded view of aesthetics. The fusion of the arts, music, history, and literature is also made possible when the nature and culture that surrounds children is documented and guided through their self expression (Edwards, Gandini, & Forman, 1998).

Building the Capacity to Change

Based upon literature in a variety of fields relating to children and nature, there are common threads that support this Call to Action. Building the capacity to make the necessary changes crosses multiple disciplines. There is not one path. We can build capacity for change by examining the way each of us responds in our own work and life—as parents, caregivers, educators, health professionals, community developers, or policy makers. We all make daily decisions that may influence how we and the community's children will or will not have the opportunity to interact with the natural world.

Those in the Field of Early Care and Education, can—

- Become better informed about nature learning and the benefits it offers to children.

- Strive to provide children with access to the out-of-doors for significant amounts of time every day for both intentional learning experiences and unstructured play.

- Enact policies (e.g., standards) that support a broad and nature-integrated curriculum that is multi-disciplinary, multi-sensory, and emergent.

- Plan specific activities related to learning about the natural world every day.

- Expose children to men and women who work in scientific or related fields (e.g., naturalists, geologists, biologists, nature writers).

- Plan nutrition education experiences that help children see the "roots to table" connections of the food they eat.

- Include families and elders to share their oral traditions, cultural histories, and experiences to offer children stronger links to the land and to their families.

- Collaborate with health professionals to promote greater understanding of the physical and mental health benefits of greater contact with the out-of-doors.

- Continually emphasize with teacher candidates, the importance of learning about the natural world and the role of nature learning experiences in their professional practice.

- Assure that teacher candidates complete course work that helps them understand how nature learning experiences can serve to unify many areas of the curriculum.

> *The most obvious thing schools can do in this regard is give children experiences with real things toward which symbols are only dim pointers. Unless emotionally connected to some direct experience with the world, symbols reach kids as merely arbitrary bits of data. A picture may be worth a thousand words, but to a second grader who has held a squiggly nightcrawler in her hand, even the printed symbol 'Worm' resonates with far deeper meaning than a thousand pictures or a dozen Discovery Channel videos* (Monke, 2007).

- Work to diminish stereotypes that discourage females from engaging in science learning by acknowledging and capitalizing on their natural curiosity and skill to investigate and explore.

In Our Family and Community Life, <u>we can</u>—

Years ago, I gave my grandson a stuffed toy bird, a replica of a Red Tailed Hawk. It made a strange approximation to the sound of a Hawk when you squeezed it. The Hawk became a part of puppet shows as a great sound effect; was used in chasing games and otherwise sat perched on the shelf.

Recently, I asked my grandson to come outside with me and help with the yard work. He started out the door with his newly acquired (inherited from older sister) IPod and earphones. I told him to leave it inside and after much debate, the sound machine and earphones remained on the table.

Outside as we went about our work, he suddenly yelled "STOP!" As I turned to look at him, he said, "Listen". And this time, we both heard the sound of the Hawk. The real sound of a Hawk. We both pointed to the sky and watched the Hawk overhead, screeching a greeting to the humans below. My grandson's eyes were big and smiling. "Cool – the Hawk. I recognized the sound." I knew he was impressed with the flying, swooping, screeching raptor. "Good ears!" I replied." It is beautiful."

And, I took a breath, thinking--What if I had let him keep on the earphones?
(As told by Susan Andersen, April, 2008)

- Strive to provide children with access to the out-of-doors in some way every day.
- In so far as possible, select child care and education settings that offer access to naturalistic outdoor environments that regularly provide children access to the outdoors and that allows them unstructured time to explore, imagine, be messy and play.
- Regularly organize family outings to local parks and other natural areas and plan vacations with opportunities to explore and play in the out-of-doors (instead of going to theme parks).
- Select books to read to children that show characters in natural settings and that help develop deeper understandings of the importance of the natural world. Include books by nature writers, explorers, and scientists whose real life experiences are interesting and meaningful.

Policy Leaders, Development and Design Professionals, and Business Partners, <u>can</u>—

- Expand outreach to colleagues to inform them of the groundbreaking work underway in many communities around the world that brings the joy and discovery of the natural world back as a priority.

- Form partnerships among stakeholders to develop and maintain nature learning settings and community projects (e.g., working together to transform an asphalt area into a natural space).

- Promote the development or retrofitting of "green" schools and other community buildings so that children and their teachers can learn in places that both protect the environment and provide opportunities to be engaged in natural learning environments.

> *If children do not dip their toes in the waters of unsupervised social activity, they likely will never be able to swim in the sea of civic responsibility. If they have no opportunities to dig in the soil, discover the spiders, bugs, birds, and plants that populate even the smallest unpaved playgrounds, they will be less likely to explore, appreciate, and protect nature as adults* (Monke, 2005).

- Require the provision of reasonable periods of outdoor time during each school day. This may include both time for recess and/or other unstructured active play, exploration, imaginative play or solitude, time to read, write, draw, and/or to carry out mathematic or scientific activities.

- Revise and simplify playground standards ensuring that standards related to hazards are supported with credible research and have not become unnecessarily restrictive (Frost, 2006).

- Collaborate with health professionals to promote outdoor play and the health benefits of greater contact with the outdoor environment.

Answering the Call to Action

What is the role of each of us in this re-connection—this call to action? What can we do differently? As an educator, a community leader, the parent of a toddler, a grandparent, a builder or designer, where can the skills and passions of each one of us intersect this goal? In communities worldwide, alert and caring adults are increasingly talking and planning together about building environments that foster an appreciation for and knowledge of nature. Where it has become disconnected from children's lives, they have seen the nature gap and are taking action.

The lists of recommended actions are seeds. They will only grow when individuals choose to get involved: plant and water the seeds, transplant them, and nurture them. Reconnecting children with the natural world is essential to their early learning and development. It combines the richness of the child's inquiry, the diversity of their own window on the world and their actual involvement with nature. Combined with the support of adults who choose to view both learning and the natural world as fragile and in need of greater care and attention, we can create opportunities that are rich and transforming. It is much like a kaleidoscope. Each piece can be beautiful alone; together they make an amazing sight.

We call upon families, educators and community leaders to become as children and rediscover the benefits of paying attention to nature—and noting the importance of this vanishing intersection in children's lives. Taking action on behalf of children's well-being will improve their future—and that of future generations. There is no time to waste.

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Resources for Action

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Selected Web Resources
(Web Sites of Additional Endorsers Will Be Added)

Dimensions Educational Research Foundation.
Source: http://dimensionsfoundation.org/.

Nature Action Collaborative for Children.
Source: http://www.worldforumfoundation.org/wf/nacc/index.php

National Arbor Day Foundation.
Source: http://www.arborday.org.

Nature Education for Young Children. Nebraska's Early Childhood Training Center. Source: http://ectc.nde.ne.gov/nature/nature.htm