Children of the Wired World
The Serious Threat to Human Contact with the Natural World that Comes in the Form of a Screen
by Michael J. Caduto

The sky watches us and listens to us. It talks to us, and it hopes we are ready to talk back…. Our God is the sky, and lives wherever the sky is. Our God is the sun and the moon, too; and our God is the people, if we remember to stay here. This is where we're supposed to be, and if we leave we lose God.

—10-year-old Hopi child, New Mexico

The World Health Organization defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." The word comes from the Old English *haelth*, being whole, well, or sound, and from the Old Norse *helge*, for holy or sacred. In practice, Western medicine has tended to view health as the science of preventing and curing disease. But a more holistic view, and one more in keeping with the origin of the word, is that health is a state of balance, an equilibrium that an individual has established with his or her social and physical environment.

In many indigenous cultures, the idea that health is rooted in a life lived in balance takes on an even deeper dimension: individual health is closely intertwined with family and community life, with cultural traditions, the natural world, and the spiritual realm. True health is inclusive of body, mind, and spirit.

When I was a child, my place of healing was a rocky outcrop called Billy Goat Bluff that overlooked the overgrown pasture of an old farm. There I sat for long stretches of time during periods of joy, stress, or pain, gathering myself in. Away from home or school, I had the world to myself—just the wind through the trees and the occasional bird flying by. No one could see me or touch me. I could sing at the top of my voice and no one heard. In later years, when I was in my teens, no matter how unpredictable and mercurial life seemed, Billy Goat Bluff remained a touchstone to my center of gravity. Nature became my best friend because she was

a constant green polestar—always there when I needed her.

We now understand more clearly and scientifically how nature benefits children physically, emotionally, and psychologically as well as intellectually and spiritually. From the need for children to understand where their food comes from to the profound impacts of climate change throughout the world, there is a clear relationship between the state of nature and its impact on youth. Research has consistently shown that playing in green areas promotes creativity and critical-thinking skills. Educational programs that engage children in extended outdoor learning experiences have been found to generate positive outgrowths such as a greater ability to pay attention and achieve in reading, math, and social studies. Exposure to green spaces reduces stress, improves discipline, and enhances the ability to relate well and get along with others. Outdoor experiences even benefit eyesight and reduce the likelihood that a child will develop myopia.

And if all of this weren't enough, children are also *happier* when they get to spend time outdoors. Their lives are enriched and curiosity is piqued by the infinite variety of things to see and do among the plants and animals; the rocks, water, and sky. Anyone who has watched a group of children run out of a schoolhouse door during recess and fly across the playground, squealing with delight, knows how nature and play and happiness are all intertwined.

There may be risks when playing in the outdoors, everything from cuts and scrapes to broken bones, but long-term health problems that arise from spending thousands of sedentary hours indoors seated in front of a computer screen or other electronic device are far worse—impaired brain development, obesity, and even cardiovascular disease.

In the 1960s, when my friends and I were growing up with much of our time spent outdoors, whenever we got a cut or scrape we wore it to school like a badge of honor, proving we had the moxie to get hurt and come back to play another day. Today, as in the past, traditional peoples who live close to nature benefit from the experience of contact with their environments. The ancient stewardship practices that have enabled indigenous peoples to live sustainably with their

world are woven into the fabric of their social, cultural, and spiritual lives; these traditions are also deeply rooted in practicality. Take care of your environment and people survive and live well; destroy your environment and everyone suffers. As American ecologist Aldo Leopold stated: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends to do otherwise."

Developing a relationship with the natural world lays the foundation for raising children who will value and protect the health and well-being of the environment. Simply exposing children to nature for an extended period of time is an essential part of forming that bond. "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," wrote biologist Rachel Carson in her book *The Sense of Wonder*. We are all children of nature. Our sense of place is founded on many aspects of how we relate to the world around us.

Befriending the environment during the formative years, and experiencing the innate sense of communion between self and the natural world, have often become the inspiration and impetus for preserving the local landscape. Spurred on by a youthful passion and deep caring for nature, many environmental activists, educators, and authors were compelled to fight for their local environment at an early age when an outside agent of change, such as pollution or development, posed an immediate threat.

In our time, however, these former associations with nature are seriously threatened. Just a generation ago, no one could foresee a time when such a crisis would come. Children who had access to the outdoors spent most of their time swimming in ponds, catching turtles, and inventing imaginary worlds where trolls and fairies cavorted among frogs and dragonflies. In his book *Last Child in the Woods*, Richard Louv notes a University of Maryland study with findings that in 2013 half as many children in the United States ages 9 to 12 were spending time engaged in outdoor activities (fishing, hiking, gardening, going to the beach) than

just six years earlier. This is the trend all around the world, in both urban and rural settings, and it's become endemic to children's experiences in modern society.

Nowadays, due to concerns over safety, highly structured schedules, and extreme focus on academic achievement from a very early age, reaching even into the pre-K years, children have very little open, unstructured, outdoor time to themselves, and far less control over their own free time. Furthermore, even as toddlers they turn to spending time on computers, cell phones, iPods, tablets, and myriad other electronic devices.

From Europe to the Middle East, from North America to Asia, research has proven that children are more connected to the content of their apps than they are to their surroundings. Whereas parents of earlier generations were eager to send their children outdoors—they were glad to have us out of their hair in fact and perfectly happy to leave us to our own wanderings—we now have a generation of parents who worry about the amount of time children spend with their electronic devices, and the accompanying health ramifications.

Not only do electronic devices separate children from nature, but their overuse has serious negative health impacts that are widespread and dangerous. According to a variety of recent studies, children using cell phones are less aware of their surroundings and are three times as likely to be killed or seriously injured in a traffic accident while walking to school. Overexposure to devices during a child's first two years, when the brain triples in size, can lead to impaired learning and delayed cognitive development. Youngsters who frequently look at screens can become impulsive, less disciplined, and prone to tantrums. Children who are allowed to have an electronic device in their bedroom run a 30 percent greater risk of being overweight. They also may experience sleeplessness and poor academic performance. Excessive screen time can increase the risk of depression, anxiety, and other forms of psychological malaise. Not to mention that the Internet can be addictive.

A study by the group Common Sense Media found that 17 percent of

children who are 8 and younger use mobile devices every day; this number has more than doubled since 2011.

Research conducted by the American Academy of Pediatrics (AAP) found that children today use some form of electronic entertainment seven hours each day on average. That amounts to 2,500 hours per year, equivalent to nearly three and a half months of 24-hour days each year.

In January 2015, Taiwan passed a law banning the use of electronic devices (iPads, TVs, and smartphones) by children under 2 years old. Parents who violate this law can be fined up to $1,500. The AAP and the Environmental Health Trust have issued recommendations for limitations on the use of devices by children, which include texting, watching TV, and using social media and the Internet. They recommend that families prohibit children under 2 years of age from TV and the Internet, and allowing no more than two hours of screen time per day for children over 2. They also suggest eliminating the use of electronic devices after bedtime and during mealtimes and keeping TVs and devices with Internet access out of children's rooms.

In order to live a healthy life, children need to find their center—that inner place where body, mind, and spirit are one—a core identity that is uniquely theirs and makes them who they are. How does a child accomplish this when he/she is bombarded by messages delivered through electronic media for seven hours each day—messages that are designed to manipulate that child to do or buy something, or to be persuaded toward a particular way of thinking or acting? Research shows that children gradually develop their second-order reasoning, or Theory of Mind— the ability to think for oneself and distinguish between one's own state of mind (knowledge, beliefs, desires, and intentions) and those of others.

Because it takes time for each child to develop a "mind of one's own," it clearly is not in the interest of fostering a child's mental, physical, and emotional health to expose that child to endless hours of propaganda. This is especially true for children under the age of 10. Even when children have developed their abilities for higher level, second-order reasoning, they need to be taught the

skills necessary for examining what is behind the messages they are constantly experiencing.

In this way, they will be able to distinguish between what is healthy and what is not, and make their own critical decisions about what they want to accept or reject. With this awareness and these skills, youth can learn how to interact online in a way that is healthy and proactive rather than submissive and reactive.

With so many children displaced from the natural world because they spend much of their time immersed in the virtual world, some critical questions arise: How can we encourage children to engage with their real surroundings and develop a relationship with nature? How can we help their experience of nature to become the basis for a healthy life? Does the use of devices have any legitimate role in environmental education?

Some educators argue that electronic devices should play no role in environmental education because overexposure to the virtual world causes a serious disconnect between children and the real world they live in, including their social interactions and relationship to nature. By contrast, some suggest that electronic devices can be used to reach children in the virtual world through specially designed apps and online programs that teach about nature and encourage youth to go outside and experience the natural world for themselves. This is a subject of ongoing debate.

While the prevalence of devices presents daunting challenges, even children who were raised in an era when they spent much of their time playing outdoors, and had a healthier childhood, did not automatically grow up to become environmental stewards, nor did they necessarily understand the connection between a healthy environment and human health.

Most environmental education programs focus on increasing children's experiences, knowledge, and skills. Yet these critical building blocks of an environmental consciousness need to be laid upon a foundation of wisdom—the beliefs, values, and attitudes that can lead to a lifetime of environmental stewardship.

How do we bring stewardship down to earth for children? How can we weave care for earth into the warp and weft of a child's inner life? Every child lives a unique story that unfolds within the context of family and the greater narratives of culture. Help a child to actively create the story of a life well lived and you literally offer that child the gift of a lifetime and help each child to see how the story of his/her own life relates in a healthy way with the natural world.

During three decades of collecting stories of indigenous peoples, I have become acquainted with recurring themes that were essential lessons for living in balance. While the natural and cultural references have varied, the message is universal: health and healthy relationships are equated with reciprocity and generosity of spirit. Common truths appear over and over again in oral traditions. In recent years, as codirector of the Stories for Environmental Stewardship Program for the Quebec-Labrador Foundation, I coordinated a network of professionals in environmental education and conservation from Egypt, Israel, Jordan, Lebanon, and Palestine while they gathered narratives from their diverse traditions. Even in a conflict-plagued region such as the Middle East, where countries struggle to find common ground, similar folkloric patterns revealed that there are many shared values relating to family, culture, and environment.

Children possess an inherent belief in the spiritual aspects and connections found among the living and nonliving parts of the earth. Any holistic approach to children, health, and the environment should consider the human spirit as well as the physical. Individuals from a particular culture tend to learn in a distinct way, using the various kinds of human intelligence in unique patterns and combinations. For example, among Native North Americans, and among many other indigenous cultures around the world, traditional education takes the form of initiation rites and direct observation of elders, who hold and pass on important knowledge. Indigenous learning emphasizes certain forms of intelligence, such as spatial, interpersonal, linguistic, and musical.

For example, a common belief among Native North Americans is that

human beings are identified with a particular place that defines us, provides for us, and is an inseparable part of who we are. Among the Abenaki of northern New England, the life force embodies emotion, energy, and health. The wellness of a person's spirit depends on the state of his or her mind and the strength of relationships with earth and sky. All life is connected by the healing water, *nebi*, that flows through our veins, replenished and renewed by the land.

In the traditional life of the Abenacki, children would undergo a rite of passage at around age 13. Through fasting and vision seeking, and with the help of an elder guide, young people would look for an ally or helper, a guardian spirit to increase their sense of personal power.

The rituals for boys included a trek to a remote location in the wilds, where they would light a fire and fast. During this time, the youth sang, played songs on his flute, and offered prayers while discovering his true life and the power to move along that journey. The ritual for girls was a time of transition, moving from childhood to becoming a young woman. Her mother, grandmothers, and aunts would build a small moon lodge set apart from the village where the girl, in her visions, sought a guardian spirit of her own to teach and help her through the coming years.

While it is unrealistic to consider creating a modern-day version of the vision quest as a bonding with the natural world—as a transition into adulthood and the onset of a life lived in balance—it is essential that we find a way to help young hearts and minds experience a similar stage of growth and transformation within the context of contemporary life. How do we, in these times, create a social, cultural, educational, and technological context that helps children to live in balance with the natural world? How do we help youth to understand how their own health is interwoven with nature, and to develop a nurturing relationship with plants and animals, soil, water, and sky?

Today a movement known as place-based education uses traditional approaches to teach children about local landscapes, cultures, and social groups. Placed-based education strives to connect youth to local environments and traditions through

direct, hands-on community experiences that dovetail with learning through conventional subjects such as science, math, social studies, language, and the arts.

Traveling this road is going to entail a tremendous amount of work because in diverse societies there is no one-size-fits-all approach. But it can be done. We can help children to see their own lives as stories that are unfolding each day, and to realize that they are actively forming the directions of their lives by the kinds of choices they make and actions they decide to take. We can actively encourage an environmental ethic in children by exposing them to the inspiring life stories of such real role models as Rachel Carson, Aldo Leopold, Jane Goodall, John Muir, and the many eco-heroes who are recognized for their great deeds on behalf of the earth.

We can instill in youth the self-confidence to act and believe in the possibility of changing the world for the better. But, finally, we have to continue to work to get children off of their electronic devices and out into the natural world. ❧