STATE OF THE WORLD

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Rethinking Education on a Changing Planet

THE WORLDWATCH INSTITUTE

CHAPTER 2

Outdoor School for All: Reconnecting Children to Nature

David Sobel

One of the salient problems facing us today is children's alienation from the natural world. They are too creeped out to touch earthworms, they don't know where their food comes from, and they are afraid to walk in the forest alone. Or, if they are walking in the forest, they can't see the forest for their iPhones. We, and our children, are easily seduced by the panoply of digital treats. It is so much easier to be a couch potato than to plant potatoes. The result is that twenty-first-century children spend eight hours a day interacting with digital media, and only thirty minutes a day outside.[1]

When interviewed about their computer use about fifteen years ago, children in Putney, Vermont, described how this happened. One girl sheepishly admitted: "Before we had a computer, I used to read a lot and go outside more to be in the neighborhood. Now, it's so easy to go exploring on the computer, it's like it's too much work to go outside." Another boy agreed: "I'll be playing a really cool computer game, and I'll think, 'Wow, it's beautiful outside, I should really go outside.' But I can't stop myself from playing—it's kind of like I'm addicted." A third student summarized: "For me, I learned to love nature before I did computers, and so it doesn't really affect me. But if I started to use computers when I was really young, it might have kept me from getting into nature." Today, the computerization of childhood is so complete that not even this level of awareness exists for most children.[2]

What's to be done? Numerous overlapping educational initiatives hold promise for reconnecting children and nature. At one extreme, a U.S. public television program on "The Future of Education in the 21st Century" was

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giddily enthusiastic about students in a constant relationship with computers and other screens—using them in classrooms, for homework, and in their leisure time. At the other extreme, the kindergarten-through-seventh grade Environmental School in Maple Ridge, British Columbia, has no formal school building. Although they use some indoor facilities around the community, they are outdoors, through cold, wet, and snowy Canadian winters, most of the time. There is a right balance between these two approaches.

Essential for a liveable future is education for sustainability. It is a paradigm shift that aspires to educate students to make decisions that balance the preservation of healthy ecosystems, vibrant economies, and equitable social systems in this generation and in all generations to come. Around the world, numerous overlapping movements have this goal in mind: "green schools," education for sustainable development, environmental education, community-based education, nature and place-based education, the farm-to-school movement, and more.

Unfortunately, some of these approaches tend to get too heady too fast. Before you know it, we are trying to get children to save the rainforest, understand energy flow in ecosystems, reduce the carbon footprint of their schools, and address problems of income inequity in their communities. Too quickly they leave behind the primacy of children caring for animals, digging to China, or playing capture-the-flag at dusk. In other words, the cognitive, problem-solving, technology-based aspirations to save the world have to be balanced with the physical, socioemotional, immersive values of making mud pies. In fact, one may lead to the other, if we implement education practices that honor the insights of developmental and conservation psychology.

In a landmark 2012 chapter on the development of conservation behaviors, environmental psychologists Louise Chawla and Victoria Derr synthesize the research on the relationship between childhood experience and adult environmental behavior. They conclude that, "if societies seek to achieve a sustainable world where people will not only act to protect the biosphere today, but future generations will also value this goal and work for its achievement, then children need to be provided with regular access to nature." They add, "Research has linked a background of childhood play in nature with every form of care for the environment: informed citizen action, volunteerism, public support for pro-environmental policies, environmental career choices, and private-sphere behaviors like buying green products, conserving energy, and recycling."[3]

In other words, opportunities for nature play and learning need to be an integral part of cultivating adult environmental behavior. Children cannot

just learn about the environment through virtual simulations; they need to get wet and dirty in order to fall in love with the Earth. Other factors become important later in the developmental trajectory. As Chawla and Derr explain, "In middle childhood and adolescence, young people need opportunities to extend their environmental knowledge and skills in more formal ways. In addition to a tapestry of nature in different spaces of their lives, children need people who can help them appreciate and understand what they find there."[4]

With these indications in mind, one can consider a developmental continuum of promising practices to connect children to nature in the twenty-first century: from early childhood, to elementary school, to middle and high school. If these practices are nurtured, they could shape a generation of young adults that are grounded in nature, selectively mature in their use of technology, and committed to environmental preservation.

Early Childhood: Immersion in Nature

As public schools in the United States and elsewhere have put greater emphasis on standardized testing, a counterpoint grassroots movement has arisen to "naturalize" early childhood programs. Since the original Earth Day in 1970, nature preschools have been growing steadily in the United States, and forest kindergartens have spread rapidly across Europe from their origins in Scandinavia. Although Denmark has conventional indoor early childhood programs, about 10 percent of the country's children participate in outdoor schools, and the older participants attend five days a week from 8:30 a.m. to 4:00 p.m. Germany has about one thousand forest kindergartens, and the schools also are popular in Australia, Japan, New Zealand, and Taiwan.

Parents of forest kindergartners appreciate this opportunity for immersion in the natural world. It is the antidote to the urbanization and antiseptic lives of many post-modern children. Early childhood programs offer an at-oneness with nature that constitutes the roots of empathy for ferns, hedgehogs, and wild places. Paul Doolan, a father who sent his daughter to a Swiss forest kindergarten (wonderfully documented in the film *School's Out: Lessons from a Forest Kindergarten*), articulates the unique quality of the experience:

> For two years, my little girl went to kindergarten in the forest. Not a school in the forest, just the forest. No walls, no roof, no heating—only the forest, a few tools, and incredibly dedicated teachers. One day, she came home from a day of particularly vicious downpours, her feet inevitably

> soaked, her eyelashes caked in mud, her cheeks ruddy with the cold, and her eyes sparkling with fire, and I said to her it must have been tough being outside all morning in such weather. She looked at me in genuine incomprehension, looked out the window: "What weather?" she asked.[5]

Nature-based early childhood programs aspire to that old progressive education chestnut of balancing head, heart, and hands. Although most nature-based programs share common aims—they honor the primacy of children immersed in nature, and they support self-directed play—their different styles reflect the poles of teaching practices that we need to balance. Nature preschools, for example, work from a cognitive readiness mindset, which is reflected in the beautiful facilities, desks, and somewhat greater emphasis on formal literacy and numeracy, while getting kids outside for one-third to one-half of the day. Forest kindergartens, meanwhile, embrace an initiative/resiliency mindset, with an emphasis on minimizing indoor facilities, being out in all weather, and giving children opportunities to solve problems on their own.

Betsy Beneke/USFWS

A preschool class snowshoes in below-freezing temperatures at Sherburne National Wildlife Refuge, Minnesota.

Advocates of nature-based early childhood are convinced that their approach provides a win-win solution. They contend that their children are cognitively well-prepared for formal schooling and are also healthier and bonded with nature in a way that will incline them toward conservation values and behaviors. They accomplish the same goals as conventional indoor programs, and more. A recent case study documents how the Chippewa Nature Preschool in Midland, Michigan, led parents to advocate for nature kindergarten in the local Bullock Creek public schools. The success of the nature kindergartens has led to the creation of nature first grades. Parents and administrators realize that children are happier, more engaged in school, and have increased vocabularies and science knowledge as a result of this change in teaching practice.[6]

A similar grassroots movement has emerged in the state of Vermont. After watching the *School's Out* video in 2012, two innovative teachers in the town of Quechee decided to do a Forest Day, one full day a week in the woods where students solve outdoors math problems, climb ledges and trees, and learn to identify local plants and animals. Today, dozens of Vermont schools have Forest Days programs. The North Branch Nature Center in the capital, Montpelier, supports these efforts and is in the process of providing year-round curriculum materials for similarly inclined teachers. All of this has happened under the radar, without state mandates or targeted funding. It is a backlash to the academification, digitalization, and indoorification of young children's lives.

Elementary Education: Exploration and Connection to Place

Whereas early childhood programs are about immersion in nature, elementary programs focus more on exploring the physical world, becoming adept in it, and connecting to the nearby natural and cultural worlds. The desire to venture beyond the bounds of one's yard and neighborhood has always been an inherent part of childhood and is well represented in children's literature. Christopher Robin explores the Hundred Acre Wood with Winnie the Pooh. Caddie Woodlawn runs wild with her brothers exploring the Wisconsin woods and rivers surrounding their farm. On all continents—from Sioux children in North America to iKung children in Africa—children historically have had freedom to roam. But this freedom has been curtailed as a result of urbanization, parental anxieties, and digitalization: it is now a rarity to hear a mother encouraging her children to explore outside all day and "be home by when the streetlights come on."

Insightful schools understand the physical and cognitive benefits of these natural childhood instincts and try to recreate these opportunities across the elementary grades. The Adventure Education curriculum at The College School of Webster Groves, near St. Louis, Missouri, is a perfect example of a sound developmental approach. Outdoor adventures begin in kindergarten with the annual Day in the Woods, when the children study pond water, climb hills, and complete a half-mile hike. The first graders' one-night camping trip in a county park includes a ten-foot rock climb, a creek exploration, and fossil hunting. The second graders begin cave explorations, and third graders embark on a three-day wilderness camping experience. In fourth and fifth grade, the students move back in time as well, participating in a historical reenactment of a pioneers camp at an old prairie homestead.[7]

An integral aspect of this "expanding horizons" approach is the development of traditional wilderness living skills. The camping movement in the United States at the beginning of the twentieth century exhorted boys and girls to get out into the open and heed nature's everlasting voice. Back then, the call to nature was a response to the rapid industrialization and deforestation in the later part of the nineteenth century. The creation of U.S. national parks and national forests marked the beginning of the conservation movement. Today, in the early twenty-first century, we are heeding the same call, yet we are now impelled to conserve not just nature, but also the connectedness between children and nature.

One promising sign is the quiet growth of nature mentoring programs. Whereas environmental education programs have a curricular and cognitive orientation toward teaching about food webs, nutrient recycling, and environmental problems, nature mentoring programs teach shelter construction, wild edibles, bow and arrow fabrication, and even basketweaving. After a Wilderness Youth Project program in Santa Barbara, California, one child enthused, "Three hours isn't enough for these trips. We should do five hours, we should do all day, we should do twenty-four hours. We should build forts and live out here." A certain gusto is developed in nature mentoring programs that can carry over into the classroom, reflecting a synthesis of both cognitive goals and the socioemotional/resilience goals of forest kindergartens.

In the United Kingdom, the forest kindergarten movement has morphed into the forest schools movement, extending to the elementary grades. Forest Schools Canada, with the same orientation, was founded in 2013, and interest in place-based education and forest schools is particularly strong in the province of British Columbia. The Davis Bay Elementary School north of Vancouver (motto: "Where the outdoors is in!") reflects a schoolwide commitment to a nature- and place-based curriculum. Students in the three multi-age classrooms—Hive K/1, Cocoon 1/2/3, and Rookery 3/4/5—spend as much as half of each day outside, engaged in activities such as writing poetry in the forest, doing beach cleanups, and digging clams.

Strawberry Vale Elementary in Victoria, British Columbia, is a good example of a school that has transformed its monoculture schoolyard over the past fifteen years with gardens, natural play structures, a pond, fruit trees and berry bushes, a shrub labyrinth, climbable ledges, rain gardens, and more. This emphasis on naturalized schoolyards, signified more broadly by the creation of the International School Grounds Alliance in 2011, suggests that schools are

opening their doors in recognition that the outdoors constitutes a significant component of the learning environment.

In Australia, bush schools are cropping up from coast to coast. A distinctive component of this approach is the acknowledgement of Indigenous ways of knowing and being in the landscape, based on a recognition that this was, first and foremost, Aboriginal land, and that students can learn from these First Peoples. Aboriginal elders are sought out to serve as mentors, and sites of spiritual significance are honored. As in forest schools at the elementary level, the emphasis moves from play to skills development and then to the development of literacy, numeracy, and other core curriculum content. At one bush school, after a shelter-building experience, students engaged in a complex mathematical problem-solving discussion about ratios, percentages, and surface area as they discussed building a larger shelter that they could use in the future.[8]

This same honoring of First Peoples is manifest at many Australian and Canadian professional development events for educators. Each event begins with the lead speaker stating, "I wish to acknowledge the ancestral, traditional, and unceded Aboriginal territories of the Coast Salish Peoples, and in particular, the Squamish, Musqueam, and Tsleil-Waututh First Nations in Metro Vancouver on whose territory we stand." This commitment to place is a core curricular principle at The STAR (Service To All Relations) School north of Flagstaff, Arizona, on the edge of the Navajo Reservation. This first completely off-the-grid, solar-powered school serves a population of Navajo and Hopi children and integrates a place-based curriculum with immersion in the cultural traditions of Native peoples.[9]

The Green School in Bali, Indonesia, synthesizes many of the same elements. Each class has vegetable and flower gardens, and the experiential learning process includes composting, worm farms, water conservation, lifecycles, and permaculture. The school embraces cultural traditions such as rice harvest festivals and Nyepi (Balinese New Year), and the teachers create projects in affiliation with community organizations such as Yayasan Senyum (Smile Shop) and the Bali Animal Welfare Association.[10]

This devolution away from a mandated, homogenized curriculum toward one that focuses on distinctive local places and cultures is a promising international phenomenon. Preservation of the firsthand experience of nature in childhood parallels the commitment to preserving fading languages in Ireland and the Amazon basin. Preserving the opportunities for firsthand experience in childhood creates the commitment and resilience to deal with challenging issues in later life.

Middle School and High School: Rites of Passage and Social Action

Connectedness with the natural world changes when children pass through puberty and enter adolescence. The free play of early childhood and the exploration of middle childhood need to be deepened with rite-of-passage experiences and then transformed into productive social action and the development of leadership skills in environmental activism. Adolescent nature experience is enhanced in affinity groups of peers with adult mentors who exemplify values of environmental behavior and nature preservation (think Scouts, 4-H Clubs, church youth groups, school green teams, and Outward Bound wilderness expeditions).

In the adventure curriculum at The College School near St. Louis, Missouri, sixth graders embark on a five-day wilderness trip in a national forest, complete with an overnight solo—a true rite of passage for many young adolescents. Seventh graders take part in an urban exploration where they use local transportation, sleep in churches, do community service, and delve into ethnic neighborhoods. By eighth grade, students travel to Okefenokee Swamp and the southern mountains for bicycling, canoeing, and orienteering.[11]

This movement from close and familiar in the early grades to distant and strange in later years accurately mirrors the developmental transitions unfolding in a child's psyche. The solo wilderness or urban experience for children around the age of puberty mirrors the timing of the rite of passage in many land-based traditional cultures. Adolescence is a time to forge oneself through physical challenges and to apply oneself in solving knotty social and environmental problems. Appalachian Mountain Club's Youth Opportunities Program does the same thing for inner-city youth of color. They provide training in backpacking, campfire cooking, rock climbing, and group safety, then take the youth on wilderness outings throughout northern New England. Rites of passage in the wilderness are an environmental justice issue: everyone should have access.[12]

Kroka, a wilderness education program in the state of New Hampshire, conducts a semester program that manifests many of these components. It is like a semester abroad for high school students, but it is in their wild backyards. One version of the trip begins in January at a base camp where the students make their own backpacks and sleeping bags, dry their own food, and learn cross-country skiing. They then ski the length of the Catamount Trail, with a solo winter camping experience toward the end. The students hunker

down in northern Vermont to craft their own paddles and pack baskets. As the spring snowmelt comes, they paddle south and arrive back where they started in May. Along the way, they participate in service projects in towns along the Connecticut River.[13]

In Canada, the Rediscovery program for First Nations youth in British Columbia is founded on the idea of reviving fading Indigenous cultural traditions. Challenged by substance abuse, juvenile delinquency, and other forms of family disruption, the local Native and non-Native communities set up a dynamic youth project in 1978 on the remote shores of the Queen Charlotte Islands (Haida Gwaii). Rediscovery staff, working with Haida Elders, open adolescents' eyes to a renewed contact with the land and heritage around them. As Canadian environmentalist David Suzuki comments: "Clearly, we need a renewed sense of Earth as home; belonging to the land, connected to all other living things. Youngsters today have few, if any, opportunities to experience the enormity and beauty of the wilderness—Rediscovery offers them that." Similar programs have multiplied throughout Canada and have even been adapted by Indigenous peoples in Thailand.[14]

Kroka Expeditions

Tenth-graders paddle a student-built canoe seventy kilometers on New England's Lake Champlain as part of an eight-day Kroka Odyssey Expedition during which they also study Homer.

Ming Wei Koh, senior specialist for ecoliteracy at Pacific Resources for Education and Learning (PREL), brings this argument full-circle. At PREL, Koh develops climate change education projects, place-based teacher trainings, and curricula to build community resilience in island nations across the Pacific basin. Many of these islands are being inundated with rising seas, and their cultures are disappearing with their coastlines. As Koh explains, she is creating "place-based education that utilizes Indigenous and Western knowledges and pedagogical practices to improve ecoliteracy. Improving ecoliteracy . . . will lead to a personal relationship with nature and thus, care and nurturing of the land/ocean continuum."[15]

Koh's work illustrates the synthesis that exemplary educational initiatives should be striving for: integrating developmentally appropriate natural world

challenges for adolescents with the honing of the concepts and skills that will help them solve current ecological problems. Some of the communities that she works with are living and reviving the art of traditional navigation, with apprentices watching and studying master navigators to learn more about the movements of the waves, birds, and stars. As Koh explains: "Transmission of knowledge in this way has been going on for generations. But recently, communities like Waan Aelõñ in Majel (Marshall Islands) and the Polynesian Voyaging Society (Hawai'i) are using traditional navigation and canoe building to address contemporary community needs: providing life skills for youth, perpetuating cultural practices, and bringing attention to our global need for sustainability."[16]

The crux of the rite-of-passage experience has always been to take the individual into the wilderness to both craft personal identity and transform the child into the socially responsible adult. In the Nootka tradition in British Columbia, initiates were dropped off in the ocean at night as girls to take a long swim back to shore. When they arrived after this ordeal, they emerged on the beach as women. This is what we should be striving for in adolescence: natural world encounters that develop the grit and resilience to be adult problem solvers in an uncertain world.

Outdoor School

In November 2016, Oregon voters approved a ballot initiative, known as Initiative 67 ("Outdoor School for All"), that would enable every fifth or sixth grader in the state to attend a weeklong, overnight outdoor school. Outdoor school is a decades-old tradition in Oregon, and more than 1 million schoolchildren have attended since 1957. Cost prevents some schools from participating, however, and the ballot initiative would make the program accessible to all. Program directors emphasize the value of scientific investigation in the curriculum, but they note that the more important component may be the social learning aspect—learning acceptance for those who are different, or bravery in the face of a first night away from family.[17]

The program appears to have long-lasting effects. According to one analysis, "[c]hildren who attend outdoor school in Multnomah County—especially boys, Asian students, and students whose first language is Spanish—are more likely to show up in school afterward." High school students who get to be outdoor counselors "report being more confident at public speaking, more interested in other volunteer opportunities, and even more likely to use conflict

mediation skills with their peers." One current middle school teacher who was a student and later a counselor at an outdoor school commented that during solo time, sitting and reflecting, he realized, "he wanted to stop acting out in class, stop picking fights with other kids, and choose a direction for his life." He was the first person in his family to go to college and is now a big advocate for Outdoors School for All. "It's not just a week outside," he says, "It's the chance of a lifetime."[18]

The Children & Nature Network, founded in the United States but now with membership on six continents, is a leading organization advocating for naturalizing children's lives. The network's Natural Families program supports the creation of Family Nature Clubs where parents and children get together regularly to visit local parks. And the new Cities Connecting to Nature initiative helps cities devise strategic plans for getting children outside. In Grand Rapids, Michigan, one of seven target cities, the Parks and Recreation Department, the Grand Rapids Public Schools, local nonprofit organizations, and the mayor are invigorating parks and playgrounds and creating outdoor learning labs.[19]

At the national level, the North American Association for Environmental Education and other advocacy groups have been successful in making environmental education and environmental literacy programs eligible for U.S. federal funds in the new Every Student Succeeds Act. This act provides funding for environmental education, professional development, and field-based service learning. The newly formed International Association of Nature Pedagogy aspires to the same kind of professional development and advocacy in Europe and Asia. The association's Erasmus project is examining nature education practices in Australia, the Czech Republic, England, and Scotland to articulate the different cultural heritages that shape practice in these diverse settings. The goal is to create video evidence and documentation of the benefits of learning in and with nature.[20]

What about going further and extending the one week that the Outdoor School for All initiative aspires to, and making it multiple weeks? Or having your child spend most of the day outside in a forest kindergarten? Maybe we can aspire to having elementary-age children spend one or even two days a week in an outdoor school, and then build in expeditions and rites of passage three times a year during middle school. What about regular opportunities to participate in ecological restoration, watershed monitoring, woodlot management, and daily farm chores during high school? Let's aspire to a world of twenty-first-century students that are both sophisticated in technology and rooted in the Earth.

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STATE OF THE WORLD

EarthEd

Rethinking Education on a Changing Planet

THE WORLDWATCH INSTITUTE, in its flagship publication, analyzes how we can equip students with the skills to navigate the turbulent century ahead. With global environmental changes locked into our future, what we teach must evolve. All education will need to be environmental education, teaching students to be ecoliterate, deep-thinking, and deeply moral leaders, ready to face unprecedented challenges. *EarthEd* explores traditional areas of environmental education such as nature-based learning and systems thinking, as well as new essential topics including social-emotional learning and the importance of play. This latest edition of *State of the World* examines how, by rethinking education, people worldwide can better adapt to a rapidly changing planet.

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"The authors in this volume are among the leaders at the forefront of environmental education. The stories, research, and insight that follow will inspire by the examples, models, and sheer dedication and perseverance."

—**DAVID W. ORR**, Paul Sears Distinguished Professor Emeritus and Counselor to the President, Oberlin College

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