Grounds for play or “playgrounds” are not merely the commercial venues created by adults, but have always been wherever the special places in the woods of the countryside and the vacant spaces of villages and cities can take children on magical flights of fantasy. “Cyber playgrounds” for playing indoors with video games, elaborate “water playscapes” at theme parks, and even places where adults go for entertainment may be called “playgrounds.” Now, with the exploding interest and action on getting children back to nature, labels such as “naturescapes” and “playscapes” are becoming more common. We cannot bring back to urban bound children the expansive “wildscapes” for play enjoyed by most children for centuries but we can bring back little pieces of nature to complement their contemporary playthings and enrich their lives. We can bring back spontaneous play—the delicate dance of childhood that strengthens the mind and body and nourishes the soul.

Memories of my wilderness and barnyard play and daily recesses at school in the Ouachita Mountains of Arkansas during the Great Depression and World War II remain strong and clear—mostly joyful times of building dams in the creek behind the school; choosing sides, building forts, and playing war in the forest beyond the creek; playing shinney and baseball in the clearing; caring for the farm animals that served as pets, work stock, and some for food; tending gardens and eating raw vegetables directly from the plants; swimming and fishing in the clear, fast flowing river and creeks; playing rodeo with real animals in the barnyard; working in the fields with the “grown men” during the day and chasing “coon dogs” through the woods at night. Children's play throughout history was much like this—relatively free, intertwined with work, spontaneous, and set in the playgrounds of the wilderness, fields, streams, and barnyards. Children in cities enjoyed similar forms of play, but their playgrounds were the vacant lands, parks, and surrounding countryside or seashore. Following World War II, the technology revolution ushered in television, cyber toys, new forms of transportation, and parents intent on giving their children advantages they themselves had missed. Over time, the working, free-roaming child of previous eras would be replaced with a pampered child, created and sustained by hovering parents increasingly fearful for their children's safety and anxious about their achievements in school and vocation. Both parents went to work, leaving children to their cyber playgrounds and government-imposed, increasingly rigid and illogical standards for schools. The X and Y generations gave way to the XXL generation, as outdoor play and play environments were abandoned, junk food became a major source of nutrition and sustenance, fitness levels declined, waist lines began to soar, and rare childhood diseases emerged and multiplied. Throughout this rapid transition, ages-old traditions of play were short-circuited and the consequences for children's health and development were rapid and extensive. Except under insufferable conditions of poverty, abuse and disaster, active, outdoor play prevailed throughout history and children played outdoors and bonded with nature—until now.
THE DISAPPEARANCE OF OUTDOOR PLAY

Now, during the short span of three or four decades, centuries-old freedom to play has evolved into a play and play environments crisis that threatens the health, fitness and welfare of children. As the Greatest Generation gave way to the technology revolution and excesses of growing affluence, children’s play and play environments changed in remarkable ways. School systems across America joined the rush to over-parenting and over-management and reduced or deleted recess, restricted physical education, drilled children incessantly on standardized tests, and further interfered with their health and development with cafeteria diets of junk food and sugar drinks. Growing numbers of schools prohibit rough and tumble, chase, dodge ball, and other games allowing physical contact, and some prohibit running on the playground. Excessive safety standards and threat of lawsuits replace adult oversight and many children grow progressively weak and fail to develop the physical and cognitive skills to protect themselves against injury. All this may prove to be only the tip of the iceberg, as neuroscientists and other scholars continue to uncover the deleterious effects of free, outdoor play deprivation on children's learning, and on their cognitive, social and emotional development.
THE CONSEQUENCES OF DISCONNECT FROM OUTDOOR PLAY AND NATURE

The consequences of not playing outdoors, the diminution of recess, and the abandonment of outdoor play in schools, neighborhoods and natural areas are fundamental issues in a growing crisis resulting in serious health effects and potentially diminishing life spans of the present generation. The “canaries in the coal mine,” signaling this crisis, were the increases in childhood obesity even before the turn of the present century, characterized by early signals of physiological and psychological disorders. Before the end of the first decade of the 21st century, rapid onset of obesity, childhood diabetes, circulatory diseases, rickets, fatty liver disease, and childhood depression had entered the scene, giving the health crisis growing characteristics of a pandemic. Parents and teachers were faced with the dilemma of children developing cancer from too much sunlight and rickets from too little. The children of entire industrialized nations, especially in the United States, are losing their natural outdoor grounds for play and forgetting how to engage in free, spontaneous outdoor play and culture-enhancing traditional games.

The consequences of outdoor play and nature deprivation are staggering in their scope and intensity and confounded by “balanced diets” of a sugar drink in one hand and cookies in the other. Scientists who study both animal and human play and outdoor playscapes no longer view them as non-essential but important for survival, adaptation, and well-being. Play and learning are mutually supportive and necessary for a healthy childhood and a competent adulthood. Outdoor play deprivation can be associated with physical and emotional illnesses, depression, violence, diminished impulse control, addictive predilections, reduced school achievement, and social abnormalities. The work of neuroscientists shows that play builds brains and play deprivation can change those brains in remarkably damaging ways.

The benefits of outdoor environments and nature experiences are remarkable and extensive. These include: inner peace, stress reduction, fitness, healing, mental health, and creativity; physical, emotional and intellectual development; bonding with nature, appreciation for nature, and heightened sense of beauty. Unstructured experiences in nature are more beneficial than structured experiences and the benefits are universal across cultural and geographic areas. Research conclusions from studies of the benefits of play and experiences in nature and the consequences of their loss are similar in many respects, raising issues about the relative contributions of the activity and the context or environments that are yet to be extensively explored. Voluminous evidence suggests that outdoor play deprivation contributes to obesity and, over time, the social and physical effects of obesity contribute, in circular fashion, to play deprivation. As the obese child grows progressively weak in relation to weight, and dexterity and socialization abilities decline or fail to develop, he or she may withdraw from trying and wander aimlessly during recess and neighborhood play, avoiding strenuous activity and seeking attention and status through bullying or helping smaller children. Many Americans have never appeared to understand that seemingly frivolous, inconsequential children’s play is an innate, biological quality, and its expression is essential to healthy development in both animals and humans. Both play deprivation and nature deprivation exact serious consequences on children’s development, health, and well-being. Similarly, both spontaneous play and experiences in nature are deeply rooted in history and culture and a growing array of evidence links biology to this triumvirate.
The effects of poverty

The crisis in play, fitness, and health—like other crises in the past—has inordinate effects across socioeconomic and cultural contexts. It extends beyond mere diminution of outdoor play and play environments and encompasses past failures to provide equal opportunity to all children, especially to the poor. Indeed, the solutions extend far beyond the provision of playgrounds, parks, and recess to encompass a shift in societal values and, consequently, a changed culture of childhood. In past centuries, the problems of obesity and poor physical fitness were primarily seen among the aristocracy or upper class. The poor, even children, engaged in hard manual labor, and their food was limited and came directly from the land. Now the diets of the poor are typically carbohydrate and calorie rich, and they suffer the same fate as other children by confinement to their indoor cyber playgrounds. Consequently, communities highest in poverty and lowest in educational levels have the highest rates of obesity and the poorest fitness levels.

Popular literature tells us that many kids are over-indulged by hovering, “helicopter” parents, and that is true, particularly in middle and upper income families. However, hovering is not so common among poor families and single-parent families. Many are forced by circumstances of survival to under-indulge their children, and the effects may be painfully visible when their children arrive at school. Such deficiencies are exacerbated by excessive high-calorie food and poor nutrition. Every organization that supports children’s play, such as foundations and non-profit organizations, or provides play and learning spaces, such as parks, children’s museums, and summer camps, can consider and implement ways to ensure that all children, rich or poor, have many opportunities for outdoor play in both built and natural playscapes.

Coupled with lack of play spaces and lack of support, children of slums and barrios may spend their childhoods with little or no opportunity to play in clean dirt; swim in clear, running streams; hear and see animals in their natural habitats; and feel the sensations of walking through meadows and woodlands on dewy mornings, climbing trees, building forts, and exploring wild places. These are the experiences that bond children to the natural world, sharpen their senses, inspire a sense of beauty, and build emerging concepts of biology, geology, physics and language. And they are critical brain-building experiences for complementing the physical, social, and cognitive skills developed in recess, free outdoor play, and compact nature areas in schoolyards and neighborhood parks.

The poor suffer more than others from the brain-dead view that the only worthwhile learning is that of classrooms full of bleary-eyed children memorizing trivia for tests.
More than a century ago immigrants were swarming into the crowded slums of large eastern cities, and families from failing farms were joining them in desperate efforts to improve their lives through the oft-failing promises of jobs in industry. Disease, homelessness, hunger, and crime were rampant; orphans were everywhere; and thousands of abandoned children were surviving in the streets, shanties, and alleys while others endured long hours in factories. These same dangerous places were their play environments. Seeing the deleterious effects on children, charitable groups, government, concerned individuals, educators, and churches awakened to the plight of children and initiated a series of reforms to create a “Child Saving Movement.”

Some of these reforms of the early child saving movement were intertwined by reason of common contributors and leaders. This period saw the creation of the Playground Association of America (PAA), the American Play and Playground Movement, and reforms or sub-movements to form children’s museums, school gardens, nature study, botanical gardens, and summer camps. All these reforms endured in some form to the present time and are now expanding, converging, and contributing to the resolution of the present crisis in children’s play, fitness, and health.

There are certain common threads among the philosophies and work of many of the world’s most prominent philosophers and scholars throughout earlier historical eras and the more recent research of leading scholars across the behavioral sciences. Despite the passage of centuries, many of the lessons drawn out here are still widely ignored in American schools and in American playgrounds—specifically the lessons that individual differences in children are universal; that there are stages in childhood that should be recognized; that adults can learn much about child rearing and education by observing children; that all the senses should be trained; that direct experience should play an important role in child rearing and education; that work and learning should be playful; that kindness should rule over punishment; that objects and events must be observed, felt, and experienced, in concrete form; that schools should be child centered; and that play, physical activity and experiences in nature are essential for the health and development of children. These are lessons forgotten or yet to be learned by those responsible for contemporary actions and policies that reduce recess, playscapes and free, spontaneous outdoor play in nature.
Our present play and nature crisis is far more extensive and complex than the crisis in city slums a century ago, yet during this first decade of the 21st century, a slowly growing force of parents, professional organizations, local, state, and national government agencies, and schools and park systems are joining forces to combat the debilitating consequences of play deprivation and the disappearance of natural environments for play. The nature and scope of children’s play and the quality and availability of their play environments have gone full circle from nature and improvisation and back to a rapidly emerging focus on nature. A much-needed contemporary child saving movement is emerging, and unprecedented energy is directed to saving children’s free, spontaneous outdoor play, recess, and natural and built play environments. This movement recognizes the need for a reasoned integration of technology and nature in children’s play and work lives. Many skills attainable through playing with cyber toys and carefully selected play equipment are beneficial for child development, fitness, and success in a modern, technological, urban oriented age. It is balance—a natural balance—that children need in their play and in their grounds for play.

I recently attended an overflow crowd of officials and leaders of local, state, and national agencies and organizations working with the Children and Nature Network (C&NN) to formulate plans for combating many factors underlying the present health and fitness crisis—neighborhoods unfriendly to children’s play; loss of nature and outdoor play and work; regimented, test based schooling; fearful, hovering parents; diminution of school play, recess and physical education; and excessive safety standards and threats of playground injury lawsuits. Such gatherings are growing in frequency as North Americans and others throughout the world are increasingly seeing the effects of play deprivation in observable, measurable changes in natural and built environments and opportunities for children’s play and learning. Americans eventually respond and resolve major crises, but only after the consequences begin to threaten their pocketbooks, their security, and eventually their children.

All this could be improved and hastened by creating natural spaces and activity-friendly neighborhoods that are safe, challenging places to explore and play, using mass media to educate the public; focusing on relieving poverty; providing health and physical education classes in all schools; reinstating daily recess for elementary schools; and reducing significantly the time many children spend in cyber play. We can take lessons from solutions to past crises—slavery and emancipation struggles and successes; the plight of children in cities a century ago and the early child saving movement; the Great Depression and the New Deal; World War II and the world alliance; the failed responses to hurricanes Katrina, Gustav, and Ike; and the economic crisis exploding in 2008 and continuing into 2009. The resolution to such crises requires public awareness of the severity of the consequences, shared leadership, and local, state and national and/or international coordination.
Growing interest in preserving the planet and getting children back to nature are being independently spurred by Al Gore’s (2006) book, *An Inconvenient Truth*, and his Academy Award winning documentary by the same title, and Richard Louv’s (2005, 2008) best-selling book, *Last Child In the Woods: Saving Our Children from Nature-Deficit Disorder*. Both are stimulating a new awareness and call to action. While Al Gore focused on building public awareness concerning global climate change, Richard Louv, Cheryl Charles, and others formed the Children & Nature Network (C&NN) to build an international movement to reconnect children and nature. By 2009 they fostered grassroots initiatives of like-minded people from many disciplines in local, national and international settings to provide news and research, tools, and a growing network of exemplary outdoor play and nature programs for children. In 2006, a handful of children and nature collaboratives were formed in the U.S. By 2009, more than 60 state and regional campaigns and community-based, multi-sector collaboratives had formed or were being assembled, and bills were passed in several states to support the back to nature campaign for children. Consistent with the trend of these initiatives, the scope broadened to include religious leaders (spiritual wonders of nature), the Sierra Club (saving the planet), and the health care community (the health connections). In sum, the appeal is virtually universal—and rapidly spreading. Current, comprehensive reviews of research and extensive national and international news about what is known and not known about the nature deficit and the spread of the nature movement are available at www.childrenandnature.org. These and many other positive changes to reconnect children with nature are emerging, fostered in large part by C&NN.

Intensified awareness of relationships between learning, health, obesity, and human well-being brought these concerns to a nationwide and later, an international audience. On April 24, 2006 at an event at the National Press Club, Richard Louv and Cheryl Charles called for a nationwide campaign to “Leave No Child Inside” and to reconnect children and nature. By June 2007, the campaign had been extensively reported by the media throughout the United States and Europe, and public consciousness and action had attracted a diverse assortment of people who were working together on a wide range of initiatives—walkable cities, active-living by design, simple living, health, citizen science, and land trust movements.

A landmark event took place in Washington in 2008 when the “No Child Left Inside Act of 2007” was ratified by Congress. This Act was built from evidence provided by the Children and Nature Network and others that out-of-classroom learning is critical for children’s emotional, physical and intellectual health. Research indicated that the pressures for testing resulting from the “No Child Left Behind Act” were damaging to children’s achievement, development, and fitness, while outdoor activity and first-hand experiences in nature can improve academic performance, self esteem, responsibility, personal health (including obesity), and an understanding of nature. The Act focused on environmental literacy for children in kindergarten through 12th grade, training for their teachers, and education to help combat climate change and preserve the environment.
City kids in confined schools and neighborhoods, especially those in slums and barrios, cannot be taken to the wilderness regularly, but thoughtful, innovative adults can bring exciting chunks of nature to city schools, neighborhoods, and parks. Some playground planners are doing just that by helping child care centers, parks, and schools rebuild their stark, fixed parks and playgrounds and integrating nature into limited spaces. Over a ten-year period, Robin Moore and Herb Wong (1997) transformed an asphalt schoolyard playground into a naturalized environment or “environmental yard.” Their research and work with children are a profound expression of the value of play and natural habitats and a powerful example of qualitative research. Numerous other professionals lend their research and experience in transforming sterile, fixed playgrounds into integrated play-yards featuring materials and natural environments that accommodate a wide range of developmental needs.

The University of Texas Play and Play Environments Research Project (Frost et al., 1979, 2004, 2008) has operated continuously for more than three decades at Redeemer Lutheran Church, enrolling 500 children in Austin, Texas. This research site features three play environments with both manufactured and contrived equipment to accommodate various forms and levels of play, games, vegetable and herb gardens, butterfly gardens, gazebos, greenhouses, and animal habitats. The butterfly garden was certified as a “Schoolyard Habitat” by the National Wildlife Federation. The overall environment is a science laboratory, a place for relaxation and reflection, a challenging playground for a wide range of children’s play, and a site for scholarly research by university students and professors. The most popular natural area is a half-acre wetlands created from a retention pond extensively re-fashioned to become a wilderness wonderland. One of the children affectionately dubbed it “the land down under,” a name that has been adopted by the entire school. In the Redeemer playscapes and wildscapes, spontaneous play and hands-on work blend into one integrated, outdoor compendium of physical, social, and intellectual activity with all the accompanying fun and learning. Recess and physical education are available every day, and the cafeteria features a salad bar and organic food, some from the school gardens. The overweight and obesity rate is very low in a state where the overall rate for children is 19 percent.
There are both likenesses and differences in the developmental values of typical built play environments, schoolyard habitats or gardens, and natural playscapes. Studying and working in natural environments are complementary to the physical activities of playing in built play yards. Children need both nature study and free, spontaneous play in and on physically challenging play spaces and equipment. Schoolyard gardening and nature study provide healthy physical activity and build knowledge. Playground apparatus builds brachiating skills in traversing overhead apparatus, swinging, running, sliding, chasing, throwing, catching, climbing, and playing traditional games, not readily available in most school gardens and nature areas. In most settings, both natural and built play areas are needed for the fitness and healthy development of children.

City farms, sometimes integrated with adventure playgrounds, are growing in popularity in many regions of the world. The European Federation of City Farms are environmental and agricultural projects where children and adults work, play, and learn about the natural environment and its inter-relationship with plants and animals. The city farms started in the 1970s and resulted from the desire of people all over Europe to counter the alienation of people from nature. Presently, there are eight city farm federations in Europe, and they are spreading around the world. The gardening movement is expanding in America with community gardens being expanded and home and school gardens becoming more popular, partly because of rapidly rising food prices, but also due to concern about the potential health consequences of processed food and additives, and the need for children to develop the social, emotional, intellectual, and physical skills resulting from gardening. Fortunately, gardens do not require extensive spaces and can be integrated into school yards, playgrounds, backyards, vacant lots, and city parks.

Those of us who played in the wilderness as children naturally reflect about our freedom to roam the hills and valleys, explore the remote places, learn the ways of animals and savor the delights of nature, and we yearn for a return to such awe-inspiring experiences. We will not see most parents suddenly turning their children loose, unsupervised, in such wild places, even if they were readily available. Unfortunately, they are not available for most children due to urbanization, private ownership, and remoteness from neighborhoods. In January 2008, a Texas landowner sprayed children playing in a public creek near his property with shotgun pellets. Further, thanks to sensational, repetitious reporting by the media about child abductions, injuries, and other possible calamities, parents no longer allow their children to venture far from home, in many instances, even within their own neighborhoods.
There is no “quick fix” or “magic bullet” for resolving the play, fitness, and health crisis for American children. The approaches must be multiple, coordinated, and preventive in nature. They must be expansive in scope, taking on some of the characteristics of a Marshall Plan or a Moon Shot, or the early 20th century child saving movement. Fortunately, many of the innovative approaches for saving children, initiated during that movement, continued and are expanding during the early 21st century. We need to organize communities; rethink and rebuild neighborhoods that make it easy to walk to stores, parks, playgrounds, and schools—and invite various forms of locomotion—walking, jogging, biking. We need to combine the necessity for experiences in nature and physical activity with the greening of America and protecting the planet from global warming.

Only the rare crisis stands alone, unaffected by efforts to resolve another. We must get people emotional in a positive sense about saving play and natural play environments for present and future generations, and call on politicians, organizations, agencies, and volunteer groups to develop national and local policies that directly or indirectly help resolve the crises affecting children. Many have started, and more are joining the evolving movement at an unprecedented rate. On March 4, 2009, Gordon Brown, Prime Minister of the U.K., addressed the U.S. Congress about the worldwide economic crisis, stating that he had never before seen a world so ready to “come together” as now to seek resolutions.

The lessons from successes and failures in dealing with crises throughout America’s history pose formidable challenges for resolving our complex, interrelated, human-made play, play environments, fitness, and health crisis. Having seen the history of the diminution of play and play environments, and the changing culture of childhood, and alert to the consequences, we must help children rediscover traditional free, creative, outdoor play and recess, and their wild, natural playscapes. The future test of our resolve is whether we “come together,” as did our counterparts a century ago, to form a child saving movement to rescue children in the forgotten streets and slums of cities, the barrios of border towns, and the ravages of life in many out-of-the-way regions of our southern mountains. We must free all children and teachers from the illogical rigors of test-based school curricula and isolated cyber playgrounds, release them to play, and learn to preserve their natural play and learning environments. Americans are “coming together” but we are not yet ready to dance in the end zone because we forget too easily the lessons of history.


Joe Frost, Ed.D., L.H.D., Parker Centennial Professor Emeritus, University of Texas, has lectured throughout Europe, Asia, and North America and is currently writing articles and books, lecturing at professional conferences, directing a three-decades-running research program on children’s play and play environments, and serving as a volunteer to not-for-profit child care organizations. His most recent books are The Developmental Benefits of Playgrounds (with Pei San Brown, John Sutterby, & Candra Thornton); Play and Child Development (third edition, with Sue Wortham & Stuart Reifel); and A History of Children’s Play and Play Environments: Toward a Contemporary Child Saving Movement, resulting from a four-year research and review of hundreds of out-of-print books, historical documents, and current publications on children’s play. He served as President of the International Play Association (USA) and President of the Association for Childhood Education International (ACEI) and has received numerous awards, including the Patty Smith Hill Award by ACEI, and the Great Friend to Kids Award by the Association for Children’s Museums.
The mission of the Children & Nature Network (C&NN) is to build a movement to reconnect children and nature. The primary goal of the C&NN is to achieve systemic change so every child, every year, every day, will have the opportunity to directly experience contact with nature. Research indicates that children who explore, learn, and play outside on a regular basis are healthier, happier, smarter, more cooperative, more creative and more fulfilled. Their well-being is enhanced while they develop a sense of place and bond with family, community and their environment. C&NN builds awareness, provides access to state-of-the art resources, supports the grassroots with tools and strategies, develops publications and educational materials, synthesizes the best available research, and encourages collaboration to heal the broken bond between children and nature. Since our founding in 2006, C&NN has fostered grassroots initiatives in more than 50 cities, states and nations. Our geographic reach is international, beginning predominantly in the United States and Canada. No other organization offers such a comprehensive, non-partisan, multi-sector approach to effecting social change to reconnect children and nature.