

# DISAPPEARING OUTDOORS:

## The Changing Nature of Childhood Play

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**January 11, 2010**

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## Introduction

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With around 85 billion nerve cells in the human brain, the potential cognitive and physiological capabilities of humans far exceed those of any other creature on earth.<sup>1</sup> How this potential develops during one's life is a subject of great debate. Many studies have been done to try and understand the inner-workings of the brain and its development throughout life. Exposure to one's environment may play a key role. By placing people in different environments, scientists have been able to study the effects that an environment has on people's mental health as well as their physical development. Although research is still ongoing, current findings indicate that outdoor environments stimulate humans in ways that are difficult to replicate. The impact is seen in both the brain and body, from motor skills to decision making. For generations children played outdoors and enjoyed these developmental benefits, but children today are following a different course. Now, the foundation of this relationship between man and the environment is changing. As cultural change leads to a decoupling of this relationship, a host of new problems have emerged.

One of the greatest changes in the last century is the transition away from outdoor experiences. Increasingly, Americans struggle to find time to spend in outdoor environments. In this dynamic and continuously changing world, new technologies, increased parental anxiety, and unhealthy lifestyle choices have crept into many American households and as a result have led many people to stay indoors. One of the key groups who have been highly affected by these changes has been children. A growing number of parents consider sedentary activities like watching T.V. and surfing the Internet as safe alternatives to having their kids play outside. This, in turn, is contributing to increased rates of obesity and other health problems. Yet, new

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<sup>1</sup> Robert W. Williams and Karl Herrup, "The Control of Neuron Number," *Annual Review of Neuroscience* 11, (1988): 424.

evidence suggests that because of this decreased exposure to the outdoors, children and young adults are not being given the necessary physiological and psychological stimulation needed for healthy development.

### *Outdoor Exposure and Healthy Development*

The benefits of outdoor play go far beyond treating obesity. The wide array of variables encountered in outdoor activities can benefit all children and young adults. It promotes the development of critical problem solving and creative thinking skills. This, in turn, aids in academics. In several studies that have been conducted across the nation, researchers have found positive correlations between academic achievement, children's concentration, and being physically active. In one study conducted in Georgia in 1998, researchers found that fourth-grade students who were given the opportunity to have a non-structured break from classroom activities showed increased concentration and were more attentive in class than those students who were not offered a non-structured break.<sup>2</sup> In another comprehensive national study in 2006 involving more than 11,000 adolescent participants, researchers found that those adolescents that were involved in sports either at home, or in a school environment, compared to those adolescents who were not involved in sports, showed a twenty-percent better chance earning an exceptional grade, such as an "A" in the subjects of Math and English.<sup>3</sup> While these studies only represent a small portion of the studies that have been conducted looking at the relationship between physical activity in children and academic achievement, one major conclusion can be drawn from them—participating in activities outside the structured classroom setting have the potential to improve children's cognitive functions and their concentration.

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<sup>2</sup> Stewart G. Trost, *Active Education: Physical Education, Physical Activity, and Academic Performance*, Fall 2007 Research Brief, San Diego State University, (San Diego: Active Living Research, 2007), 3.

<sup>3</sup> *Ibid.*, 2.

In the outdoors, different activities present opportunities for rewards and consequences not seen in activities indoors. One only needs to go camping at a remote site to learn that such simple acts as building a fire, finding suitable wood, cooking food, staying dry, and not attracting unwanted guests (i.e. bears, scavengers, etc.) can have real consequences. A day in the woods involves countless decisions, the results of which – for better or worse – are soon discovered and hopefully learned.

In analyzing the mental development of children, one growing area of study is how outdoor learning affects a child's ability to learn new concepts. What researchers have been finding is that children who learn outdoors are showing improvements in subject areas like math, science, language arts, and social studies.<sup>4</sup> In a study conducted by the California Department of Education looking at science programs that were held in the outdoors, the researchers found that those students who participated saw a rise of 27% in their test scores.<sup>5</sup> Based on pre and post survey ratings given by teachers who participated in the study, improvements of over ten percent in the areas of leadership, relationships with peers, and conflict resolution, and an improvement of over twenty percent in the student's problem solving abilities were seen.<sup>6</sup> In general, exposure to the outdoors aids in mental development in ways that cannot be duplicated indoors. The infinite discovery of things in one's environment including the bugs, the trees, and the smells—all of these things feed the senses in a way that is unpredictable and impossible to replicate. In sum, the outdoor environment is one large experiment—larger than humans could ever create.

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<sup>4</sup> U.S. Fish & Wildlife Service, "(Educators) Factsheet for Teachers Final," *U.S. Fish & Wildlife Service*, March 2008, [http://www.fws.gov/letsgooutside/PDF/\(EDUCATORS\)Factsheet%20for%20Teachers%20Final.pdf](http://www.fws.gov/letsgooutside/PDF/(EDUCATORS)Factsheet%20for%20Teachers%20Final.pdf) (accessed November 21, 2009).

<sup>5</sup> Ibid.

<sup>6</sup> American Institutes for Research, *Effects of Outdoor Education Programs for Children in California*, Research Study, Palo Alto: American Institutes for Research, 2005: 19.

# The Disappearing Outdoors

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Over the past 40 years, much has changed in the way children play and learn about their environment. In the past, federal legislation and environmental activism drove the public's interest in the environment. In the spring of 1970, the world watched as America celebrated its first Earth Day. This defining day was the result of many movements that had come together for one cause—the environment. Just prior to this landmark event, the National Environmental Policy Act of 1969 was passed which set up the framework for public officials to be able to assess the environmental impacts of projects taking place across the United States. Around this same time, the environmental education movement began to help integrate new social programs into the fabric of the American school system. Ecological education, recycling, and discussions about humanity's impact on the environment began to gain steam. Several social programs that took hold were:

- Project Learning Tree—which began in 1976—the product of natural resource managers and educators from the National Forest Foundation and the Council for Environmental Education collaborating to create a new environmentally-focused curriculum for “elementary and secondary students and their teachers.” Since its inception, this program has gone international and can now be found in more than 11 countries around the world, in addition to all 50 US states.<sup>7</sup>
- Project WILD—which began in 1983—as an effort by the Council for Environmental Education to “support environmental education through the management and development of environmental education programs; to publish

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<sup>7</sup> American Forest Foundation, “About PLT: Our History: Project Learning Tree,” American Forest Foundation, [http://www.plt.org/cms/pages/21\\_19\\_2.html](http://www.plt.org/cms/pages/21_19_2.html) (accessed September 6, 2009).

and disseminate environmental education materials; and to facilitate the development and maintenance of partnerships for environmental education.”<sup>8</sup>

More recently, federal legislation has contributed marginally, if at all, to the assembly of an infrastructure for environmental education. The National Environmental Education Act of 1990 set out to restore federal involvement in environmental education and reinstate an Office of Environmental Education within the Environmental Protection Agency.<sup>9</sup> On the other hand, countering these efforts is another piece of federal legislation that has negatively impacted environmental education: the No Child Left Behind Act of 2001. In order to comply with this law, many schools across the nation have been forced to sideline environmentally related field trips that were once part of their curricula in favor of preparing students for standardized tests.<sup>10</sup> Although the graph below only shows the average reading scores for eighth graders from 1998 to 2007, the data suggests that the implementation of The No Child Left Behind Act has done little to improve test scores among school children, while environmental education continues to be sidelined.



**Graph of the average National Assessment of Educational Progress reading scores for eight graders<sup>11</sup>**

<sup>8</sup> Council for Environmental Education, “About Us: History: Project WILD,” <http://www.projectwild.org/history.htm> (accessed September 6, 2009).

<sup>9</sup> David M. Bearden, *National Environmental Education Act of 1990: Overview, Implementation, and Reauthorization Issues*, CRS Report for Congress, Library of Congress, (July 2006): 1.

<sup>10</sup> Mike Weilbacher, “The Window Into Green,” *Educational Leadership* (May 2009): 41.

<sup>11</sup> Alain Jehlen, “Is NCLB Working?: The ‘Scientifically-Based’ Answer,” *NEA Today*, January/February, 2009, 31.

There are also other factors reducing outdoor playtime. The number of structured activities children are involved in has increased over time, so too has the homework loads children are now receiving. In a study done by the University of Michigan looking at the homework loads of children in 1981 and in 1997, researchers uncovered a surprising change. “Although minimal changes occurred on the high school level, the amount of homework assigned to kids from six to nine almost tripled during that time!”<sup>12</sup> With an even heavier emphasis on schoolwork and standardized testing as a result of the No Child Left Behind Act of 2001, the amount of homework today may well have increased even more.

## A Changing Childhood Experience

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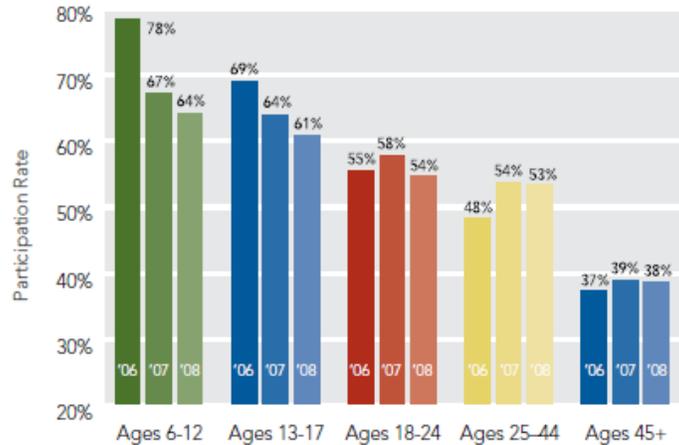
The experience of being a child in America has changed over time, and unfortunately, in ways that are not as healthy. To many, the magnitude of the issue is shocking. In the most comprehensive study available to date, The Outdoor Foundation interviewed over 41,000 people to determine their participation in outdoor activities.<sup>13</sup> Their goal was to try and find out if people were participating in outdoor activities, what activities they were specifically participating in, and the reasoning behind their decisions.

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<sup>12</sup> Glori Chaika, *Education World Administrators Center: Help! Homework is Wrecking My Home Life!* August 8, 2000, [http://www.educationworld.com/a\\_admin/admin/admin182.shtml](http://www.educationworld.com/a_admin/admin/admin182.shtml) (accessed November 21, 2009).

<sup>13</sup> The Outdoor Foundation, *Outdoor Recreation Participation Report, 2009*, (The Outdoor Foundation, February 2009), 3.

**Participation in Outdoor Recreation 2006 to 2008**  
All Americans



### **Graph of overall participation in outdoor recreation in the US<sup>14</sup>**

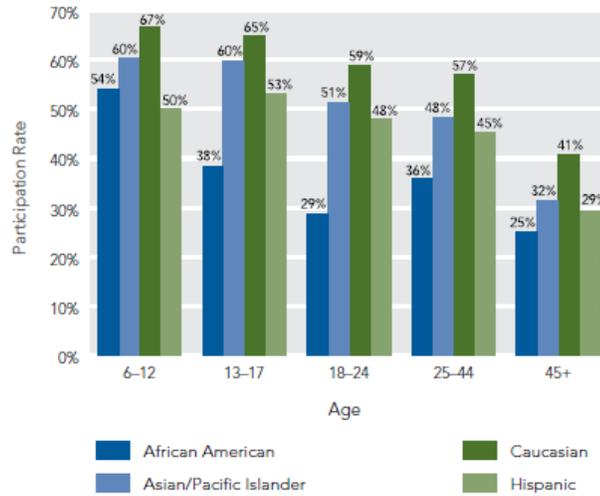
They were surprised to find out that, from 2006 to 2008, there was a significant drop in outdoor recreation participation among kids ages six to seventeen.<sup>15</sup> Why such a precipitous drop? Unfortunately, the study did not include follow-up research to uncover the reasons for this steep decline. Needless to say, the Outdoor Foundation that sponsored the study is seriously concerned. When asked why they did not participate in outdoor activities more often, a vast majority of youth ages six to twenty-four cited a lack of time as their primary reasoning.<sup>16</sup> Among those in this same age group that did not participate in outdoor activities at all, a lack of parental involvement as well as an overabundance of homework were some of their

<sup>14</sup> The Outdoor Foundation, *Outdoor Recreation Participation Report, 2009*, (The Outdoor Foundation, February 2009), 23.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*, 29.

**Participation in Outdoor Recreation 2006 to 2008**  
All Americans by Ethnicity



**Graph of participation in outdoor recreation by ethnicity<sup>17</sup>**

top reasons.<sup>18</sup> The fact that the overall participation rate among kids had declined so dramatically was only the first surprise. The second major finding was the impact of ethnic backgrounds on outdoor activity levels. As the chart above shows, participation rates vary widely, but are particularly low among African Americans. It appears that class does play a factor in participation rates. “Low income communities typically offer fewer opportunities for residents to be physically active. In minority communities where only 5 percent of residents have a college education, teens have access to about half of the recreation facilities as teens living in predominantly white communities with college-educated residents.”<sup>19</sup>

A similar study conducted by the Outdoor Industry Foundation echoed the findings above, but more importantly, this study found that once individuals from differing ethnic

<sup>17</sup> The Outdoor Foundation, *Outdoor Recreation Participation Report, 2009*, (The Outdoor Foundation, February 2009), 33.

<sup>18</sup> *Ibid.*, 30.

<sup>19</sup> Jacqueline Kerr, *Designing for Active Living Among Children*. Fall 2007 Research Summary, (San Diego: Active Living Research, 2007), 2.

backgrounds were introduced to outdoor recreation, the differences among ethnic groups dissolved.<sup>20</sup> Moreover, once individuals were exposed to outdoor activities during their youth, they continued to participate at substantially higher levels later in life.<sup>21</sup> Without that exposure, many individuals are unaware of the abundance of outdoor opportunities available. It may be that as electronic devices compete with these opportunities, fewer and fewer children even consider what alternative activities are available to them.

New attractions are also keeping children inside. Children are spending significant portions of their days watching television and surfing the Internet. In a 2008 study conducted by The Nielsen Company, who specializes in gathering global information, they found that during just the month of May, children between the ages of two and seventeen spent an average of nearly 102 hours during the month either watching TV or surfing the Internet.<sup>22</sup> In a similar study conducted by The Nielsen Company from 2004 to 2006 looking at game console ownership in the US, the findings indicated that the number of video game consoles in households had grown by an astonishing 18.5%. Between 2004 and 2006, the number of game consoles jumped from a reported 38.6 million to 45.7 million.<sup>23</sup> During this timeframe, a new era of game consoles emerged on the market, which likely contributed to this sharp increase. Now, nearly 80% of males between the ages of twelve and seventeen have access to some sort of

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<sup>20</sup> Outdoor Industry Association, *The Next Generation of Outdoor Participants Report, 2007*, (Outdoor Industry Association. February 2007), 14.

<sup>21</sup> Ibid.

<sup>22</sup> Gary Holmes, "Nielsen: Nielsen Reports TV, Internet and Mobile Usage Among Americans," *The Nielsen Company*, July 8, 2008, [http://en-us.nielsen.com/etc/content/nielsen\\_dotcom/en\\_us/home/news/news\\_releases/2008/july/nielsen\\_reports\\_tv.mbc.4021.RelatedLinks.77612.MediaPath.pdf](http://en-us.nielsen.com/etc/content/nielsen_dotcom/en_us/home/news/news_releases/2008/july/nielsen_reports_tv.mbc.4021.RelatedLinks.77612.MediaPath.pdf) (accessed November 21, 2009).

<sup>23</sup> Karen Gyimesi, "Nielsen: Nielsen Says Video Game Penetration in U.S. TV Households Grew 18% During the Past Two Years," *The Nielsen Company*, March 5, 2007, [http://en-us.nielsen.com/etc/content/nielsen\\_dotcom/en\\_us/home/news/news\\_releases/2007/march/Nielsen\\_Says\\_Video\\_Game\\_Penetration\\_in\\_U\\_S\\_TV\\_Households\\_Grew\\_18\\_During\\_the\\_Past\\_Two\\_Years\\_.mbc.91917.RelatedLinks.70392.MediaPath.pdf](http://en-us.nielsen.com/etc/content/nielsen_dotcom/en_us/home/news/news_releases/2007/march/Nielsen_Says_Video_Game_Penetration_in_U_S_TV_Households_Grew_18_During_the_Past_Two_Years_.mbc.91917.RelatedLinks.70392.MediaPath.pdf) (accessed November 21, 2009).

game system in their homes.<sup>24</sup> While girls play significantly less video games than boys do, the influences of game console systems as well as trading card games have had a huge effect on children's play habits. Moreover, as shown in Appendix A on page 35, even with the impact of video games, girls still participate in outdoor activities at far lower rates than boys do.<sup>25</sup> Online sites have also played a role. Social networking sites such as Facebook and MySpace are keen attractions for young people. In fact, "...about 85% of students in supported colleges have a profile up on Facebook...[of those]...60% log in daily. About 85% log in at least once a week, and 93% log in at least once a month."<sup>26</sup> More recently, Facebook has begun accepting high school students as members.<sup>27</sup> Today the site has over 350 million total users – both teens and adults...and the average user spends nearly an hour per day on Facebook.<sup>28</sup>

Another emerging factor is safety. Access to safe play facilities in and around the home also plays a significant role in children's willingness to pursue activities outdoors. Three separate studies have documented the importance of this factor. Conducted in 2006, one study examined the activity levels of teenage girls who lived with and without recreational facilities near their homes. Of those surveyed, the results showed that girls who had access to facilities within a half-mile radius of their home spent at least an additional half-hour more engaged in

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<sup>24</sup> Karen Gyimesi, "Nielsen: Nielsen Says Video Game Penetration in U.S. TV Households Grew 18% During the Past Two Years," *The Nielson Company*, March 5, 2007, 2, [http://en-us.nielsen.com/etc/content/nielsen\\_dotcom/en\\_us/home/news/news\\_releases/2007/march/Nielsen\\_Says\\_Video\\_Game\\_Penetration\\_in\\_U\\_S\\_TV\\_Households\\_Grew\\_18\\_During\\_the\\_Past\\_Two\\_Years\\_.mbc.91917.RelatedLinks.70392.MediaPath.pdf](http://en-us.nielsen.com/etc/content/nielsen_dotcom/en_us/home/news/news_releases/2007/march/Nielsen_Says_Video_Game_Penetration_in_U_S_TV_Households_Grew_18_During_the_Past_Two_Years_.mbc.91917.RelatedLinks.70392.MediaPath.pdf) (accessed November 21, 2009).

<sup>25</sup> The Outdoor Foundation, *Outdoor Recreation Participation Report, 2009*, (The Outdoor Foundation, February 2009), 15.

<sup>26</sup> Michael Arrington, "85% of College Students Use Facebook," September 7, 2005, <http://www.techcrunch.com/2005/09/07/85-of-college-students-use-facebook/> (accessed January 6, 2010).

<sup>27</sup> *Ibid.*

<sup>28</sup> Facebook, Inc, "Statistics: Facebook," 2010, <http://www.facebook.com/press/info.php?factsheet> (accessed January 6, 2010).

physical activity each week than those who did not.<sup>29</sup> In another study that was conducted on a national level with over 20,000 teenage participants during 2006, research showed that communities with recreational facilities had substantially fewer problems with obesity. In this case, communities with no recreational facilities were compared with those communities that had seven or more recreational facilities within a five mile radius. The results were startling—communities with recreational facilities had 32% fewer overweight teens.<sup>30</sup> In efforts to examine what effects extended operation hours and adult supervision had on children's play time, a comparative study in New Orleans was done over a two year period between a school which had implemented extended facility use hours and supervision and one that did not. The effects on children's activity levels were dramatic. At the school with extended hours and adult supervision, the activity levels of children were 84% higher.<sup>31</sup>

As the American culture changes, opportunities for outdoor experiences have been largely reduced or eliminated. This has led to changes in the way children interact with each other. While school has been known as a place for learning and personal growth for many students, the elimination of recess from some school curricula has forever changed their educational experience. The memorable childhood experiences during recess that were once part of growing up now seem to be a thing of the past. U.S. statistics show just how widespread this trend has become. One study showed that in 2001, recess "in some 40% of the 16,000 U.S. school districts...had been eliminated or was being considered for elimination."<sup>32</sup> Physical fitness programs in schools are being sidelined in favor of trying to improve children's academic

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<sup>29</sup> Jacqueline Kerr, *Designing for Active Living Among Children*. Fall 2007 Research Summary, (San Diego: Active Living Research, 2007), 2.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Tim Lougheed, "Wild Child: Guiding the Young Back to Nature," *Environmental Health Perspectives* 116, no. 10 (October 2008): 439.

performance on standardized tests, even though there is a lack of evidence that there is even a positive correlation between eliminating physical fitness programs and an improvement in test scores.<sup>33</sup> Eliminating recess is not the only concern, because many schools have now put heavy restrictions on the activities kids are allowed to participate in while recreating outside. "... [S]chools have banned games such as tag and soccer, citing concerns that such forms of play lead to aggression between children and lawsuits if kids get hurt."<sup>34</sup> Decisions like these that were once in the hands of the children have now been put in the hands of school administrators looking to better their school's academic standings.

## Social Factors Contributing to Cultural Change

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There are many social factors that are contributing to a lack of outdoor experiences. Recent studies have focused in on parental anxiety as the main social factor changing children's relationships with the outdoors, and there are several causes behind that anxiety.

### *Parental Anxiety*

News stories of crimes against children are one big reason for this change. "Parents are not only more anxious about their children being a victim of crime or a fatal accident; they are also anxious about bullying and academic struggles."<sup>35</sup> Compared to the baby boomer generation, which saw its share of bumps and bruises in childhood, there has been a change in the perception of the toughness of today's children.

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<sup>33</sup> Dawn Podulka Coe et al., "Effect of Physical Education and Activity Levels on Academic Achievement in Children," *Official Journal of the American College of Sports Medicine* 38, no. 8 (2006): 1515.

<sup>34</sup> Tim Lougheed, "Wild Child: Guiding the Young Back to Nature," *Environmental Health Perspectives* 116, no. 10 (October 2008): 439.

<sup>35</sup> John A. Sutterby, "What Kids Don't Get To Do Anymore and Why." *Childhood Education* (Fall 2009): 291.

Understanding the historical context behind such a change helps to reveal why it occurred. In an analysis done by Dr. Pamela Wridt, the spatial and environmental experiences kids had in New York City between the 1930's and early 2000's were examined. For those growing up in the 1940's, the primary space for playing was in the streets, mainly because it was easy for parents to keep an eye on their children.<sup>36</sup> As the number of automobiles using the streets began to increase in the 1950's, a shift towards using playgrounds and parks provided children with a safer environment in which "play leaders"—individuals hired by the city to provide supervision—could better supervise children and ensure their safety.<sup>37</sup> Going into the 1970's and 1980's, the city began to run into financial trouble and investment in parks and playgrounds as well as the supervision by "play leaders" was discontinued. Soon thereafter, drugs and crime began to take over these recreational areas—making them unsafe for children.<sup>38</sup> With this transition from safe outdoor play spaces to dangerous drug-infested parks, children's play activities began to move indoors. At the same time, new technological innovations began to decrease children's interests in playtime activities, changing the relationships kids once had with the environment from then on.<sup>39</sup> As the cultural views among children have evolved due to this changing relationship with local environments, there has also been an underutilization of hockey rinks, baseball diamonds, and open green spaces. With fewer and fewer kids venturing outside to play, the pick-up games that used to be common have almost become obsolete. Although Pamela Wridt's analysis was conducted in New York City, this changing relationship can be seen across the nation.

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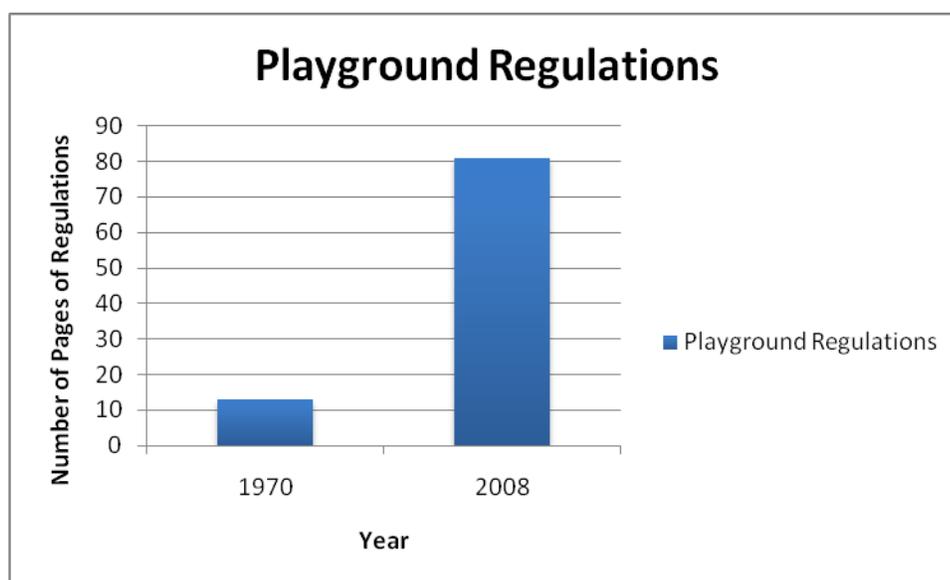
<sup>36</sup> Pamela J. Wridt, "An Historical Analysis of Young People's Use of Public Space, Parks, and Playgrounds in New York City," *Children, Youth and Environments* 14, no. 1 (2004): 92.

<sup>37</sup> *Ibid.*, 94.

<sup>38</sup> *Ibid.*, 96.

<sup>39</sup> *Ibid.*, 100.

The safety of American children has now become a priority for many parents. “Physical injury to children is no longer accepted as a fact of growing up.”<sup>40</sup> A great example of this can be seen in how the playground safety guidelines have changed for the Consumer Product Safety Commission. Over the past 28 years, the guidelines for safety have increased from 13 to 81 pages in length—largely due to parental concern and the increasing amount of litigation.<sup>41</sup> As can be seen in the graphs below, not only has the number of pages of regulations increased dramatically between the 1970s and the early 2000s, but the percentage of US children who are overweight also increased dramatically. While there may not be a direct correlation between these two occurrences, this disturbing pattern makes it clear that the time children are spending being active outdoors has decreased significantly since the 1970s.

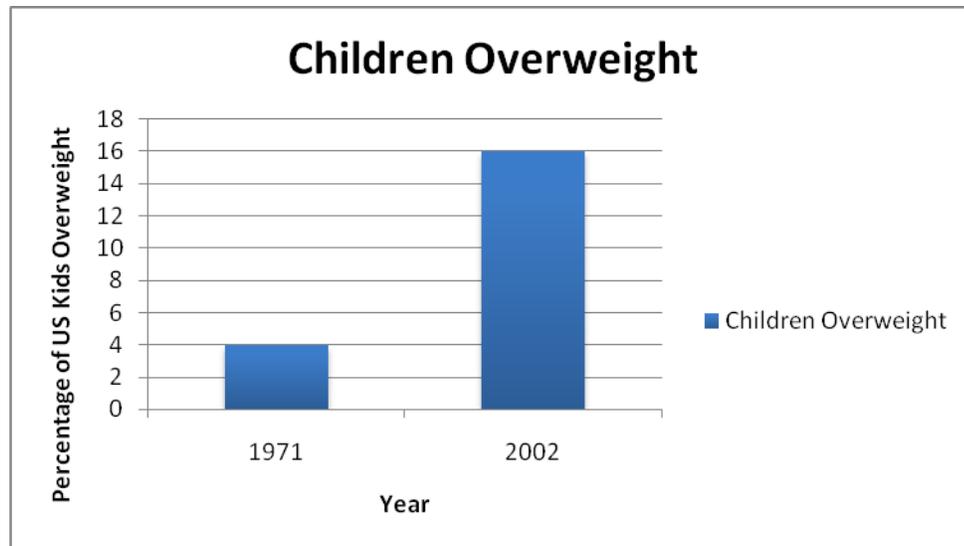


**Graph showing the number of pages of playground regulations in 1970 and 2008<sup>42</sup>**

<sup>40</sup> F. Furedi, *Paranoid Parenting: Why Ignoring the Experts May be Best for Your Child*, (Chicago: Chicago Review Press, 2002), 47-48, quoted in John A. Sutterby, "What Kids Don't Get To Do Anymore and Why." *Childhood Education* (Fall 2009): 290.

<sup>41</sup> Joe L. Frost, "Strong National Museum of Play: About Us: Files: Frost Release," *Strong National Museum of Play*, October 22, 2008, [http://www.museumofplay.org/about\\_us/files/Frost%20release.pdf](http://www.museumofplay.org/about_us/files/Frost%20release.pdf) (accessed November 21, 2009).

<sup>42</sup> Ibid.



**Graph showing the percentage of US children overweight in 1971 and 2002<sup>43</sup>**

Additional studies like the one Rhonda Clements conducted in 2004 indicate that parents are well aware that the amount of outdoor play is considerably less than when they were young. In a survey of over 800 mothers from across the country, Clements asked participants questions regarding their childhoods as well as those of their children.<sup>44</sup> What she discovered was that “...70 percent of the mothers reported playing outdoors every day when they were young, compared to only 31 percent of their children”<sup>45</sup> Contributing to this significant drop, “...82 percent of the mothers identified crime and safety concerns as factors that prevent their children from playing outdoors.”<sup>46</sup> Based on the additional questions asked below, it is clear that a large majority of mothers understand the value of allowing their children to play outdoors.

<sup>43</sup> John A. Sutterby, "What Kids Don't Get To Do Anymore and Why." *Childhood Education* (Fall 2009): 291.

<sup>44</sup> Rhonda Clements, "An Investigation of the Status of Outdoor Play," *Contemporary Issues in Early Childhood* 5, no. 1 (2004): 71.

<sup>45</sup> *Ibid.*, 72.

<sup>46</sup> *Ibid.*, 74.

Outdoor play positively impacts children’s physical and motor development	93%
It affects their child’s social skills	75%
It affects artistic and creative skills	51%
Identified outdoor play as a positive stimulus for cognitive skills	45%
Saw outdoor play as a means to increase the child’s feeling of self-worth	82%
Valued outdoor play as a means to foster informal learning experiences that can be transferred to the classroom	81%

### Additional questions asked of the mothers surveyed<sup>47</sup>

With such a large number of mothers conscious of the overwhelming benefits of outdoor experiences, the challenge becomes convincing them that the benefits to their children’s mental and physical health far outweigh the risks of playing outdoors.

## Consequences of Cultural Change

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Without outdoor recreation, children are losing touch with their environment. Today, children have become disconnected from the local creatures and habitats surrounding the places where they live. “In one study, 8-year-old children were better able to identify *Pikachu*, *Metapod*, and *Wigglytuff* (characters from the Japanese card-trading game *Pokèmon*) than common neighborhood flora and fauna, such as local oak trees.”<sup>48</sup> “In fact, a child is six times more likely to play a video game than to ride a bike.”<sup>49</sup> The consequences of these recent changes are now beginning to show. Decreased exposure to the outdoors can be seen in

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<sup>47</sup> Rhonda Clements, "An Investigation of the Status of Outdoor Play," *Contemporary Issues in Early Childhood* 5, no. 1 (2004): 74.

<sup>48</sup> Martha Driessnack, "Children and Nature-Deficit Disorder," *Journal for Specialists in Pediatric Nursing* 14, no. 1 (January 2009): 73.

<sup>49</sup> U.S. Fish & Wildlife Service, "(Educators) Factsheet for Teachers Final," *U.S. Fish & Wildlife Service*, March 2008, [http://www.fws.gov/letsgooutside/PDF/\(EDUCATORS\)Factsheet%20for%20Teachers%20Final.pdf](http://www.fws.gov/letsgooutside/PDF/(EDUCATORS)Factsheet%20for%20Teachers%20Final.pdf) (accessed November 21, 2009).

children's health. A host of new issues now plague children, from asthma and obesity to higher levels of parental stress. All of these are apparent in demands placed on the medical industry.

If being indoors is not healthy, not being active can be even worse. While the media points out that an increasing number of adults are obese, there has been little focus on the health of America's children. Easy access to cheap food coupled with an increase in sedentary behaviors is causing increased rates of childhood obesity. This and other health problems in children are taking a toll on America's health care system. According to the National Center for Health Statistics (2004), there was a 400% increase between 1971 and 2002 in the number of 6- to 12-year-old children who were overweight.<sup>50</sup>

In a weeklong exposé on the problem *The Washington Post* documented the medical community's rising degree of concern and frustration. Until recently, many people working in the medical community thought that childhood obesity was an isolated problem—which was affecting only a small portion of children across the US. However, what doctors are now finding is that the childhood obesity rate is far worse than they expected. In fact, "...researchers are [now] predicting that one of every two children will develop Type 2 diabetes because of excess weight, which raises the probability that they will die as much as 20 years younger than their parents." While there have been efforts by medical professionals to curtail this growing epidemic through weight-loss programs, there has been little success.<sup>51</sup>

... [What researchers are finding is that] It's not about dieting; it's about life choices. If a child watches six to eight hours of television a day, the first goal is to reduce the amount by an hour or two.... New research is showing that many overweight children who...

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<sup>50</sup> John A. Sutterby, "What Kids Don't Get To Do Anymore and Why." *Childhood Education* (Fall 2009): 291.

<sup>51</sup> Brigid Schulte, "The Search for Solutions," *Washington Post*, May 22, 2008.

develop uncontrollable appetite habits very young are often unable to recognize when they are full and need to relearn to listen to their internal hunger drive.<sup>52</sup>

Thus, what may have started out as an attempt to shelter children has instead produced a problem that some estimates predict will impact thirty percent of all American youth.

Contrary to popular opinion, many American homes may not be as healthy as people think. In particular, exposure to irritants commonly found in today's homes may be doing more damage than was previously known. In a study conducted by Felicia Wu and Tim Takaro, they found that "there is sufficient evidence of a causal relationship between asthma exacerbation and exposure to cats, cockroaches, house dust mite, mold and [environmental tobacco smoke] (ETS) in pre-school age children."<sup>53</sup>

Problems with the construction of homes have also been a contributing factor to children's poor health. Beginning in 2000, mold problems in homes started to rise across the country as many homeowners were finding out that their homes were not managing moisture properly. Due to construction materials that are more prone to water damage and practices of sealing homes up tighter in the last twenty years, there has been a growing nationwide problem with water damage in homes, which has been contributing to health problems.<sup>54</sup> Another contributing factor that has been linked to an increase in asthma is a lack of exposure to germs. Recent findings in *The New England Journal of Medicine* suggest that because of advances in plumbing, modern medicines, and sanitation, young children are now living in more sterile

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<sup>52</sup> Brigid Schulte, "The Search for Solutions," *Washington Post*, May 22, 2008.

<sup>53</sup> Felicia Wu and Tim K. Takaro, "Childhood Asthma and Environmental Interventions," *Environmental Health Perspectives* 115, no. 6 (June 2007): 971.

<sup>54</sup> Donna Halvorsen, Karen Youso, and Jim Buchta, "Owners of Newer Homes Face Water Damage Risk," *Star Tribune*, June 18, 2000.

environments and not being exposed to infections early in life, which help to build-up their immune systems.<sup>55</sup>

Unfortunately, airborne contaminants and structural changes are not the only risk factors present in many American homes. Parental stress has now been linked to an increased risk of asthma in children. In a study conducted by Ketan Shankardass, et al., parents were asked a series of questions with regards to smoking during their pregnancies, their education, as well as their stress levels. Following a three year study of children in these households, it was discovered that households that had high parental stress levels also had increased rates of exposure to traffic-related pollution (TRP) and/or tobacco smoke. As a result, children in these stressful environments were more prone to developing asthma.<sup>56</sup>

Staying indoors has its own risks, but in the future, America's problems may run even deeper. If kids do not participate in outdoor programs and learn to appreciate the environment, they may be unwilling to fight the battles necessary to protect it. Thirty years from now, will these same individuals be willing to fight against efforts to commercialize national parks, forests, and lands set aside for future generations? Only time will tell, but with an obesity rate approaching two-thirds of all Americans, fewer and fewer are in shape to experience the great outdoors set aside for them by previous generations.

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<sup>55</sup> Denise Grady, "Environment Rich in Germs May Reduce Risk of Asthma," *New York Times*, September 19, 2002.

<sup>56</sup> Ketan Shankardass et al., "Parental Stress Increases the Effect of Traffic-Related Air Pollution on Childhood Asthma Incidence," *Proceedings of the National Academy of Sciences of the United States of America* 106, no. 30 (July 2009): 12406.

# Solutions

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After reviewing the current research on childhood participation in outdoor activities, two significant conclusions can be drawn. First, studies have proven that exposure to the outdoors does have beneficial effects on the mental health of children. Secondly, the decline in outdoor activities has led to an increase in obesity and other health concerns among American children. To preserve the health of the US population and achieve the goals once set for environmental education, children need to experience the outdoors in an up close and personal way.

While it may not be possible to change the long-term trends in American culture, there is hope. As the study comparing outdoor experiences among different ethnic groups demonstrated, once a child is exposed to the outdoors, the wide differences in participation rates amongst different ethnic groups disappear. Moreover, once children are engaged in these programs, their participation endures long after the initial experience. Whether it is called learned behavior or simply an appreciation for the outdoors, it now appears irrefutable that outdoor activities are a healthy and a necessary part of raising healthy children. "We are living not as our genes intended. It's not normal to play video games all day," said Eric Hoffman, director of the Center for Genetic Medical Research at Children's Hospital. "We have taught our children how to kill themselves. We have to reverse that."<sup>57</sup>

So how can the outdoor experience be re-introduced back into normal childhood development? Answering this question will require creativity and a multifaceted approach. Today, the best programs available are still in their infancy. Most appear to fall into two camps—those that fit under solving the obesity problem, and those that address getting children

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<sup>57</sup> Brigid Schulte, "The Search for Solutions." *Washington Post*, May 22, 2008.

more involved outdoors. Obesity in children may be the most visible symptom of declining outdoor involvement. On the other hand, the impact on mental development may be just as important; but in finding solutions, it will be harder to measure. It is uncertain which, if any, of these programs will succeed. Here are some of the more promising programs available today.

The Alliance for a Healthier Generation is one such program. With obesity rates reaching levels never before seen in the US, the future health of the nation's children lies in educating them about living healthy lifestyles. Through several new initiatives and programs, the Alliance for a Healthier Generation is working to improve the lives of children. One of these programs is their empowerME campaign, which has been designed to encourage children to take control of their health and activity levels and to live healthy lifestyles.<sup>58</sup> Working with schools and administrators, their Healthy School Program is now working on empowering students, staff, and parents to bring healthier food alternatives into schools.<sup>59</sup> Through these and other efforts, the Alliance works with other child-focused organizations to reach more than 2.1 million children and teenagers.<sup>60</sup>

There are several strengths that the Alliance has over other programs when it comes to influencing change. The first is that it is run in part by a foundation one the former Presidents of the United States set up—Bill Clinton.<sup>61</sup> Being associated with a public figure also helps give the Alliance a better marketing image. The second strength the Alliance has is that it already has an established communication channel – the school systems –which they can use to disseminate

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<sup>58</sup> Alliance for a Healthier Generation, "What is the empowerME Movement?," Alliance for a Healthier Generation, <http://www.healthiergeneration.org/teens.aspx?id=2566> (accessed October 29, 2009).

<sup>59</sup> Ibid., "Our Programs," Alliance for a Healthier Generation, <http://www.healthiergeneration.org/about.aspx?id=3437> (accessed October 29, 2009).

<sup>60</sup> Ibid., "More Than 2 Million Tweens and Teens Commit to Taking Charge," Alliance for a Healthier Generation, <http://www.healthiergeneration.org/media.aspx?id=4100> (accessed October 29, 2009).

<sup>61</sup> Ibid., "About The Alliance," 2009, <http://www.healthiergeneration.org/about.aspx> (accessed October 29, 2009).

their information. By having financial support from the William J. Clinton Foundation, the Alliance has an established means of funding their efforts with child-focused organizations and has really established itself as an advocate in the fight to get children and teenagers to take control of their health.<sup>62</sup> Unfortunately, the one weakness that the Alliance has is that it is depending on inputs such as children's diets and the choices they make to inspire change. The problem America is facing is not strictly an eating disorder, but rather a declining level of physical activity. And while their foundation funding may be present now, it remains to be seen whether it will be present in the future.

Another solution is attempting to connect classrooms more closely with their communities. David Sobel—the Director of Teacher Certification Programs in the Education Department at Antioch New England Graduate School, and co-director of the Community-based School Environmental Education (CO-SEED) program, has worked with schools in New Hampshire and New England to integrate such a program. As a method of teaching:

Place-based education is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens.<sup>63</sup>

In order to move towards a place-based educational system, there are several possible strategies that can be used to get both the schools and the communities on board. While a growing number of college campuses have now hired Sustainability Coordinators, their presence

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<sup>62</sup> Alliance for a Healthier Generation, "About The Alliance," 2009, <http://www.healthiergeneration.org/about.aspx> (accessed October 29, 2009).

<sup>63</sup> David Sobel, *Place-Based Education: Connecting Classrooms and Communities*, (Great Barrington: Orion Society, 2005), 7.

in the K-12 public education system is almost non-existent. One strategy is putting an Environmental Educator in every school.<sup>64</sup> Not only could Environmental Educators act as a resource for the student body, the faculty, and the community, they could also help to coordinate activities outdoors for these respective groups. These individuals would also be knowledgeable in the science and history of the surrounding area and assist teachers in developing lesson plans that integrate the environment.<sup>65</sup> Using the surrounding area in communities as a basis for learning about biodiversity, teachers would become less dependent on textbooks as a means for teaching new concepts.<sup>66</sup>

At the local level, the potential for change in school systems is much more realistic than a government created program, which can become mired in the bureaucratic process. Place-based education as a means of re-introducing outdoor experiences back into normal childhood development shows great potential. It takes advantage of the natural resources communities have, while educating America's youth about their local environments. However, this educational model will also face a number of obstacles in its implementation process. One of the biggest obstacles is funding. In the current economy, many school districts have seen shortfalls in federal, state, and local funding. The repercussions of this have been wide spread and include staff reductions and the elimination of programs. With many schools trying to focus on making sure they are meeting the state's curriculum requirements, making the transition to an environmentally engaged system may prove difficult. With a school's reputation on the line and parents concerned with standardized test scores, implementing an environmental education

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<sup>64</sup> David Sobel, *Place-Based Education: Connecting Classrooms and Communities*, (Great Barrington: Orion Society, 2005), 53.

<sup>65</sup> *Ibid.*, 54.

<sup>66</sup> *Ibid.*, 6.

requirement and hiring environmental educators will be highly dependent on the willingness of communities to participate.

While the programs above offer several strategies for getting kids connected with their bodies and their environment, there is one key component that they do not address—fighting the apathy that has taken hold of many American’s lives. It is clearly apparent that kids are becoming obese from a lack of opportunities to be physically active, poor food choices, and other unhealthy lifestyle choices. It is also apparent that kids are spending less time outdoors due to parental anxiety and the proliferation of technology within the American home. In sum, children have become conditioned to “sitting in the chair.” In fact, American lifestyles have evolved to the point where there is no longer a need to “get out of the chair.” Now, nearly everything can be brought to you –whether it is through the TV or the Internet, or even through home delivery. In this digital age, it is no longer necessary to “get out of the chair” in order to function as a member of society.

### *Reaching Children Where They Live*

While people cannot be forced to “get out of the chair,” they can be influenced through the information highways that have become a centerpiece in their life. As anti-smoking campaigns have demonstrated, education and awareness can change public behavior and social acceptance. One fact has become quite clear in the past decade—the new avenues of mass communication are not going to go away any time soon. Herein lies a novel solution to the outdoor dilemma.

In order to reach the kids that are the target audience, any solution must embrace them where they live today – on the Internet. It would require using a nationwide public relations

campaign with the top social networking sites and search engines that are currently being used by kids and adults alike. These would include companies like Google, Bing, Facebook, MySpace, and Twitter. With tens of millions of users, these companies have the power to influence a large number of children and young adults with little effort. The goal of the PR campaign would be to publicize the need and importance of getting outside, getting exercise, and staying fit. Much like the Play 60 campaign that the National Football League is currently running to get children more physically active, to be successful, this campaign needs to be aimed at getting the young and old to not just read about the environment, but to embrace it, participate in it, and protect it. When considering who sponsors this campaign, it is important to consider individuals and companies that have highly influenced the current Echo generation. One company that fits this profile is Apple. Not only is much of their customer base very young and tech-oriented, but they also are very responsive and easily influenced by the decisions made by Apple. The campaign could operate as a non-profit charity with financial support from Apple and public service announcements distributed by the other partners. This would give it the advantage of being separate from Apple's main business, but close enough where it is still recognized by today's youth. It would also give Apple the chance to add to their image of being a customer-oriented company that is concerned for the well being of their customers, while at the same time investing in their future.

This campaign would likely cost millions of dollars and require cooperation from these large corporations. However, if this is compared to what it would cost to put Environmental Educators in every classroom and to transition towards a more environmentally based curricula—which would likely cost billions of dollars of taxpayer money, the potential payoff

could be much greater. In addition, the organizations involved have a vested interest in the health and well being of their customers.

So, how would success be measured in a campaign like this? While the results would be difficult to gauge, the goal would be that solely by the power of influence—both from the campaign and from social networking sites—children would be sensitized to the physical and mental benefits of playing outdoors. Most importantly, this program has the power to make children think about what they are missing by not being outdoors. Using low cost web sites, children could be directed to outdoor activities and recreational areas near them. Traffic to these sites would be one indication of the program's success. Content for such sites is already available from most state tourism bureaus. Local schools could provide additional content, perhaps on the school web site. Like Earth Day in the 1970's, this campaign needs to create a sea of change in the decisions parents and children make about their daily activities.

Given the current economic situation, funding for any program may be limited. The one advantage this approach has is its low cost basis. With the preponderance of free viral networks on the Internet, a carefully crafted message could be quickly disseminated both in the U.S. and overseas. That message needs to be broadly delivered. Today's children have been conditioned by their parents not to go outside and play. In extreme conditions, children may not even be aware of the opportunities outside of their urban area or in other school systems. In the end, the power of suggestion may prove to be more effective in motivating children to get outside and play than any paid instructor, teacher, or textbook. The beauty of this approach – both figuratively and literally – is that an assortment of outdoor promotional messages could be used to educate children on the opportunities in their area, as well as the benefits of participating.

Raising healthy kids is essential if America is going to avoid the financial catastrophe of caring for an unfit generation. Today's children are simply not going outside like they used to—which has contributed to a sharp increase in obesity and missed opportunities for children to develop their brains properly. While no one solution is going to get children outdoors more, the power of persuasion through the social networking sites and search engines may be the most effective way of providing an awareness of the benefits the outdoors can have.

In losing touch with the outdoors, today's kids are not only losing their ability to relate to outdoor environments, but also the chance to develop vital life skills. By using their imagination, children's intuitive sense of wonder can serve as a catalyst for life-long learning.<sup>67</sup> Unfortunately, “we are involved now in a profound failure of imagination. Most of us cannot imagine the wheat beyond the bread, or the farmer beyond the wheat, or the farm beyond the farmer, or the history beyond the farm.”<sup>68</sup> A child's affinity for nature is something that only experience can bring. It is imperative that the issues addressed in this paper be taken seriously; if not, future generations that may wish to participate in the outdoors may find that the recreational resources we have today are simply no longer available.

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<sup>67</sup> Randy White and Vicki Stoecklin, "Children's Outdoor Play Environments: Returning to Nature," *White Hutchinson Leisure & Learning Group*. November 8, 2008.  
<http://www.whitehutchinson.com/children/articles/outdoor.shtml> (accessed December 6, 2009).

<sup>68</sup> Wendell Berry, *In the Presence of Fear: Three Essays for a Changed World*, (Great Barrington: Orion Society, 2001), 40, quoted in David Sobel, *Place-Based Education: Connecting Classrooms and Communities*, (Great Barrington: Orion Society, 2005), i.

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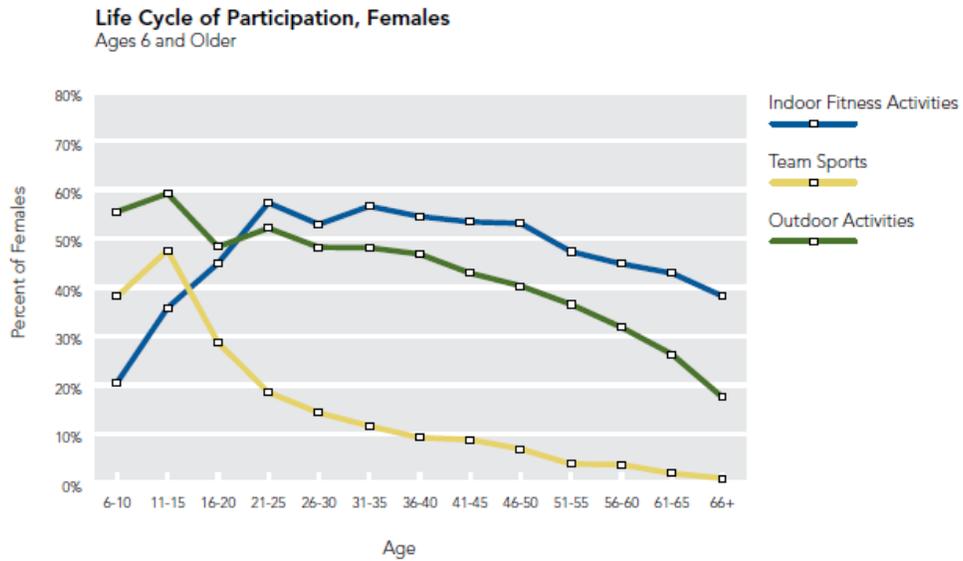
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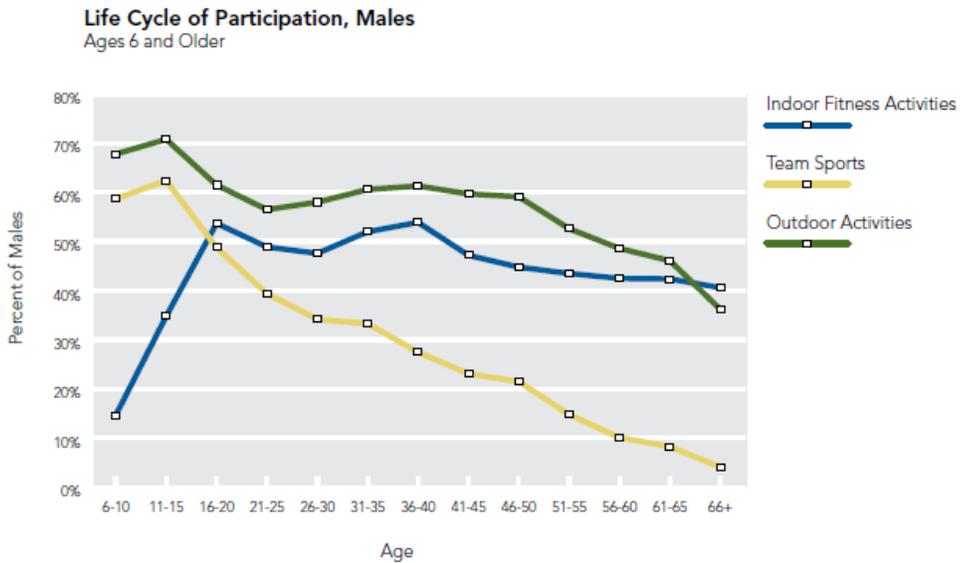
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# Appendix A



**Graph of life cycle participation among females<sup>69</sup>**



**Graph of life cycle participation among males<sup>70</sup>**

<sup>69</sup> The Outdoor Foundation, *Outdoor Recreation Participation Report, 2009*, (The Outdoor Foundation, February 2009), 15.

<sup>70</sup> Ibid.