

AN EXAMINATION OF THE ROLE FOR
LANDSCAPE ARCHITECTS IN THE
NO CHILD LEFT INSIDE
MOVEMENT

by

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ABSTRACT

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The disconnection, or lack of interaction and experience, between children and nature has been coined Nature Deficit Disorder and popularized by Louv (Louv 2005, pp. 139-140). Current research and writing regarding the child and nature disconnect has spawned the No Child Left Inside movement. This movement is an initiative being adopted by cities, states, federal agencies and other organizations committed to reconnecting children with nature by providing a wide range of opportunities to

experience nature directly, while building the next generation of environmentally conscious citizens.

This research examines how landscape architecture is viewed by those associated with Children and Nature Network (C&NN), the primary organization formed to encourage and support other organizations that are active in this movement. Leaders of this organization include published authors, educators, entrepreneurs, researchers, academics, youth leaders, and business and organizational leaders. Through C&NN, these professionals are the leading proponents of the No Child Left Inside movement. While some of the research and literature mentions specific areas such as open space planning, park design, school design, and playground design; the landscape architect is not recognized as a central figure in the movement to reconnect children and nature.

The hypothesis of this research is that the field of landscape architecture is uniquely qualified and positioned to address this topic through open space frameworks, urban planning, urban design, park design, schoolyard design, residential design, and children's gardens. In this study, open-ended interviews of researchers, authors, and supporters associated with C&NN are used to identify the perceptions of the role that landscape architects play in reconnecting nature and children. These selected professionals share their perceptions based on their knowledge and experience in this area. The findings show that there is much opportunity for landscape architects to influence the realization of nature and children reconnected.

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CHAPTER 1

INTRODUCTION

“Healing the broken bond between our young and nature is in our self-interest, not only because aesthetics or justice demand it, but also because our mental, physical, and spiritual health depend upon it.”
Richard Louv

Current research indicates the existence of a direct link between nature and the physical, intellectual, emotional, social and spiritual development of children (Clayton and Opatow 2003; Kahn 2002; Kellert 2002; Louv 2005; Taylor, Kuo, and Sullivan 2001). As children become adults, their interactions with nature as children have substantial impact on their attitudes toward the environment and environmental issues (Chawla 2006; Kals and Ittner 2003; Louv 2005; Pyle 2002; Sobel 1996, 2008; Thompson, Aspinall, and Montarzino 2008; Wells and Lekies 2006). Most research on this topic has focused on childhood development, education and learning, community programs, and parental issues. Lacking in the current research and writings is a focus on the field of landscape architecture as a critical component in the reconnection of children and nature through designed spaces, urban planning and design, community master planning, and other roles commonly performed by landscape architects.

The research and writing regarding the child and nature disconnect has spawned the No Child Left Inside movement (Children and Nature Network). This movement is an initiative being adopted by cities, states, federal agencies and other organizations committed to reconnecting children with nature and building the next generation of environmentally conscious citizens. This study examines the role of the landscape architect in the burgeoning No Child Left Inside movement.

1.1 The Issue

The human costs of changes in lifestyle, urbanization and changes in children's play environments are measurable. Two emerging trends are the decline of children's health and an increasing disconnect between children and the outdoors. Regarding current health conditions of children, The Conservation Fund (2009) reports that:

- More than a third of American children and adolescents—17 million—are obese or at risk for obesity. Half of overweight children remain overweight as adults.
- 60% of obese children ages 5 to 10 already have at least one risk factor for heart disease.
- The number of kids living with a chronic disease has more than quadrupled since 1960, from 1.8% to nearly 8%.
- The number of Americans diagnosed with diabetes, including children, has risen at an alarming rate over the past 50 years, from 1.5 million to 17.9 million.

They also report that children are also increasingly separated from the outdoors:

- In 1969, 50% of U.S. children walked or biked to school. In 2004, less than 13% did.
- The area in which children are free to roam has shrunk by 89% in the past 20 years.
- After 50 years of steady increases, per capita visits to U.S. national parks declined by 25% from 1987 to 2003.
- Nature-based recreation as a whole has been declining every year since the 1980s, for a total decline of roughly 25%.

Orr (2002) reports regarding children:

- nationwide, seventeen percent of children are on Ritalin
- twenty-five percent of children under the age of 19 are overweight or obese
- time outside for children ages 3 to 12 has dropped from an average of eighty-six minutes per day in 1981 to forty-two minutes per day in 1997

There is mounting evidence which suggests that these two trends—the decline in children’s health and their disconnection from the outdoors—are linked. Recognizing the link and acting is critical for the health and welfare of children.

Research has established the importance of the human-nature connection (Kaplan and Kaplan 1989) and has been expanded to include the benefits for children specifically. Kellert (2005) states “... human physical and mental well-being inextricably depends on the quality (if not the quantity) of people’s experience of the natural environment and that

this dependence remains critical in our modern, increasingly urban world” (Kellert 2005, p. 63). This research uses the term ‘connection’ to describe the cumulative effect of these experiences and interactions that occur during a person’s lifetime. Childhood is the time when these experiences first occur and is the most critical time due to their affect on a child’s development. Knowledge and understanding are built through interaction with the physical and social environment (Kahn 2002).

Adults frequently cite the outdoors during middle childhood as one of the most significant settings of their childhood (Chawla 2006). Adults who do not spend time in nature as children are much less likely to be environmentally conscious and are not advocates for environmental issues. Chawla (2006) found that the two most frequent motives for active environmentalists were: (1) positive experiences in natural areas during childhood and adolescence; and, (2) family role models (Chawla 2006). The lack of support from those who do not have nature experiences as children will endanger our land, water and wildlife resources in the future (Chawla 2006; Louv 2005).

1.2 Nature-deficit Disorder

Nature-deficit disorder is the term coined by Louv (2005) to broadly address the lack of human-nature experiences, and the resultant human costs associated with it. The dearth of interactions with nature is thought to contribute to attention disorders among children (Burdette and Whitaker 2005; Kellert 2002; Louv 2005). While, the term is neither scientific nor clinical, it is proposed by Louv to describe the concept of children

spending less time outdoors and the suggested connection between this trend and behavioral problems.

Kellert (2002) writes, “We require a radical shift in the ways we design and construct our homes, schools, recreational facilities, open spaces, and communities that deliberately seeks to incorporate all values of nature as an essential core of children’s lives” (Kellert 2002, p. 147). The creation of environments for children to connect with nature is important to their healthy development. As Laris (2005) states, “Most important is to create diverse landscapes for children that are made up of spaces designed in proportion to a child’s own size and development stage, spaces that are safe and inviting, spaces where all children can take part, spaces that inspire invention and wonder” (Laris 2005, p. 29). Moore and Cooper Marcus (2008) observe that as the opportunities for children to connect with nature decrease, especially in urban settings, the opportunities for children to explore nature must be created (Moore and Cooper Marcus 2008, p. 154).

1.3 Research Objectives

The primary objective of this study is to examine the current perspective of how landscape architecture is perceived by leaders of Children and Nature Network (C&NN), the primary organization formed to encourage and support other organizations of the No Child Left Inside movement. A second objective is to describe from the literature the link between nature and childhood development and how experiences in nature affect children. A third objective is to describe the results of a disconnection between children and nature. This disconnection between children and nature has been coined Nature

Deficit Disorder and popularized by Louv (2005), spawning the No Child Left Inside movement.

The fourth objective is to describe the implications and opportunities for landscape architects in the movement to reconnect children and nature. Through literature review and qualitative research analysis, a view has emerged of the roles for the landscape architect in this movement.

1.4 Research Questions

The primary questions addressed by this study, and the central issues of concern for the profession of landscape architecture are:

- What developmental, physical and future benefits does interaction with the landscape provide for children?
- Is there a role for the landscape architect in reconnecting children and nature?
- If the landscape architect does have a role in this effort, what is that role in reconnecting children and nature?
- Are there specific types of projects or initiatives where landscape architects should focus their efforts such as children's gardens, schoolyards, outdoor classrooms, parks and playground design, city master plans, and open space plans?

1.5 Definition of Terms

The following definitions give background information on subjects that are not defined within the body of the text.

Affective learning: the process by which knowledge is gained from understanding how something impacts, impresses or influences a person emotionally (Kellert 2005).

Child: every human being below the age of eighteen years, unless applicable laws state otherwise.

Children's garden: a designed and planned space for children to interact with nature.

Cognitive learning: an intellectual process by which knowledge is gained from perception or ideas; the formation of thinking and problem-solving skills (Kellert 2005).

Connection: the relationship between natural systems and human physical and mental well-being; the cumulative experience of interactions with nonhuman environments (Kellert 2005).

Evaluative learning: the process by which values, beliefs, and moral perspectives are formed.

Nature: natural systems and processes; the world and its naturally occurring phenomena, together with all of the physical laws that govern them; living organisms and their environments.

Pattern: used to suggest a relationship between aspects of the environment and how people experience or react to them (Kaplan, Kaplan, and Ryan 1998).

Playground: a piece of ground for and usually having special features for recreation, especially by children.

Public domain: shops, restaurants, airports, railway stations and other public areas which are distinct from the private territory of the family, the home, the motor car or dedicated institutions for children such as a school or daycare center (Penn 2005).

Restorative environments: a natural environment that provides a setting for restorative experiences from the fatigue created by processing information (Kaplan 1995).

1.6 Summary

The general health of children is declining at the same time that their level of disconnection from nature is increasing. Research shows that the two trends are interrelated and will impact the health and attitudes of children as they become adults. The design of spaces where children spend their time is one critical aspect of addressing this issue. As designers of outdoor space, landscape architects have a role to play in this movement.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

There is a fundamental relationship between contact with nature and healthy development of children. Second, children make connections with specific spaces or places in nature and also show a preference for nature. Third, interactions with nature affect attitudes toward environmental issues and are one of the primary indicators of the environmental sensitivity of children as they become adults.

2.2 Literature Subjects Reviewed

A definable connection exists between exposure to nature and childhood development (Churchman 2003; Johnson and Hurley 2002; Kellert 2002, 2005; Louv 2005; Nabhan and Trimble 1994; Pyle 2002; Rivkin 1997; Thomashow 2002; Wells 2000; Wells and Lekies 2006; White 2004). However, there is limited documentation that references the field of landscape architecture and the child-nature connection (Louv 2005; Moore and Cooper Marcus 2008; Tai et al. 2006). There are also few references that address design issues for outdoor spaces which provide an environment for children

to experience nature (Casey 2007; Chiles 2005; Herrington 2005; Hodge 2004; Johnson and Hurley 2002; Kellert 2005; Laris 2005; Rivkin 1997; Stine 1997; Tai et al. 2006).

Numerous sources were found which examine the role of nature in the treatment of attention disorders in children (Burdette and Whitaker 2005; Louv 2005; Taylor, Kuo, and Sullivan 2001; Wells 2000). Taylor, Kuo and Sullivan (2001) found that children function better after participating in activities that take place in green settings. They also found that the “greener” a child’s play area, the less severe his or her attention deficit symptoms (Taylor, Kuo, and Sullivan 2001). Attention is an integral part of learning and has been linked to physical activity, physically active children are better able to learn and are better behaved in the classroom (Burdette and Whitaker 2005). However, no sources were found which address the design of space for children with attention disorder.

The cognitive and psychological benefits of natural environment experiences are the topic of several sources (Kaplan and Kaplan 1989; Kaplan, Kaplan, and Ryan 1998; Kaplan 1995; Louv 2005) and have been expanded to include the benefits for children specifically (Kellert 2005; Louv 2005; Rivkin 1997). Kellert (2005) demonstrates that the quality of children’s experiences with nature affects children’s physical and mental well-being and that classifying children’s experiences with nature can be predictive in evaluating the benefit of those experiences (Kellert 2005).

Kaplan and Kaplan (2002), Nabhan and Trimble (1994), and Wells and Lekies (2006) extend the work of Kaplan and Kaplan (1989) to show the demonstration of children’s preference for nature. Further extensions of the work of Kaplan and Kaplan apply to the geography of childhood and the connections children make to specific places

in nature (Churchman 2003; Gebhard, Nevers, and Billmann-Mahecha 2003; Kellert 2005; Louv 2005; Nabhan and Trimble 1994; Pyle 2002; Rivkin 1997; Thomashow 2002).

Further research revealed several sources that linked nature experiences with children's level of environmental consciousness as adults and showed that the richer a child's experiences are with nature, the more likely that child will become an adult who is environmentally sensitive (Chawla 2006; Gebhard, Nevers, and Billmann-Mahecha 2003; Kals and Ittner 2003; Louv 2005; Rivkin 1997; Sobel 2008; Thompson, Aspinall, and Montarzino 2008; Wells and Lekies 2006).

The following table illustrates the results of keyword searches. The data represent the relative ratios of individual subject coverage versus linked subject coverage.

Table 2-1 Literature Search, Number of Entries UTA Libraries

Keyword, subject or Title	Number of Entries	Keyword, subject or Title	Number of Entries
Children and Nature	241	Children and Design	181
Nature and Design	354	Children and Landscape Architecture	3
Children and Park Design	1	Park Design	391
Children and Parks	23	Children and Landscape	42
Landscape Architecture and Parks	59	Outdoor Learning	21
Outdoor Learning and Design	7	Education and Nature	406
Children and Open Space	2	Design and Open Space	39
Children and Outdoor Play	12	Design and Outdoor Play	5
Outdoor and Classroom	10	Neighborhood and Nature	17
Neighborhood and Design	48	Urban Design	836
Urban Design and Children	6	Urban Design and Parks	26
Urban Design and Nature	28	Green Space	120
Green Space and Children	3	Behavior and Nature	307
Behavior and Landscape	39	Behavior and Environment	413
Preschool and Nature	12	Kindergarten and Nature	4
Nature and Deficit and Disorder	5	Children and Garden	37
Children and Garden and Design	2		

Analysis of Table 2-1 indicates a higher level of interest in the relationship between children and nature than in the design of places where children and nature interact. Interest in the individual topics of design, children, and nature are high, yet there are far fewer works related to the connections between these subjects. This lack of attention points to a need for further examination of the relationship between children, nature and landscape architecture.

2.3 The Child-Nature Connection

Nature experiences have positive effects on cognitive, affective and evaluative learning in childhood development (Kellert 2002). These experiences can be linked to healthy development and classification of the experiences can also be predictive in determining the effect of the experiences (Kellert 2002; Pyle 2002). Nature experiences also have a positive effect on physical health and stimulate creativity (Louv 2005). These experiences are vitally important to the healthy development of children.

Evaluating the child-nature connection requires a definition of the types of interactions that children can have with nature. Kellert (2002) classifies children's contact with nature into one of three classifications: direct; indirect; and, symbolic. These classifications are useful for evaluating the type of interaction which then can be used to evaluate the effectiveness of the interaction.

Direct experience involves physical contact with natural systems and processes and includes contact with animals and other nonhuman species. This classification is restricted to contact that occurs outside of the built environment. It includes non-

programmed activities such as backyard play, exploration of forest or activities in an abandoned lot. The primary determinant for this classification is that the animals and habitats involved are functioning independently of human control (Kellert 2002).

Indirect experience involves physical contact with nature that takes place in a more programmed or managed environment. Examples would include zoos, aquariums, botanical gardens and nature centers. Indirect experience with nature also includes interactions with household pets and cultivated landscapes. The primary determinant for this classification is that the environments depend on human intervention and control for their existence (Kellert 2002).

Symbolic experience occurs when there is no actual physical contact with the natural world. These experiences are vicarious interactions through the use of representations using media to convey a scene of nature. Books, magazines, television, computers and other media are used to deliver images of nature for children to view. The primary determinant for this classification is that there are images of nature conveyed but there is no actual physical contact (Kellert 2002).

These three classifications of nature experiences can be positively linked to cognitive, affective and evaluative modes of learning in childhood development, especially during middle childhood and early adolescence (Kellert 2002). However, adolescents actually show a lower preference for nature than those younger or older indicating a “time out” period during the teen years when there is less preference for nature (Kaplan and Kaplan 2002). A child’s healthy development is inextricably linked to their youthful experiences with nature and classification of those experiences can be

used to predict the effect of the experiences on the child's development (Kaplan and Kaplan 2002; Pyle 2002).

Of the three classifications, direct experiences have a greater affect on childhood development, while symbolic experiences have the least effect (Kellert 2002). Direct experience also has largest effect on the cognitive, affective and evaluative modes of development (Kellert 2002; Pyle 2002). Indirect experiences are shown to have some positive effect but not to the extent of direct experiences (Kellert 2002; Pyle 2002).

2.4 Children and Nature Disconnected

The disconnection, or lack of experiences and interactions between children and their natural environment, has many contributing factors. Some of the factors include: urban sprawl; suburban life; fear; and, commercialization of play.

Exploration of the environment is an integral part of childhood development but urban sprawl and suburban life combine to offer fewer opportunities for children to roam and explore their environment (Churchman 2003; Frumkin, Frank, and Jackson 2004; Penn 2005; Rivkin 1997; White 2004). Fear of crime and traffic, physical layout of communities, and lack of destinations are all factors in the reduction of exploration opportunities for children (Frumkin, Frank, and Jackson 2004). Cities are not adequately planned for independent navigation by children (Churchman 2003). Opportunities for exploration are affected by the focus of the new public domain on commercial enterprise. A public space that is focused on commercial activities also has implications for children: they have limited access; they are subject to constant surveillance; and, they are viewed

as a potential menace (Penn 2005). At the same time, children in the public domain are viewed as being vulnerable and exposed to danger through accidents and abduction by strangers (Louv 2005; Penn 2005).

The single biggest factor that separates children from meaningful interaction with nature is fear (Louv 2005). Louv (2005) writes “Fear is the emotion that separates a developing child from the full, *essential* benefits of nature. Fear of traffic, of crime, of stranger danger—and of nature itself” (Louv 2005, p. 123). Automobile traffic has reduced the area that children are allowed to explore (Churchman 2003; Rivkin 1997). Fear of abductions by sexual predators and fear of random attacks by criminals prevents parents from allowing children to explore their environment (Louv 2005). Parents and children are also beginning to view nature itself with fear. Their fear of attacks by criminals or animals in parks and other natural settings is fueled by media news reports and movies (Louv 2005). These fears drive parents to restrict outdoor play and cause children to fear being alone in nature.

Urban sprawl affects all of human life but has had a disproportionate effect on children (Churchman 2003; Frumkin, Frank, and Jackson 2004; Rivkin 1997). Impacts of automobile dominated sprawl include air pollution and physical inactivity, as well as threats to mental health and social capital (Frumkin, Frank, and Jackson 2004). The concentration of air pollutants in urban spaces creates health problems for children in the form of asthma, respiratory irritation and impaired lung growth (Frumkin, Frank, and Jackson 2004; Rivkin 1997). Sprawl limits physical activity in children as it reduces their opportunities to walk and bike. This reduction in activity leads to obesity and

lowered self-esteem (Frumkin, Frank, and Jackson 2004). Sprawl alone does not account for all of the inactivity and obesity issues that children today are facing, but it is an important factor that cannot be overlooked (Frumkin, Frank, and Jackson 2004).

Public play spaces are increasingly commercialized and oriented more toward organized sports versus space for free or self directed play (Louv 2005). Children spend more time in organized sports and the demand for athletic fields is increasing while parks development and spending is decreasing (Louv 2005; Rivkin 1997; White 2004). Park designers are less focused on nature play and unstructured play opportunities and more attune to liability issues and the demand for playing fields to support organized sports (Louv 2005). Parks are over-designed and manicured while the natural areas where children can roam and explore are disappearing (Louv 2005).

These factors all combine to create an environment where children have fewer and fewer opportunities for interacting with their natural environment. This lack of interaction, or disconnection, between children and nature, deprives children of the positive effects that result from a connection with nature. The positive effects apply to cognitive, affective and evaluative learning in childhood development, as well as the positive effects on physical development.

2.5 Children and Play

The right to play is included in Article 31 of the United Nations Convention on the Rights of the Child which states:

1. Parties recognize the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts (UNICEF).

2. Parties shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity (UNICEF).

This article was included in the Rights of the Child because of the unique benefits to children that are offered by play. Play allows children to: develop their own sense of identity; develop a connection to their community; learn to develop social relationships; make contact with nature; and, improve physical health through physical activity (Casey 2007).

Herrington (2005) reports on a study done at the Child Development Laboratory at Iowa State University to measure the affects of designed landscape features on the developmental milestones of children, ages two through six. The researchers found that play equipment did contribute to physical development of the children as they observed the progression of physical competence being gained by the children using the equipment. They also found that the social hierarchy within the group was determined by skill and capability on the play equipment. Simple landscape elements were then added to the play areas and researchers found that the addition of the landscape elements encouraged different types of development. The creation of a vegetative room inspired fantasy play and changed the social hierarchy of the class. Creativity and inventiveness

were valued higher than physical prowess and was linked to the cognitive and emotional development of the children. The researchers concluded that the design of outdoor play should match the development goals of the children's programs (Herrington 2005).

Children frequently decide how they want to use objects for play regardless of how the designer intended them to be used (Laris 2005). The castle transforms into a pirate ship, a tree becomes a castle and a cardboard box becomes a fort. Laris (2005) refers to children as "creative inventors" and the designers as "translators". Designers take a creative idea; translate it into a tangible form using materials, colors and textures, which can then be used freely and inventively by the child (Laris 2005, pp. 16-17). This process must be iterative as the designer watches children at play and sees opportunities for new forms and play items to be developed.

Sobel (2008) proposes that there are seven fundamental play activities when children have the opportunity to connect with nature. The seven motifs are: making forts and special places; playing hunting and gathering games; shaping small worlds; developing friendship with animals; creating adventures; descending into fantasies; and, following paths and figuring out shortcuts (Sobel 2008). He concludes that these activity types can be translated into design principles for environmental education.

2.6 Children and Place

Tuan (1990, p. 4) describes topophilia as "the affective bond between people and place or setting." This affinity toward the natural environment should be accounted for when considering environmental issues (Tuan 1990). The concept of topophilia also

applies to the child-nature connection as research shows that children form a bond with places from their childhood (Louv 2005; Pyle 2002; Thomashow 2002).

Gebhard, Nevers, and Billmann-Mahecha (2003) discuss the phenomenon of anthropomorphism as it relates to identity and the natural environment. Through anthropomorphic interpretation, objects in nature are thought to be humanlike and similar to oneself. This interpretation creates an environment where the identity of the object and the observer can form. This type of reasoning is observed frequently in children up until their teenage years and represents an opportunity for children to develop environmentally favorable behavior and attitudes (Gebhard, Nevers, and Billmann-Mahecha 2003).

Thomashow (2002) writes, "...nature can—and I think must—play a key role in the healthy development of adolescent identity." Adolescents frequently use nature as a metaphor when discussing personal growth and transformations (Thomashow 2002, p. 263). For example, Thomashow (2002) describes a scene where teens watch a python shed its skin and they comment on the similarities between the shedding of the skin and their own processes of change. Adolescents frequently refer to a place, either discovered or built, that they love and to which they feel a strong connection. The connection to such a place is so strong that it is viewed by the adolescent as an extension of themselves (Thomashow 2002).

One of the recurring places that adolescents and adults frequently refer to is the 'vacant lot'. The 'vacant lot' is nearby, wild, and full of possibility (Pyle 2002). Subjects report that most of these special places have since been modified and are no

longer substantially intact or accessible. They report that this creates great feelings of loss because the special place of their memory can no longer be visited and experienced (Pyle 2002). Developers plan new suburban developments that occupy what were previously open fields which removes open space and play space from the community (Louv 2005).

There are policy initiatives that could support the child-nature connection in the public domain. Moore (1986) researched children's play and their use of public space and concluded that: children should participate in the planning, design and management of their surroundings; traffic should be controlled to make streets livable; special childhood places should be respected during planning and redevelopment; and, urban parks and greens should be 'roughed up' rather than over-designed and manicured (Moore 1986). These initiatives would contribute to creating a public domain that is more accessible to children.

2.7 Children and Environmentalism

The landscape provides several benefits for children. These benefits are play, nature literacy, and intimacy with nature (Pyle 2002). Children are drawn into nature to play, to act out imaginary adventures, and to collect insects and rocks. Research has shown that nature literacy in children is important for creating a viable ecological future (Chawla 2006; Louv 2005; Pyle 2002; Sobel 2008; Thompson, Aspinall, and Montarzino 2008; Wells and Lekies 2006). Intimacy with natural elements leads to an appreciation and concern for the environment and conservation issues. As children spend less and less

time in nature, they begin to lose intimacy with nature. Pyle (2002) refers to this lack of natural intimacy as the ‘extinction of experience’.

Kals and Ittner (2003) conducted a study to determine which indicators of environmental identity explained children’s commitment to protect the natural environment. They determined that even very young children had clear concepts about nature, its problems and risks, and their ability to address the risks. This capacity, together with positive experiences in nature, promotes nature-protective behavior (Kals and Ittner 2003).

Wells and Lekies (2006) studied urban residents to determine if there is a link between adult attitudes regarding the environment and childhood experiences. They interviewed more than 2000 adults, chosen randomly from more than one hundred urban areas around the country. They found that “... childhood participation in *wild* nature, such as hiking or playing in the woods, camping, and hunting or fishing, as well as participation with *domesticated* nature such as picking flowers or produce, planting trees or seeds, and caring for plants in childhood have a positive relationship to adult environmental attitudes. *Wild nature* participation is also positively associated with environmental behaviors while *domesticated nature* experiences are marginally related to environmental behaviors” (Wells and Lekies 2006).

Sobel (1996) asserts that some symbolic experiences actually have a detrimental effect on children and create a fear of ecological issues, or ecophobia (Sobel 1996). Ecophobia is defined as unreasonable fear of ecological deterioration. Teachers and educators include videos and other media in their curriculum which attempt to ensure that

children will be environmentally conscious citizens when they become adults, but the results may be just the opposite. Children develop a fear of nature and begin to disassociate from it because they lack direct experience with the joy and wonder of the natural world (Louv 2005; Sobel 1996). This disassociation occurs because they are being required to confront issues with such abstract concepts that they do not have the cognitive abilities needed to adequately process the event (White 2004). Examples of environmental concepts that are too abstract and distant for children to grasp include global warming, rainforest destruction, acid rain, ozone holes and animal extinction.

2.8 The Movement to Reconnect Children and Nature

Many private, city, state and federal organizations have created initiatives aimed at reconnecting children and nature. The list of such programs includes, but is not limited to: Chicago Wilderness *Leave No Child Inside*; Connecticut Department of Environmental Protection *No Child Left Inside*; Greater Cincinnati *Leave No Child Inside*; Massachusetts Department of Conservation and Recreation *No Child Left Inside*; New Hampshire Fish and Game Department *Children in Nature*; U.S. Fish and Wildlife Service *Let's Go Outside*; and, Texas Parks and Wildlife Department *Life's Better Outside*. As stated on their respective websites, these initiatives share many common goals: to encourage parents and educators to get children outside and in nature; to educate the community on the benefits of time spent in nature; and, to increase understanding of and care for the natural world (Chicago Wilderness ; Connecticut Department of Environmental Protection ; Leave No Child Inside of Greater Cincinnati ;

Massachusetts Department of Conservation and Recreation ; New Hampshire Fish and Game Department ; Texas Parks and Wildlife Department ; U.S. Fish and Wildlife Service).

Children & Nature Network (C&NN) is an organization which formed to encourage and support the organizations that are active in this movement. As stated on the C&NN website, the network's vision is "to give every child in every community a wide range of opportunities to experience nature directly, reconnecting our children with nature's joys and lessons, its profound physical and mental bounty" (Children and Nature Network). The network is also providing a "critical link between researchers and individuals, educators and organizations dedicated to children's health and well-being." The C&NN network is the hub for news and research by providing a forum for publishing and presenting research, reports and case studies on children's health and nature, and related program-development strategies and support. The Natural Learning Initiative is an organization whose purpose, as stated on their website, is to "promote the importance of the natural environment in the daily experience of all children, through environmental design, action research, education, and dissemination of information". The director of this program is Robin Moore, a professor at North Carolina State University and the program is a Research and Design Assistance Program of the College of Design at North Carolina State University (Natural Learning Initiative).

2.9 Designing for the Child-Nature Connection

Kaplan, Kaplan and Ryan (1998) address design and management opportunities in creating restorative environments by using patterns to prescribe environmental context. The patterns they describe are categorized as: gateways as points of transition from one place to another; trails as opportunity for locomotion; views as opportunities for viewing nature; and, places and their elements as they relate to people's preference for nature. For each category they specify patterns that reduce the psychological costs of environments that conflict with people's need to be comfortable and interested as they move through a given environment. The patterns are not presented as prescriptions that will work in any situation but as guidelines to consider that will make recurring problems less likely (Kaplan, Kaplan, and Ryan 1998).

Kellert (2005) sets forth two primary objectives for designing restorative environments: (1) the reduction of adverse effects on natural systems and human health; and, (2) to promote more positive contact between people and nature in the built environment (Kellert 2005, p. 93). The first objective is called "low environmental impact design" and the second objective is called "biophilic design." The combination of the two objectives will create more positive relationships between nature and people while inflicting less damage on the environment as building and landscapes are built (Kellert 2005).

Stine (1997) proposes that "designers and teachers think about the quality of outdoor school environments as learning places" (Stine 1997, p. xii). She sets forth nine dimensions that can be used to create, assess, and change outdoor play and learning

environments. The dimensions are: accessible and inaccessible; active and passive; challenge/risk and repetition/security; hard and soft; natural and people built; open and closed; permanence and change; private and public; and, simple and complex. Several case studies are presented and the principles are applied to school settings but are not applied to other settings or the community in general.

Casey (2007) describes an approach to creating play environments for children that begins with “building a picture of the play in the area” to properly assess the children and community in which the environment is being considered (Casey 2007, pp. 12-13). Underlying the entire process is an understanding that children should be collaborators and partners during the entire process (Casey 2007).

Tai, McLellan, and Knight (2006) describe a design process for creating a children’s play environment that includes: research; site inventory and analysis; program development; design; construction documentation; cost estimating; and, implementation. They recommend the use of professionals but do not specify the type of professional to use nor what the role of the professional should be. Several case studies are presented which do document the inclusion of a landscape architect on the project team but do not clearly specify the role that the landscape architect played (Tai et al. 2006).

Hodge (2004) and Johnson and Duffek (2008) advocate creating schoolyards that function as outdoor classrooms and wildlife habitats. Using natural, cultural and artistic features, these outdoor classrooms provide the setting for place-based learning and firsthand experiences regarding the environmental issues that affect our lives. They describe a design process that includes: identify participants; write a design program; site

selection; site inventory; site analysis; design synthesis; conceptual design; preliminary design; and, final design. They recommend the use of a licensed landscape architect to create required construction drawings and mention that landscape architects, landscape designers, and artists can play an important role in the process but do not identify the landscape architect as the central figure in the design process (Johnson and Duffek 2008).

Moore and Cooper Marcus (2008) advocate the use of sustainable design and new architectural forms to link urban design and planning to the local ecological context so that it becomes a normal part of everyday life for residents of an area. They encourage the location of child care facilities and kindergartens in very close proximity to open spaces, forests, parks and greenways. They strongly promote community and neighborhood design concepts based on providing children with access to nature on a daily basis. These concepts include: clustered housing with shared outdoor space; cul-de-sacs and greenways; alleys; and, woonerven and home zones. Woonerven is a design concept based on pedestrians and motorists sharing the same paved space with pedestrians having legal priority. Moore and Cooper Marcus (2008) conclude their research with a list of parameters for successfully providing integration of nature in residential areas for children. The researchers include landscape architecture in the list of professions that should be involved in these community and neighborhood design efforts, but do not specify the role that the landscape architect could or should perform (Moore and Cooper Marcus 2008).

2.10 Significance of Topic

The work of Kaplan, Kaplan and Ryan (1998) addressing design of restorative environments is not applied to environments designed or managed for children. Kellert (2005) reviews many attributes and characteristics indicative of design strategies for creating restorative environments but he does not apply the objectives to environments designed for children and play. Stine (1997) presents a framework for outdoor learning spaces, along with several case studies, but the principles are not applied to other settings or the community in general. Casey (2007) proposes an approach to creating play environments but the landscape architect is not recognized as a professional who guides the process from beginning to end. Tai, McLellan, and Knight (2006) propose a process that mirrors the traditional landscape architecture process documented by Simonds (1961) but do not specify the use of a landscape architect when a professional is needed.

Most neighborhoods and parks do not adequately address children's need for unstructured direct experiences with nature. Homeowner association rules governing aesthetics, liability concerns, and public government have restricted children's access to nature. Tree houses are viewed as an unsightly fire hazard, dams might lead to flooding, and playhouses are built without building permits, all leading to an environment where some forms of play have become virtually criminalized (Louv 2005).

Naturalized play environments, advanced by The Natural Learning Initiative, transform the playground designs for preschool and kindergarten settings from "barren areas of grass, asphalt, and wood chips with manufactured equipment into naturalized environments for children's play, exploration, and discovery" (Natural Learning Initiative

; White 2004, p. 5). These environments consist of natural landscape elements and plant materials to provide the setting and the play items and structures. Included in these environments are: water; extensive vegetation of varying sizes and varieties; animals and insects; sand; many colors, textures and materials; different levels; areas for privacy and views; and, moveable elements for imaginative play.

Churchman (2003) states that the important environmental characteristics needed for outdoor play spaces “are to a large extent present in the *streets* of the neighborhood, rather than in the local playgrounds” (Churchman 2003, p. 108). These characteristics include: spaces close to home with entrances used by adults; other children within a walkable radius; easily accessible sites; close proximity to other adult activities; sufficient open space; variety of experiences to accommodate different age groups and activities; loose elements that can be moved; and, safety (Churchman 2003). This research indicates a need for management and planning at a community or city scale affecting density, building types, vehicular traffic patterns, and open space systems.

2.11 Summary

The literature review clearly establishes the importance of the child-nature connection and of the linkage between this connection and healthy child development. The relationship between adult attitudes toward environmental issues and their interactions with nature as children is also clearly defined. This review reveals that there is limited study and research available with a focus on the design of spaces and environments for children to interact with nature. There is also little information

available regarding the planning and design of larger scale environments such as communities and towns in a way that is designed to accommodate children and their need for nature interactions. There are few references to landscape architecture in the literature reviewed and the role of the landscape architect is seldom mentioned. The landscape architect is especially qualified to address this unique mix of small scale site design and larger scale community issues. These observations represent a significant opportunity to promote a deeper understanding and awareness of the role that the landscape architect can play in reconnecting children and nature.

CHAPTER 3

RESEARCH METHODS

3.1 Introduction

The hypothesis of this research is that landscape architecture is uniquely qualified and positioned to address the connection between children and nature through open space frameworks, urban planning, urban design, park design, schoolyard design, residential design, and children's gardens. Given the primary research question (what is the role of the landscape architect in reconnecting children and nature?) qualitative research is most appropriate because the data are descriptive and based on the perceptions of the interview subjects stated in their own words (Taylor and Bogdan 1998).

In this study, in-depth interviews of leaders of Children and Nature Network (C&NN) are used to identify the perceptions regarding the role that landscape architects play in reconnecting nature and children. Interview questions were developed to serve as a guide for the conversation and to elicit the views of the subjects based on their knowledge and experience in this area. The interview transcriptions were analyzed to identify patterns and categories that might emerge. For example, one theme that emerged

from multiple comments was the category of the different roles that landscape architects might play in the movement.

3.2 The Participants

Participants for the research were selected from the leadership of Children and Nature Network (C&NN), the primary organization formed to encourage and support other organizations that are active in this movement. Leaders of this organization include published authors, educators, entrepreneurs, researchers, academics, youth leaders, and business and organizational leaders. Through C&NN, these professionals are the leading proponents of the No Child Left Inside movement. As stated on the C&NN website, the network's vision is "to give every child in every community a wide range of opportunities to experience nature directly, reconnecting our children with nature's joys and lessons, its profound physical and mental bounty" (Children and Nature Network).

The network is also providing a "critical link between researchers and individuals, educators and organizations dedicated to children's health and well-being" (Children and Nature Network). C&NN also strives to be the hub for news and research in this area by providing a forum for publishing and presenting research, reports and case studies on children's health and nature, and related program-development strategies and support.

The participants were selected from the published directory of the leadership team of C&NN with the help of three key informants who work within the C&NN organization. Thirty potential respondents were contacted during the course of the study

and sixteen agreed to be interviewed. One respondent had to cancel the interview due to a family medical emergency. Of the fifteen respondents who participated in the study:

- 5 serve on the Executive Board of Children and Nature Network
- 4 serve as Senior Associates of Children and Nature Network
- 6 are members of the Advisory Board of the Children and Nature Network
- 5 are authors cited in the Literature Search

It was determined after fifteen interviews that the data had begun to repeat and that additional interviews would not yield any substantial new insights. The size of the sample was determined toward the end of the research and not at the beginning. This approach matches the criteria set forth by Taylor and Bogdan (1998).

3.3 Interview Protocol

Based on the criteria set forth by Taylor and Bogdan (1998), in-depth interviews were determined to be the best method for acquiring the data needed for the study. They define in-depth interviewing as “flexible and dynamic...nondirective, unstructured, nonstandardized, and open-ended...modeled after a conversation between equals rather than a formal question-and-answer exchange” (Taylor and Bogdan 1998, p. 88). They also note the suitability of in-depth interviewing when: the research interests are relatively clear and well defined; settings or people are not otherwise accessible; the researcher has time constraints; and, the researcher is interested in understanding a broad range of settings or people (Taylor and Bogdan 1998, pp. 90-91).

Using C&NN's published leadership list and with the assistance of three key informants, potential respondents were identified for the study. Each person was contacted by e-mail or letter to obtain their agreement to participate in the study. Appointments were then scheduled to conduct the interviews and collect the data. The in-depth interviews were conversational and used an unstructured approach with open-ended interview questions. The questions served as a conversation guide and to remind the interviewer to ask about certain topics. Respondents were encouraged to discuss topics and issues which they deemed important, even if the topic was not covered in the interview script.

Interviews were conducted by telephone and were digitally recorded. To protect their anonymity, respondents were given an alphabetic code. The digital audio files were sent to a Santa Monica, California based company, VerbalInk.com, for transcription. Employees of VerbalInk.com transcribed the interviews and returned them in the form of Microsoft Office Word documents. The interview transcriptions were checked for accuracy and corrected where appropriate. Some names and other identifiable information were removed from the interview transcriptions unless they were in reference to an author or other public figure in the No Child Left Inside movement. The audio files containing the interviews were destroyed after the completion of the study.

3.4 Interview Analysis

Taylor and Bogdan (1998, p. 7) note that "qualitative researchers develop concepts, insights, and understandings from patterns in the data rather than collecting

data to assess preconceived models, hypotheses, or theories.” The process of identifying patterns in the data was not mechanical or preconceived, in other words, the data were not automatically checked for specific key words or phrases or tabulated using computer software. While it is impossible to set aside induction and personal interests, the goal of the research was to verify that the theory fit the data rather than forcing the data to match the theory (Taylor and Bogdan 1998).

The strategy used by the researcher to gather and analyze the data, based on the approach put forth by Taylor and Bogdan (1998), has some aspects of grounded theory based on theoretical sampling combined with some aspects of analytic induction. Theoretical sampling, as Taylor and Bogdan (1998, p. 137) describe it, is “...the researcher selects new cases to study according to their potential for helping to expand on or refine the concepts and theory that have already been developed. Data collection and analysis proceed together.” The emphasis is on understanding people on their own terms through description and theory while also analyzing negative cases to refine and qualify the hypothesis (Taylor and Bogdan 1998, pp. 139-140).

The data analysis and categorization was based on inductive reasoning, thinking and theorizing, rather than a mechanical or technical process. Taylor and Bogdan (1998, p. 141) state “In qualitative research, data collection and analysis go hand in hand. Throughout participant observation, in-depth interviewing, and other qualitative research, researchers are constantly theorizing and trying to make sense of their data.” The researcher read and reread the data looking for emerging themes. Several concepts were developed and uniting themes were identified in the data (Taylor and Bogdan 1998). The

interview transcriptions were analyzed for common responses and perceptions, as well as ideas and thoughts that were unique to the particular respondent. The final list of themes, or primary categories, was created and the data were classified using these categories. Each category was then divided into sub-categories to further classify the data.

3.5 Research Questions

The research questions addressed in this study and the central issues of concern for the profession of landscape architecture are:

- What developmental, physical and future benefits does interaction with the landscape provide for children?
- Is there a role for landscape architects in reconnecting children and nature?
- What are the roles for landscape architects in reconnecting children and nature?
- Do specific types of projects lend themselves to involvement by landscape architects?

3.6 Summary of Methods

The research for this study used qualitative methods. A pre-notice letter or e-mail was sent to the respondents chosen for the study. A few days following the pre-notice communication, the person was contacted for an interview appointment. Open-ended interview questions were developed in order to gain the most information from

respondents and provide an opportunity for the respondents to introduce other topics into the conversation which they deemed important and relevant to the issue. Fifteen interviews were conducted and it was concluded that a broad range of perspectives had been uncovered and that additional interviews would not yield any substantial new insights. This conclusion was based on the fact that the data had begun to consistently repeat itself as the interviews progressed.

Analysis and data collection proceeded together. The data were read and reread to identify emerging themes and categories. Several concepts were developed and uniting themes were identified in the data. The final list of themes, or primary categories, was created and the data were classified using these categories.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

In-depth interviews were conducted with leaders, researchers and authors associated with the Children & Nature Network, one of the primary proponents of No Child Left Inside initiatives, to gather their perceptions of the role that landscape architects can play in reconnecting nature and children. The data show that these professionals agree that the landscape architect can play a role in reconnecting children and nature through the design of space that provides opportunities for children to interact directly with nature. However, the data show that there is much to be done to fully involve landscape architects in the movement. As one respondent said “The role of the landscape architect or landscape designer is one that’s not yet fulfilled.”

4.2 Themes from the Data

The data were analyzed to identify common themes, as well as ideas and thoughts that were unique to the particular respondent. The primary categories used were:

- Landscape Architects and the Movement

- Roles that Landscape Architects Can Play
- Overcoming the Obstacles

The first category, Landscape Architects and the Movement, was used to classify responses that explained the general approach used by the movement; the structure of No Child Left Inside initiatives; and, where the respondent thought the general concept of design and landscape architecture fit within the overall movement. Another important part of the responses in this category was the emphasis placed on the sensitivities and core beliefs that were identified as important by the respondents. The responses in this category were further classified into the following sub-categories:

- A Place at the Table
- A Part of the Team
- Core Beliefs
- Important Locations and Project Scale
- Direct Experience with Landscape Architects

The second category, Roles that Landscape Architects Can Play, was used to classify responses that related to the different types of specific roles that were identified in the responses. The identified roles were broken down into the following sub-categories:

- Landscape Architects as Proponents
- Landscape Architects as Interpreters

- Landscape Architects as Designers
- Landscape Architects as Researchers and Writers

The third category, Overcoming the Obstacles, was used to classify responses regarding barriers to success and how some of those barriers might be overcome. Several respondents identified what they perceive to be the inhibitors or obstacles that have limited the success of the movement and have prevented landscape architects from effectively participating. The respondents who identified these inhibitors also shared their perception on ways that some of the identified obstacles can be overcome. The responses in this category were further classified into the following sub-categories:

- Societal Issues
- Lack of Awareness
- Fear and Safety
- The Ability to Overcome

4.3 Summary of Findings

The movement to reconnect children and nature is viewed by respondents as essentially a two-pronged approach. The first area of focus is on those who control children's time and the second area of focus is on the places where children spend their time. Each of the two areas is viewed as having primary gatekeepers – parents and educators for the first, planners and design professionals for the second. The focus of those involved in the first area is primarily on parents and educators since they control

the vast majority of children's time. It is in the second area where landscape architects, designers, urban planners and even landscapers are mentioned as playing a primary role. This role, as those who control the design and characteristics of the physical spaces where children spend their time, is considered the critical role for landscape architects. Because of the intense focus on locations where children spend most of their time, home and school are the most frequently mentioned locations where the respondents thought that landscape architects should be focused on creating opportunities for children to interact with nature.

The respondents all agreed that landscape architects can and should play a vital role in efforts to reconnect children and nature. Most of the respondents mentioned the design of specific sites such as residential yards, neighborhood parks, schoolyards, community and city parks, trail systems, and urban spaces as being of primary importance to the effort. Most of the respondents do not view the landscape architect as the central figure in these efforts, but rather that the landscape architect is one of several professions who must come together as a team to effectively address the complexities and issues involved. However, several respondents do view the landscape architect as the one on the team who can create and hold the vision for a project. Many respondents were unable to name an initiative in which they had worked with a landscape architect.

Several respondents also mention the need for landscape architects to work on issues other than the physical design of space. Legal and social issues were mentioned as areas where more focus is needed and where the landscape architect could have influence. Examples were given regarding neighborhood restrictions, draconian home

owners associations, design decisions driven by liability concerns and the need to address parental fear for children's safety. Another topic raised by more than one respondent is the need for the design professionals to work more closely with the other professions involved in the movement to better understand the viewpoint of others who are involved as well as the programs and curriculum that will be utilized for a particular project or initiative.

4.4 Landscape Architects and the Movement

4.4.1 A Place at the Table

Respondents acknowledged that landscape architects have a role in the movement to reconnect children and nature by providing opportunities and spaces for children to have direct interaction with nature. An introductory question was asked to record the respondent's initial perceptions regarding the role that the landscape architect might have:

- Does the landscape architect have a role in the movement to reconnect children and nature?
- If yes, what is that role?

The initial interview question received an immediate and affirmative response from the respondents. While the respondents were universal in their agreement that the role played by landscape architects is a vital part of the movement, several placed conditions on their answer that identified some of characteristics they thought were

important, such as: sensitivity to the needs of children; awareness of the broader issues; and, education and knowledge about the process of reconnecting children and nature. The results of the follow-up questions were varied and formed the basis for the categorization used to classify the responses.

The No Child Left Inside movement is perceived by most of the respondents to be comprised of two primary focus areas. The first is on the gatekeepers who control the majority of children's time, primarily parents and educators. The second focus area is on the gatekeepers who have the most influence on the design and physical characteristics of those places where children spend their time, primarily planners and design professionals. Respondent A6 said "...there are two gatekeepers in this whole children and nature movement, gatekeepers that hold the keys...and one is those who control the children's time, and the other are the designers, and that includes urban planners, landscapers...it is the design of our physical space..." The respondents all agreed that the landscape architect has a role to play in the movement.

4.4.2 A Part of the Team

None of the respondents initially identified the landscape architect as the central figure or as having the primary role in efforts to reconnect children and nature. Respondent A12, when asked about landscape architects involved in specific initiatives said "...more often than not, the landscape architect, as you know, has not been a particularly powerful figure" and respondent A21 responded "The role of the landscape architect or landscape designer is one that's not yet fulfilled." The respondents typically

described the movement in terms like ‘teams’, ‘collaboration’, ‘ambassador team’, and ‘team approach’. None of the respondents identified a singular role or profession as the primary or dominant role in the movement. The landscape architect is one of several professionals who must come together as a team to effectively address the complexities and issues involved. Respondent A21 discussed a need to involve the entire community and said “we’re talking about a community wide effort that involves everyone.” Respondent A10 described landscape architects as “important interdisciplinary partners”. Respondent A12 said “...as we recognize that to achieve these complex outcomes, we have to get away from the silo mentality of each specialist operating independently and apart [from each other and take a] more team and collaborative approach. I think the role of landscape architects will grow accordingly.” Respondent A17, when describing the team approach said “...have more landscape architects be part of the ambassador team...” Respondent A30, on describing the interaction between the professions said “...landscape architects ought to be talking to nature therapists ought to be talking to urban planners...ought to be talking to educators.” Respondent A30 also expressed the desire for an interdisciplinary program which produced individuals who had training and education in all of the necessary disciplines. This respondent said “...what I would like to see some university do is basically create a new interdisciplinary discipline or department that would fall under this broad umbrella of connecting people to nature.”

Several respondents did identify the landscape architect as one who could create or hold the vision for the team. Respondent A6 said “I think they have the ability to hold the image, hold the vision, and even create the vision of what the community should be

like.” Respondent A8, when describing the importance of the landscape architect for residential developments, said “I think they can be the ones who hold the vision for what those 100 acres or those 500 acres or even those 10 acres can be like.” Respondent A30 stated the desire for the landscape architect to approach the issue from the standpoint of not only the physical design, but also the legal design that accompanies places, such as the community associations and restrictions that go hand in hand with the physical design, and the social design, such as working to change social behaviors of families through family nature clubs. Respondent A10 said “...landscape architecture is an absolutely pivotal part of resolving multiple issues that our society faces.” Respondent A30 also stated a desire for the need to “think more holistically and larger about a larger umbrella called connecting people to nature.”

4.4.3 Core Beliefs

Several respondents mentioned the core beliefs that they perceived that the landscape architect should possess to be effective in the movement. These included a commitment to open space, wildlife habitat, and recognizing the importance of children’s need to interact with nature. Respondent A8 said “...if a trained landscape architect has at the core of their belief system an understanding of the importance of open spaces, and an understanding of why we need to make natural habit available to young people as well as adults and families...” Respondent A12 said “...these represent opportunities for the designer...if they’re willing to address the needs of children and take their perspective and do a little bit of research on children’s relationships to nature.”

Throughout the interviews, the respondents stated the need for landscape architects to offer their expertise. As respondent A19 said “...my experience in working with really thoughtful – some of them aren’t very thoughtful, but I think the really good, the leading edge landscape architects; they really affect the way you think about the landscape.”

4.4.4 Important Locations and Project Scale

The locations most mentioned by respondents as being important spaces on which landscape architects should focus were residential areas and schoolyards. These locations were perceived to be the most important because they are where children spend most of their time. Respondent A6 said “...it is often a matter of place and convenience and options... if I have the option of walking across the lawn, or if the play area, for example, at a school, if the option is that there is a natural playscape there, then I’m more likely to interact with nature.” Respondent A10, in response to the initial interview question, noted the importance of these locations, saying “...help parents with their yards and designing for nature play at home, certainly site designs and developments and multi-family housing in neighborhoods, and, of course, school yards.” When asked a questions regarding scale of projects, respondent A12 replied “...children’s built environment primarily focuses on home, school, and play, and certainly in the design of landscapes and associated with homes, whether it be individual homes or condominium and apartment complexes and beyond, there’s a huge opportunity to the extent that landscape architects are involved in these designs to provide opportunities for children.”

In noting the importance of these locations, respondent A29 said “...if we can create built environments at schools, in homes, and in after-school programs which instill a lot of the green design principles that are out there, then we have an opportunity to really help create that cultural atmosphere and change where children are getting outdoor experiences. [Then] it is part of their everyday life.”

Several of the respondents asserted that the landscape architect has a role to play at many different scales of projects, from small site design for a residential project to regional master planning. Respondent A6 said “...being a major player at the table in all of these pieces, including urban design of communities.” Respondent A10 commented regarding scale “...the need for ecosystem management and water catchment...landscape architects who work particularly in the area of watersheds on a large scale combining ecosystem management with planning...opportunities to create access to water and greenways throughout on a regional basis...” Respondent A14 referred to it as a “continuum” and a “series of concentric circles”. One respondent, A22, in response to a question regarding project scale, said “I don’t think of landscape architects as working on regional open space projects, but I guess they do.”

4.4.5 Direct Experience with Landscape Architects

The second series of interview questions related to initiatives where the respondent had direct experience working with a landscape architect. The questions were:

- Have you previously worked with landscape architects in initiatives to reconnect children and nature?
- Can you briefly describe the initiative?
- What was the role of the landscape architect(s) in the initiative?
- Do you think the role was an appropriate role? (Why or why not?)
- Did the landscape architect's role create any issues or problems? (Why or why not?)

Most of the respondents could not recall a specific initiative or project that they had been involved in where they worked directly with a landscape architect. In some cases, they thought a landscape architect might have been involved but they were not sure. Respondent A6, in response to the question, answered “this is – and I think this is telling. I’m not sure...you guys are, yes, more hidden to me than a lot of other professionals...’ Regarding another project, respondent A6 said “...it was pro bono work by a design firm, but are they – I don’t know if they’re landscape architects or what exactly their expertise is...” Respondent A8 answered “I do not know specifically” while respondent A12 said “Not a great deal, but I certainly have interacted with landscape architects around these issues.” The respondents who have worked with landscape architects on specific initiatives described mostly schoolyard and park projects where the landscape architect was involved in the design of a site specific project.

4.5 Roles that Landscape Architects Can Play

4.5.1 Landscape Architects as Proponents

Several respondents cite the need for landscape architects to be proponents in different facets of the movement. The areas that were most mentioned as important for the landscape architect to support and champion were: children's needs; open space and parks; green space; and, wildlife habitat. The need for landscape architects to educate, inspire and inform were frequently mentioned in the responses as well.

Several respondents asserted the need for landscape architects to be proponents for the needs of children and their interaction with nature. Commenting on the current state of planning and design, Respondent A10 said "nearly everybody working on these issues does not take children into account. And children's need for nature play is just not part of the discussion at all." Similarly, respondent A12 said "...most landscape design has not really thought much about children – in a residential context, children's needs." Respondent A10 also said "...landscape architects have a role to be advocates for...green space for all ages especially critical need for children's access to – to play in nature." Respondent A21 said "...there is so much need for people to understand the value, the importance of a variety of different nature based settings in which children...can learn and play, and that's why landscape architects who have a feel for all of this can be an enormous help." Respondent A24 thought that the design community should also be proponents for others' views. This respondent said "...when I think about urban communities, I think about the fact that a lot of pluralism and diversity and inclusion has not had its place at the table of design."

Policy changes were also cited as an area that would benefit focus from landscape architects. Respondent A19 said “...there needs to be a change in policy and legislation in the design of neighborhoods and the setting of standards in community plans and all these kinds of things. And if legislation and policy was changed, well then we’d have to bring in people like landscape architects so that we can meet those standards.” In speaking about land use plans, respondent A8 said “...if there’s not a land use plan in place, it means that the developers who have no tie emotionally or culturally to that particular landscape...without a land use plan enforced, they’re able to come in and divide that land into as many units as they want...with nothing more in mind than short-term gain...that’s where you have no vision for the community.” Citing a need to educate policy makers and developers, respondent A17 stated “...part of it is education of the decision makers. Again, for the developers, they have to see that it’s going to help in their sales of homes. And so we have to, through this movement and...as landscape architects, work with developers [to] be able to better communicate that message.”

Landscape architects are viewed as ideal proponents for open space and wildlife habitats. Regarding this topic, respondent A10 noted “...we need some education in our society. The importance, again – here we’re talking about multiple concepts – the importance of green corridors in habitats for biodiversity.” Respondent A29 said “...if we can create built environments at schools, in homes, and in after-school programs which instill a lot of the green design principles that are out there, then we have an opportunity to really help create that cultural atmosphere and change where children are getting outdoor experiences. [Then] it is part of their everyday life.”

Several respondents stated the need for landscape architects to educate and inform others. One respondent specifically noted the need for landscape architects to educate their clients. Respondent A22 said “...the architect or designer winds up being in an educational role with the client because I’m not sure clients are gonna come to the architect with that in mind” and “it becomes the architect’s responsibility to educate the clients whether the client is a private client in terms of the design of the home site or whether it’s a developer or whether it’s a school or designing a new school.” Regarding the role of education, respondent A10 said “there is a definite need for public education and education within disciplines.”

4.5.2 Landscape Architects as Interpreters

Gathering the input of children during the early stages of a project was viewed as important by several respondents. They stated benefits that included: learning what the children want; gathering design ideas; teaching children how the process works; and, bringing children into the democratic process. These respondents also viewed landscape architects as a primary part of the team that could use and interpret the children’s input to yield specific design attributes and characteristics. In response to a question regarding the input of children, respondent A6 said “I think [we] forget to ask children or look at things from a kid’s point view.” Respondent A14 thought the designer could learn from the input of children and said “...finding out what the kids respond to....discovering that the standard questions that he [the designer] asks are not useful. I mean I think the designer needs to observe kids. I also think it’s very good for the kids themselves to be

involved in the design...” Respondent A10, in stating that input from children could improve the design process, said “I’m quite confident that when children are involved, safe nature places are going to come up again and again and again as something that’s really important to them.” Expressing faith in the quality of children’s input, respondent A25 said “...kids always come up with interesting ideas which adult designers are never going to think of.”

While acknowledging the need for children’s input, respondent A12 did caution over relying on their input at the expense of other valuable input. This respondent said “I feel – I mean intuitively I kind of think it’s important to include kids in the design, not think, I know it’s important to include them at some [point in the] process. On the other hand...I don’t think kids have any inherent sort of greater wisdom...they are still people. And I don’t see anything inherently wrong with adults making certain assumptions for kids that have important perspectives and kids will often not consider...and if they’re willing to extend themselves, they can in a sense collaborate with kids or at least try to take the kids’ perspective. So as I say it’s not an area I know a lot about and sometimes I feel like this sort of – I think it’s a mistake for us to romanticize or over-glorify what children know or don’t know in relationship to nature as if it has been imbued with some mystical innocence.”

Respondent A8 thought that children needed to feel ownership in decisions that were made and said “...it very much should be a movement that is coming from the youth...an important part of the movement has to be feedback from the young people so that they develop a proprietary interest in it and a sense of ownership about it.”

Regarding future benefits of involving children, respondent A10 said "...the other major reason for involving young people is all the arguments of democratic citizenship. You don't suddenly become an informed active citizen, bingo, at age 18, but it's a learning process."

4.5.3 Landscape Architects as Designers

Most of the respondents primarily recognized the role of the landscape architect as the designer of sites. The comments by respondents regarding the design work performed by landscape architects covered a variety of topics including: the need to integrate nature into as many sites as possible; designing natural play areas; the need for designed wild space; meeting the needs for safety and security; providing habitat for wildlife; and, looking for lost opportunities in urban areas.

The need to integrate nature into the daily lives of children was the focus of several comments. Respondent A12 said "...if it's not integral to kids' everyday lives, if it's exotic and transient and over there, then I think it'll be superficial, the benefits." Respondent A6 said "...when an area is surrounded by a landscape that is conducive to interacting with it, it is much more...likely it's going to happen." On the need for the integration of nature into sites other than parks, respondent A12 said "...parks have been the notion of nature, especially in urban context...been kind of thinking of nature over there in the park. And so nature becomes sequestered and a place you visit, but it's not part of your life."

Most of the respondents had perceptions on the need for 'wild space' or un-designed space. Respondent A17 thought that these types of areas needed designed entrances and said "...taking advantage of what is there naturally...but doing it not so much overly groomed...and then in some of your main entrance areas you may have to still stick with the more groomed area. But even in that, you can institute butterfly gardens, opportunities for water areas that can attract birds and other things of that nature, and it still looks groomed, but it still becomes a great opportunity for some of play." Respondent A6 made a similar statement "...what can help with that in terms of having public support for those completely natural areas, which I don't think generally there's a lot of support, or it's a misunderstood area...we might need a more planned area just at the beginning of it, sort of a safer place that has some modifications. But in terms of wildlife and trails and whatever, yes, I'm an advocate of some natural area".

While acknowledging that there is in fact a need for a type of wild space, most respondents thought it should be designed to some extent. Respondent A8 said "I think what's important is designing those spaces" and in response to a similar question respondent A30 said "...we have to preserve everything we can, but increasingly we're going to have to move toward 'creating nature'...there is a built-in paradox there that human beings create nature." Respondent A10 referred to it as "designed wild play." Respondent A22 referred to the design wild space as "lightly landscaped or thoughtfully landscaped to encourage access on the part of kids and families, and also to provide the sense of safety even though it's a fairly unstructured landscape." Respondent A6 thought these spaces should be "inviting and natural and resilient."

In discussing the paradox of designed wild space, respondent A12 said “...humans have always intervened with nature, and it’s not necessarily bad...I think [because of] the environmental movement, we’ve overstated the purity of nature and the impurity of humans”. This respondent also thought “...you can actually create places that are...more biologically attractive, diverse, satisfying, and yet they’re created, they’re somewhat cultivated, or they’re initiated.”

Safety and security were topics raised by many of the respondents. The respondents who commented on these issues expressed the need for more research and design solutions to overcome some of the fears regarding safety and security that prevent children from interacting with nature. Respondent A6 said that designers should “overcome fear with wise design.” Discussing the needs of children, respondent A12 said “...they need familiarity...they need safety and they need security.”

Overcoming the fears of parents was cited as very important to address safety and security concerns. Respondent A10, in discussing these issues, said “...their parents need to perceive that these places are safe.” Respondent A14 said “...you have a whole separate problem of getting parents to allow children to have the experience of being distant, being hidden, of going into a kind of dense and complicated setting where they make discoveries and they feel that nobody’s ever been there before” and “...you have to have highly visible spaces, places where a child can be invisible and watched from in small, contained areas.”

Several respondents stated the need for spaces designed for children to interact with nature that also provide habitat for wildlife. Most also mentioned the desire for

native plants as one solution for providing this habitat. In discussing children's fascination with wildlife, respondent A14 said "children are so much more aware of the fauna and the adults are so much more aware of the flora" and "...pick plants that will attract critters..." Respondent A17 said "...put plants, butterfly gardens and those things of that nature being put into the design and making sure there is that green opportunity for kids to go outside and reconnect with nature."

The role of aesthetics in spaces designed for interactions between children and nature was also raised by several of the respondents. Most thought that it was important to consider the aesthetics of the site, while also striving to meet the goals of providing the type of spaces that work best for children. Several of the respondents acknowledged that there is some tension or conflict between what adults want a site to look like and the type of site that children need. Respondent A14 said "...you want a landscape that's diggable, full of mud puddles to stomp in, where you can run in any direction regardless of what you're stomping on. And yet at the same time, you want it to meet the aesthetic needs of the adults." Respondent A21 thought that design solutions could resolve the conflict and said "...we ought not to think that just because there are loose parts and varied settings that the result won't be powerfully aesthetic. And a sense of beauty is incredibly important to everyone...so all of this that we're talking about can be done in a very attractive, very appealing way." Regarding the conflict, respondent A17 stated "...there is potentially some conflict there...part of it is education because you've got to have unstructured play for children...a lot of times that means it's not always manicured... doing it not so much overly groomed...you may have areas that are more conducive to that, and then in some

of your main entrance areas you may have to still stick with the more groomed area.” This respondent also said “I hope that as more landscape architects are more attuned to this effort and help work with the design...[and] can help guide this a little bit better to allow both to take place and still meet those experiences.”

Respondent A17 thought that connections to trails were an important design element. Commenting on the value of connecting neighborhoods to regional trails, the respondent said “...we are big promoters...[of] connecting areas together...but do so in a way through those trails as an important aspect, and it needs to be an experience that is safe for people to travel on...keep that greenery and keep the natural or cultural resource availability...”

Two respondents thought that it was very important for landscape architects working in urban areas to look for other opportunities to provide spaces where children can interact with nature. Rooftops and parking lots were two specific places mentioned as having potential benefits for this purpose. Respondent A21 said “...[in the] core urban environment, maybe one with a lot of crime. What can we do for the children outdoors? And one of the innovations is to go to the roof. Create some wonderful natural play areas on rooftops where people can take turns keeping an eye on the kids, but they can have that opportunity for fresh air and planting plants, and put some boxes up there they dig in...” Regarding the use of parking lots in urban areas, respondent A24 said “...around the perimeter of the parking lots...there is a lot that can be said about parking lots not being inviting to anything else other than a car. I think that...a lot of that can be done more, with just being able to see a vine or see a plant growing or flower.”

4.5.4 Landscape Architects as Researchers and Writers

Landscape architects contributing to the movement in the form of research and publishing efforts was seen as a critical role by several of the respondents. Respondent A10 said “I think the research is really, really a key piece of demonstrating that access to nature is really important for children’s well being.” Commenting on specific research that is needed, respondent A22 said “...provide better research on risks of nature play – compared to organized sports...” Respondent A25 stated that the design fields are lacking on the research front and stated “...in the design fields there’s not a strong research culture, and we struggle with that all the time. We don’t have enough research out there that other...scientific disciplines are going to pay attention to, and that’s really critical because you’ve got public health particularly thinking that they know about design...” This respondent also stated that “...you’ve got to cover in the popular press, [but we must be] getting that kind of material out into the peer reviewed scientific journals...” and “...we have to do our best to educate these other disciplines about what design is...it is a very particular way of thinking about the world and intervening in it.”

Two respondents also cited the need for landscape architects to perform research and co-publish with professionals from other disciplines. They viewed this as an important activity that would allow other disciplines to be exposed to the work and research of landscape architects and conversely for landscape architects to learn more about the work of other professionals involved in the movement. In citing the need for this activity, respondent A20 said “...there’s not that much cross-fertilization, and there

should be more. And in the case of landscape architects, they should be writing and publishing in educational journals.” This same respondent also said “I think that landscape architects ought to co-write with educators or naturalists or recreation park rangers...a recommendation that they not continue to write in isolation of educators and naturalists and whoever’s leading the program, but that they co-write and, therefore, they are learning as well as the teacher who they’re co-writing with is learning about two different perspectives. I don’t think landscape architects know curriculum and pedagogy to the level that teachers and educators do. So I see a real benefit to both educating each other with their specialties.” Respondent A25 added “the issue is that on the education side, people don’t understand what designers do and what they can do for them... Landscape architects don’t...have a good understanding of how the environment can help facilitate learning, play, and education. So it’s very much a two-way street.”

Respondent A30, while strongly supporting the need for research, was also adamant that we not wait on the research to move forward in the effort to reconnect children and nature. This respondent stated “...an article that’s available on the information network website, and in it we say...Yes, we need more research, but we know enough to act. We cannot wait; we cannot wait another 30 years for the perfect longitudinal study when it should’ve been started 30 years ago.”

4.6 Overcoming the Obstacles

4.6.1 Societal Issues

Respondents pointed out many obstacles that must be overcome to provide more opportunities for children to interact with nature. Several focused societal issues and a general movement away from nature. Respondent A12 said "...the most significant inhibitor has been just a general trend away from nature in our lives...the degradation and impoverishment of natural systems just because of pollution and loss of habitat." Respondent A24 added "...we are being sold a very sanitized way of looking at the outdoors." Respondent A12 voiced additional concerns when stating "a major inhibitor has been that most of our approach to the design in a built environment, especially the urban built environment, has been an assumption that nature doesn't really matter and that a matter of the progress of these places is the extent to which we degrade or suppress or transform nature." A lack of focus on children's needs was mentioned by respondent A10 who said "...children have never been a really sexy topic...and I think children's needs have been a soft issue."

Several respondents voiced the concern that we act quickly before a generation of children become adults who lack a strong connection to nature. Respondent A25 noted that the problem becomes self-perpetuating "I think one of the growing obstacles, and that's why we've got to move fast on this, is the fact that children are growing up disconnected to nature. So when they become parents, without this passion about it, their children are going to be disconnected completely." Respondent A12 added "...we just have to return to a recognition and understanding that our health and our productivity and our

physical and mental and moral capacity and well-being depend upon the quality of our experiences in relationships to the natural world” and then stated “...one of the big problems is that we’ve put into place such an infrastructure of degradation and separation from nature that it’s not...easy to undo what’s been done.”

4.6.2 Lack of Awareness

A general lack of awareness was cited by several respondents as another inhibitor or obstacle. Respondent A10 noted the “lack of awareness” and respondent A22 responded “I think inhibitors are just the lack of awareness that it can be done a different way.” Respondent A21 also noted the lack of awareness regarding ideal play areas and said “...people have not understood the importance of native landscaping and simply the lose parts idea, that to have natural materials be in children’s play environments, people have not realized this incredible plague of the mechanical equipment that is all the same and play areas that just are not rich and diverse.”

Two respondents specifically noted the need for landscape architects to increase their awareness of the issues. Respondent A25 stated “...LAs don’t understand how the environment can help facilitate learning, play, and education.” Commenting on the perspective of landscape architects, respondent A22 said “...I think that landscape architects think in terms of natural infrastructure and don’t necessarily think in terms of the affordances in the landscape or the affordances you can build into the landscape that encourage children’s play. And that’s the perspective that I think landscape architects need to develop. “

4.6.3 Fear and Safety

Fear and safety issues were mentioned by several respondents as obstacles that must be overcome. Noting the public's fear of nature, respondent A25 said "...people think somehow nature is dangerous or – there's just a lot of concern about liability all over the place. People are afraid of getting sued and it's not – it's actually about safety... I mean nature is very safe. What's the problem?" Another respondent, A22, stated "...one of them is concern about line of sight, visual supervision. And it's certainly true in terms of public school landscapes, and it tends to also be true in terms of playground design and things like that, this notion that if you cannot see a child 100 percent of the time then that's of inherent liability. And so that's a design – it's an educational challenge and then a design challenge." Respondent A19, commenting on the fear issue, said "...I think that a lot of it is the perception of fear. And I think you can get around that with proper design."

4.6.4 The Ability to Overcome

The pattern of continuing to do things the way they have been done in the past was mentioned by several respondents as well as the ability to overcome those obstacles with design solutions. Respondent A6 said "...we think that things have to be done in such a way for ease of maintenance or for fear; I think we can overcome those...with good design" and "...we can overcome those perceptions or barriers with wise designs, with wise plant choices where you have shrubs that aren't quite as dense, so that you still

get some visual barrier and a pleasant look without being a wall.” Respondent A6 also asked “Why have we fallen in these particular patterns? ...I think it’s when we don’t see the other options.”

Respondent A30 best summed up the obstacles and overcoming them by saying “I think the biggest barrier is lack of imagination; the kind of communities that we live in, that are being built. That lack of imagination is locked in by financial institutions that will only give loans for certain kinds of developments to developers, and by developers that can’t seem to get out of their box. But moreover, if the biggest barrier has to do with...and I often paraphrase Martin Luther King, who said that in any culture, any movement will fail if it cannot paint a picture of a world that people will want to go to. That’s a big barrier, that we cannot paint a picture of cities and suburbs and towns that have nature woven into them every bit as much as technology.”

4.7 Summary

The data collected in the interviews with leaders, researchers and authors associated with the Children & Nature Network show that the leaders of this movement agree that the landscape architect has a prominent role to play in the efforts to reconnect children and nature. Landscape architects are needed to join the teams and lend their expertise to realize children and nature reconnected. The data show that there is still much to be accomplished in this effort.

CHAPTER 5

CONCLUSIONS

5.1 Conclusions

The objectives of this research study were to:

- Examine the current perspective of how landscape architecture is perceived by leaders of Children and Nature Network (C&NN), the primary organization formed to encourage and support other organizations of the No Child Left Inside movement.
- Describe from the literature the link between nature and childhood development and how experiences in nature affect children.
- Describe the results of a disconnection between children and nature
- Describe the implications and opportunities for landscape architects in the movement to reconnect children and nature.

Qualitative analysis of the interview data is used to explore the perception of landscape architects and their role by the respondents. The respondents all agree that landscape architects play an important role in the efforts to reconnect children and nature.

The literature review clearly describes the link between children and nature and the importance of this connection on healthy child development. The affect of the child-nature connection on adult attitudes toward environmental issues is clearly defined and described in the literature. Likewise, the results of the disconnection between children and nature are defined and described.

This study also addresses the implications for landscape architects working in the area of connecting people to nature. The data highlight the opportunities for those landscape architects who join the team of professionals and specialize in the skills necessary to reconnect children and nature.

5.2 Relevance to the Profession of Landscape Architecture

The profession of landscape architecture has been built on the principles of dedication to the public safety, health and welfare; and recognition and protection of the land and its resources. The research clearly shows that the health and welfare of children has been impacted by the lack of interaction with nature. Safety is one of the primary concerns raised when discussing the design of spaces designed for children to directly interact with nature. The landscape architect is uniquely qualified to address these issues and contribute to the effort of reconnecting children and nature by providing a wide range of opportunities for children to experience nature directly, while building the next generation of environmentally conscious citizens.

As this movement gains momentum, there will be many opportunities for landscape architects to be involved. As one respondent said “I hope that it’s going to

open up a specialized market for landscape architects, and I think they need to be paying attention to it. What I would say is that I see this movement...as part of a broader realm of business in landscape architecture or landscape design..." Some of the skills needed are quite specialized, but the opportunity for business in this area will be great.

Training professionals in the necessary skills was cited as important. One respondent noted the need for a new interdisciplinary discipline or department that would train students in the field of connecting people to nature. Connecting people to nature would be a career path that one might pursue with proper training in the relevant disciplines.

The American Society of Landscape Architects (ASLA), the national professional association representing landscape architects, has recognized the importance of this issue and in February, 2009, approved a new Professional Practice Network (PPN) for Children's Outdoor Environments. This is one of 17 specialized areas of landscape architecture supported by ALSA. The focus of this network is on designing areas for children to play, learn, and develop a relationship with nature and to increase the visibility of landscape architecture in this emerging area of practice; connect with educators, health professionals, and others concerned with the well-being of children; advise ASLA of changing trends and needs in this specialized area of design; and provide for communication and networking among members of the PPN.

Citing the critical need to improve environmental education across the country, Senator Jack Reed (RI) and Congressman John Sarbanes (MD) introduced the Senate and House versions of the No Child Left Inside Act (NCLI) in April, 2009. The legislation, if

passed, would mark the first environmental education legislation to pass Congress in more than 25 years. The bills ([H.R.2054](#) and [S.866](#)) would allow states to provide high-quality, environmental instruction. The bill would support outdoor learning activities both at school and in non-formal environmental education centers, teacher professional development, and the creation of state environmental literacy plans.

5.3 Suggestions for Further Research

Several respondents in this study expressed the need for landscape architects to undertake more research in this area. As one respondent said “...in the design fields, there’s not a strong research culture, and we struggle with that all the time. We don’t have enough research out there that other...scientific disciplines are going to pay attention to...we have to do our best to educate these other disciplines about what design is.” Performing research and publishing the results in peer reviewed publications was cited as critical to establishing landscape architecture in the movement.

It is also important for landscape architects to team with professionals from other fields to perform research and publish. This is viewed as a critical component of educating other professions on the roles that landscape architects can play and also to educate landscape architects regarding the importance of the child-nature connection.

This study can serve as a starting point from which to address many other questions and issues regarding the importance of the connection between children and nature and the role of the landscape architect in helping to restore that connection. As a

result, the following research questions and topics are recommended for exploration and further study:

- Analysis of the perceptions of landscape architects regarding their role in the movement. Only one respondent in this study performs the activities of a landscape architect and gathering more data from landscape architects would be a valuable addition to the profession.
- How important is wild space, or undesigned space, to the connection between children and nature? Where wild space cannot be preserved, how important is it to recreate some designed form of it? Several respondents had the perception that wild space is important, but this topic is broad enough to warrant further investigation regarding its importance to children and their development.
- Is it possible for landscape architects to ‘create nature’? What is ‘created nature’? Several respondents noted the need to create and design wild space and one respondent observed the paradox that human beings can create nature.
- How valid is the perception that adults prefer outdoor spaces that are manicured and neat in appearance? Does this perception create a tension or conflict that the designer must resolve when creating spaces that are designed to foster opportunities for children to interact with natural systems? Several respondents expressed opinions regarding this tension

or conflict and whether or not it existed. Further study is necessary to determine the validity of the issue and how the designer should resolve it.

- What is the impact of design awards programs on the movement to reconnect children and nature? Would a designated award or competition chartered with recognizing superior design work in the field change the focus brought to the effort by design professionals? The topic of awards came up in a couple of the interviews and the perception was that award programs could have a positive impact on the movement by bringing more focus and publicity to the issue because of the interest that such programs attract from the professional design community.
- What is the impact of the play industry on safety and liability concerns, regulations, and common practices? Does the industry contribute to the lack of opportunities for children to interact with nature? Several respondents mentioned the influence of the play industry and how the economics of this industry affect the types of environments that are designed for children.
- What are the guidelines for landscape architects to use when developing projects meant to provide an opportunity for children to interact with nature and natural systems? Are there any standards which have been created? Could the needs of children be incorporated into the LEED guidelines? Only one respondent mentioned the need for guidelines but

several talked about LEED standards. This is an area that would benefit from further research.

5.4 Summary

This research study began with the hypothesis that the field of landscape architecture is uniquely qualified and positioned to address the disconnection, or lack of interaction and experience, between children and nature. Many professionals involved in the No Child Left Inside organizations shared their perception of the roles that landscape architects can fulfill to contribute to this burgeoning movement. The results of the study show that landscape architects do have a prominent role to play in the movement but are not viewed as the central or most important figure. Instead, they are viewed as professionals who possess a critical skills set, which, when combined with the skills of other professionals, can influence the realization of nature and children reconnected.

However, there are barriers that must be overcome. As one respondent said “I think the biggest barrier is lack of imagination; the kind of communities that we live in, that are being built...that we cannot paint a picture of cities and suburbs and towns that have nature woven into them every bit as much as technology.”

APPENDIX A
INTERVIEW QUESTIONS

INTERVIEW QUESTIONS

First, I would like to ask you a couple of questions regarding the role of the landscape architect in reconnecting children and nature.

1. Does the landscape architect have a role in the movement to reconnect children and nature?
2. If yes, what is that role?

Now, I have some questions related to your direct experience working with landscape architects in efforts to reconnect children and nature.

1. Have you previously worked with landscape architects in initiatives to reconnect children and nature?

For each initiative, ask questions 2-5.

2. Can you briefly describe the initiative?
3. What was the role of the landscape architect(s) in the initiative?
4. Do you think that was appropriate role? (Why or why not?)
5. Did the landscape architect's role create any issues or problems? (Why or why not?)

Thank you for your time today!

APPENDIX B
SAMPLE INTRODUCTION E-MAIL

Dear Mr./Mrs. John Doe:

Your participation in an important research project will help landscape architects in their efforts in the future.

I am completing my Master of Landscape Architecture degree at The University of Texas at Arlington. My thesis topic is *An Examination of the Role for Landscape Architects in the No Child Left Inside Movement*. My topic sprang from the impact that reading Richard Louv's book, *Last Child in the Woods*, had on me. As I read the book and have done further research, I am surprised at the lack of mention of landscape architecture in the movement the book has spawned. This is the topic that I am addressing with my master's thesis.

I would like to request your participation in this research via an interview. This study is an important one that will help landscape architects in their efforts in the future. The interview will take approximately 60 minutes of your time.

Are you available to be interviewed at one of the following dates and times:
February xx, 2009 xx:00 A.M.
March xx, 2009 at xx:00 P.M.

Feel free to call or email me if you have any questions. Thank you for your time and consideration. It is only through the generous support of people like you that our research can be successful.

Sincerely,

Wade A. Miller
Graduate Student
Program in Landscape Architecture
The University of Texas at Arlington

1102 Brazos Drive
Southlake, TX 76092

Pho: (817) 846-9110
Fax: (888) 267-4146
Email: wade.miller@mavs.uta.edu
Email: wade@WadeAMiller.com

APPENDIX C
SAMPLE INTRODUCTION LETTER

February xx, 2009

John Doe
1092 Somewhere Drive
Hometown TX 76999

Dear Mr./Mrs. John Doe:

A few days from now you will receive a phone call requesting your participation in an interview for an important research project. The interview concerns the practice of landscape architecture and initiatives to reconnect children and nature.

I am writing in advance because we have found many people like to know ahead of time that their participation is being requested. This study is an important one that will help landscape architects in their efforts in the future. The interview will take approximately 60 minutes of your time.

Thank you for your time and consideration. It is only through the generous support of people like you that our research can be successful.

Sincerely,

Wade A. Miller
Graduate Student
Program in Landscape Architecture
The University of Texas at Arlington

1102 Brazos Drive
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Pho: (817) 846-9110
Fax: (888) 267-4146
Email: wade.miller@mavs.uta.edu
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APPENDIX D
TELEPHONE SCRIPT TO SCHEDULE INTERVIEW

Script for Initial Call to Schedule Interview

Hello Mr. / Ms. _____

My name is Wade Miller. I am a graduate student in the Landscape Architecture Program at The University of Texas at Arlington. I am working on my master's thesis for my Master of Landscape Architecture degree. I am calling to request your participation in an interview for an important research project. The interview will take approximately 60 minutes of your time. My research concerns the practice of landscape architecture and initiatives to reconnect children and nature. This study is an important one that will help landscape architects in the future.

What would be a convenient date and time for us to discuss this subject?

Thank you for your time and I look forward to talking with you on _____.

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