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**OPPORTUNITIES FOR WONDER IN A PUBLIC PARK**

**by**

**Alex Butler**

Submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts in Geography, Hunter College  
The City University of New York

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## TABLE OF CONTENTS

LIST OF FIGURES .....	iii
LIST OF TABLES.....	iv
I. INTRODUCTION.....	1
II. FRAMEWORK.....	2
III. LITERATURE REVIEW .....	4
1. Cause for Concern.....	4
2. Early Spaces for Children .....	7
3. Fear Sets In.....	9
4. Bringing Risk Back .....	12
5. The Importance of Free Play.....	15
6. The Benefits of Nature.....	18
7. Forming a Connection.....	21
8. Bringing Nature Back .....	25
9. The Bronx in Particular.....	28
IV. METHODOLOGY .....	33
V. SURVEY RESULTS .....	36
VI. DISCUSSION.....	42
VII. CONCLUSION .....	45
APPENDICES .....	46
A. Introductory Email .....	46
B. Recruitment Script.....	47
C. Survey Announcement .....	48
D. English Survey .....	49
E. Spanish Survey .....	53
REFERENCES .....	57

**LIST OF FIGURES**

NYC PLAYGROUND CIRCA 1950 .....8

NYC NATURAL EXPLORATION AREA .....28

BRONX WALK-TO-PARK MAP .....32

BRONX NATURAL AREAS MAP .....33

## LIST OF TABLES

1. SURVEY DEMOGRAPHICS .....	37
2. CHILDHOOD VISITS TO BRONX PARKS .....	38
3. LIMITS ON VISITS TO BRONX PARKS.....	38
4. INTERACTIONS WITH NATURE.....	39
5. REFLECTIONS ON INTERACTIONS .....	40
6. INFLUENCE OF INTERACTIONS .....	41
7. NATURE MORE BROADLY .....	42

*Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts.*

-Rachel Carson

## I. INTRODUCTION

I grew up in the Bronx and when I was around five years old my parents would take me to a park with a picnic area. While they sat at a nearby table, I would wander over (a few yards) to a little rock outcropping. It wasn't high or dangerous at all, and if I saw it today I would probably laugh, but for those moments it was *mine*, and it was as thrilling as Mt. Everest to conquer. There was one corner that was sloped and smooth, and I declared it a slide. Cracks and crevices were places to search for insects or treasure. I could leap off of it and land, most of the time successfully, upright on the grass below. Not understanding at the time that this was probably just the tip of deep bedrock scoured clean by glaciers, I attempted to dig under my outcropping to "get to the bottom of it". Those little memories have stuck with me more than any new toy on Christmas morning, or birthday party at McDonald's, or anything else you would think would be the epitome of childhood delight. It was because I was allowed to be alone with my imagination and abilities, forcing my senses to be hyper-aware and searing this experience into memory. I later became an Eagle Scout, then took a job as an Inspector with the New York City Parks Department, and here I am writing my master's thesis about childhood experiences of nature. Did that rock and that handful of early memories *guarantee* such a life-course? Probably not, but there is no question in my mind that moments like these were the little sparks that ignited *something* that still burns in me today.

Wells & Lekies (2006) write of the importance of being fully immersed and engaged in nature in order to have a life-altering impact. But studies also show that humans do not necessarily feel comfortable in the deep woods, where they feel closed in, and prefer nature in

the form of a savanna, where they can take in more of the landscape and see what's coming (Wilson 1984, Ulrich 1993, Milligan & Bingley 2007, Arvay 2018). The nature found in public parks is not so different, with open stretches of lawn punctuated by a few rocks and trees. Being allowed to roam free on my own little rock in a public park, at a time when I was first putting the world in order, contributed greatly to a sense of freedom, a hunger to explore, and a feeling of wonder that sustains me still. Wilson (1984, 65-66) quotes Albert Camus who said, after all, our lives are just a "slow trek to rediscover" those moments in which our "heart first opened". Could an outcropping or stream or patch of greenery in a public park ever be one of those "ecstatic places" that Chawla (1990) describes? I am curious what formative role access to little slices of nature, in an urban environment like the Bronx, might have played in other young people's lives. Can a child have formative experiences with nature in a neighborhood park?

## **II. FRAMEWORK**

I was born and raised in the Bronx and have many happy memories of playing freely in its parks. Climbing rocks and trees, and digging in the grass, were important early opportunities to test myself physically and begin to form a connection with the natural world that has lasted a lifetime. For the past fifteen years I have had the good fortune of working for the New York City Department of Parks and Recreation (NYC Parks), for a division that inspects all of our playgrounds, ballfields, and natural areas for cleanliness and safety. I have had a chance to see firsthand just how vast and varied our park system is. I decided to pursue my master's degree in Geography at Hunter College to study topics that interest me like cartography and the natural history of New York City, and more generally to be exposed to new ways of thinking about the relationships between people and places. Given this background, it felt like a natural fit to merge all of it into a thesis topic. The goals of this thesis are to make a case for the importance of

unstructured play in a natural setting, and, through a survey of Bronx college students, to learn what role public parks may have played in providing formative experiences.

To accomplish this, I surveyed the ever-growing body of literature on children's development and the importance of a connection with the natural world. I begin with the health and environmental consequences of a growing disconnection with the outdoors. From there, I review the history of places set aside for children's play, from the first playgrounds of the late 1800s to today, and assess how concerns about potential injuries influenced the design of modern playgrounds. Balancing that, I discuss the growing interest today in returning some of the freedom and risk to children's play. I focus on why unstructured play is so important to a child's development, address the myriad benefits of spending time in nature, and review the research into ways people can form a lasting connection with the natural world. I conclude this review with a discussion of ways in which cities, and our public parks in particular, can provide opportunities for such connections, and a deeper dive into the Bronx specifically, with a look at the history and distribution of its parkland, and what challenges to access remain.

The next chapter discusses the methodology, the challenges, and the results of the survey that I conducted. The survey was voluntary and anonymous. Through the assistance of faculty, it was administered online to students at CUNY's Hostos and Bronx Community Colleges, both of which are located in the southwest quadrant of the borough and a good distance from any large natural areas. The survey contained 17 questions, beginning with some basic demographics, then about early experiences in Bronx parks, and finally what lasting influence those interactions may have had. Despite efforts to reach as many faculty as possible, response to the survey was low, with only 13 total surveys returned from students between the two colleges. Within that group, however, of the 7 students who visited Bronx parks as children, 6 of

them managed to have memorable interactions with nature, which is encouraging by itself. This group shared the activities that took place, what they liked about them, and how they might have contributed to who they are today. I'll review these results in detail, and discuss what patterns might be suggested by them and how they relate to the broader topic. I'll conclude with suggestions for future research.

### **III. LITERATURE REVIEW**

#### **1. Cause for Concern**

Outdoor play can increase a child's liking of physical activity, and there is wide agreement that outdoor play is important to healthy mental and physical development (Clements 2004, Thompson et al. 2008). Changes in the way we live, however, are leading to a loss of connection with the outside world. More of us live in cities, and we spend more time enjoying sedentary indoor activities like watching TV, browsing the Internet, or playing video games (Soga & Gaston 2016). A Nielson report from 2016 found that adults spend an average of ten hours a day in front of a screen of one kind or another (Weir 2020). Children's play is increasingly confined to bedrooms, basements, and backyards (Thompson et al. 2008). Matthews (1992) notes that children in urban areas who live in tall apartment buildings are even more likely to play indoors.

Today, parents are less likely to have time to go outdoors, and less likely to let their kids play unattended (Louv 2005). Clements (2004) cites one study from Tokyo in 1999 in which 70% of middle-schoolers said watching television was their *favorite* activity. In Clements's own study of 830 mothers nationwide, 70% of them said they played outdoors every day in their youth, compared to only 31% of their children. Parents often say they lived in a more "innocent time" and had more freedom (Thompson et al. 2008). Clements goes on to report that 96% of

these children watch TV regularly and 81% play computer games. While 82% of those mothers said crime and physical dangers like traffic made them worried about allowing children to play outside by themselves, and 77% of them just didn't have sufficient time to spend with them outdoors, they also said electronic distractions at home were the number one reason their children do not play outdoors more (Clements 2004). Studies have shown a correlation between time spent in front of a screen and obesity (Louv 2005).

Interestingly, early playgrounds in New York City came with "parkies", park workers who were there to supervise the children and lead them in activities (a term still in use today to refer to any NYC Parks employee). These days, it is rare for a playground to have any sort of dedicated supervision, which means a parent or older sibling must have the time to *take* a child to the park (Hart 2002). A child's spontaneous desire to run free may have to wait until it fits into someone's schedule.

Thompson et al. (2008) note that Blacks and Hispanics are less likely than Whites to have had outdoor experiences in childhood. In the U.S. and Europe, studies have shown that low income and ethnic minority residents have less access to green spaces and large parks with amenities, and are more likely to be overweight (Evans et al. 2012). Evans notes that lower income individuals get less exercise, and that less exercise leads to increased body mass index (BMI). Adults who live near green spaces, on the other hand, have increased activity levels and lower BMI (Thompson et al. 2008, Evans et al. 2012). After studying over 1,000 children in eight European cities, Evans found that available green space may offer at least an *indirect* pathway to lowering children's BMI, possibly through the influence of parents' healthy lifestyles. But it is also possible that low-income residents are less likely to see natural areas as

places for recreation, as these days wilderness activities (hiking, camping, mountain biking) are dominated by people of means (Thompson et al. 2008).

In the highly influential *Last Child in the Woods*, Richard Louv (2005) coined the oft-cited term, “nature deficit disorder”. He argues that children are losing touch with the natural world, leading to a dulling of their senses and a rise in illness. Louv cites, for example, the alarming rise in the use of anti-depressants on children. Rosin (2014), citing tests of creative thinking, notes that kids today are less creative, expressive, and passionate. Nature deprivation can lead to maladaptation and antisocial behavior (Zelenski & Nisbet 2012). Nabhan & Trimble (1994) warn that many children today miss out on a critical “rite of passage” in nature that could bring connectedness and confidence, and instead develop feelings of separateness and helplessness.

In 1993, Robert Michael Pyle coined the phrase “the extinction of experience” in his landmark book *The Thunder Tree*. He spoke of the loss of direct personal contact with nature and how that can breed apathy. It has been found that adults who do not show an interest in spending time with nature usually had few such positive experiences in their youth (Thompson et al. 2008). Kahn Jr. (2002) fears there is a “generational amnesia” where we slowly lose touch with nature as it becomes more of a stranger to us. What will it mean for the future of our planet if children can’t name, and feel no kinship with, the species around them? People’s *disconnection* with nature may explain how they can behave in ways that are damaging to the environment (Nisbet et al. 2009, Soga & Gaston 2016). Orr (1993) argues that humans have an innate “biophobia”, a desire to control or even destroy nature that eventually manifests itself through urbanization, pollution, the spread of invasive species, and contributions to global warming.

## 2. Early Spaces for Children

There has been a belief over the past two centuries that setting aside parkland and natural areas for recreation can have a restorative effect on people's mental and physical well-being (Ulrich 1993). New York opened the first landscaped public park in the country, Central Park, over 160 years ago in 1858. At the time however, no formal play spaces were set aside for children. In fact, the nation's first public playground for children would not be built for another 45 years. Seward Park, also in New York in a densely populated area of Lower Manhattan, opened in 1903 ([nycgovparks.org](http://nycgovparks.org)). This was the Progressive Era, and reformers wanted to keep children away from the negative influences of the streets and keep them from becoming a menace to society (Hart 2002). At the time, there was not much thought put into the meaning or benefit of play, and Seward Park's main features, a running track and gymnastic equipment, were there simply to provide exercise and use up kids' excess energy.

As waves of new immigrants arrived from the 1930s through the 1950s, and especially with the help of the Works Progress Administration, New York City saw a dramatic increase in playground construction ([nycgovparks.org](http://nycgovparks.org)). As Parks Commissioner, Robert Moses presided over this entire period of expansion. He is credited with building an incredible 660 new playgrounds, not to mention many other parks, pools, and beaches (Ballon & Jackson 2007). He has a complicated legacy, with some scholars branding him a racist who only built parks in White neighborhoods, and others who say he was pragmatic and simply built wherever the city could find land to acquire. His pragmatism certainly influenced the design of his playgrounds. Since they could be replicated easily, he churned out the same asphalt spaces with metal jungle gyms, swings, and slides for *decades*, even though that Progressive Era model was outdated by the 1940s (Ballon & Jackson 2007).

**FIGURE 1: NYC PLAYGROUND CIRCA 1950**



source: <https://www.nycgovparks.org/about/history/playgrounds>

Taking office amidst the turbulence of the 1960s, Mayor John Lindsay placed importance on renovating public spaces to restore a sense of calm, safety, and pride in the city (Hart 2002). Part of this effort was building a handful of imaginative, European-inspired “adventure playgrounds”, with community input, that would break the mold of the classic Moses-era playgrounds that had not been updated in decades (nycgovparks.org). Unfortunately, only a few would be built, and they tended to be in better-funded areas like Central Park. Although I lived in the Bronx, my mother occasionally took me to Central Park’s “Ancient Playground”, just north of the Metropolitan Museum of Art and inspired by its Temple of Dendur. It featured Egyptian-like pyramids with tunnels, an elaborate concrete waterfall, and a Tarzan rope swing between two raised platforms (that, sadly, has since been removed). By the 1970s, New York City was close to bankruptcy and resulting budget cuts led to a severe drop in park staff and maintenance (Hart 2002). Adventure playgrounds also were falling out of favor. Some felt their

offbeat designs were ugly, and parents worried about danger lurking in hidden areas (nycgovparks.org).

### 3. Fear Sets In

The upheaval of the 1960s may have been the end of a certain kind of innocence, and by the 1970s, when I grew up, things were not moving in a happy direction. In New York, in May 1979 when I was six years old, the city was shocked by the abduction of another six-year-old, Etan Patz, who disappeared while walking to school in SoHo. (Later the anniversary of this tragedy became National Missing Children’s Day.) Aided by media frenzy, there was a growing fear of “stranger danger”, and faces of missing children on milk cartons greeted families at breakfast. Letting your child go out alone was not such an easy decision anymore (Louv 2005). In the U.K. in 1971, for example, 80% of third graders walked to school alone, but by 1990 that number had dropped to 9% (Rosin 2014). In reality, abductions by total strangers remained rare, and it was the rise in divorce, and one parent or another running off with a child, that inflated statistics (Rosin 2014). Nevertheless, the increase in divorce and single parent households created an insecurity and loss of trust, and an increased attempt to protect and control children (Rosin 2014).

When it came to playgrounds, the 1970s saw a wave of hysteria, litigation and demands for the removal of unsafe equipment across the country (Hart 2002, Rosin 2014, Barry 2018). Most famously, in Chicago in 1978, a child fell off the top of a slide, hitting his head and resulting in permanent brain damage and a multi-million-dollar lawsuit. Not long after, in 1981, the U.S. Consumer Product Safety Commission (CPSC) issued its first *Public Playground Safety Handbook*. Later codified in more scientific detail by the American Society for Testing and Materials (ASTM), these guidelines lay out precisely the maximum or minimum heights,

lengths, and diameters of every piece of equipment with which a child could come in contact. (I currently serve as the Director of New York City's Parks Inspection Program and as such I'm required to have a thorough familiarity with these standards.)

CPSC/ASTM guidelines specify how much rubber safety surface should surround equipment (a minimum of six feet but much more for swings), where and how far apart barriers should be (gaps must be smaller than 3.5" so the smallest torso can't squeeze through), and, with the exception of swings, forbid any dangling ropes or chains longer than seven inches as they could form a loop around a child's neck. There are rules about the distance between stepping pods, the thickness of a sliding pole, and the steepness of a slide—pages and pages of specifications in small print. The goal was to minimize the risk of serious injury that could result from kids getting their head stuck or their clothing caught, or if they fell off the top of equipment. But all these prohibitions resulted in play units in the 1980s and 1990s (some still around today) that look more like cages that channel children from one set of stairs to one slide and that provide very little excitement or play value. Around the same time, sandboxes, a staple of playgrounds for decades, and one of the few sanctioned ways a child could enjoy digging a hole on public property, were emptied for fear of hidden glass or disease from animals using them as litter boxes.

While these guidelines were meant to be voluntary, and are not federally mandated, they have become law and the standard of care in some states, including California and New York. But paradoxically, the more that municipalities try to manage risk by adopting regulations like these, the more they expose themselves to liability because lawyers can easily point to one tiny piece of the playground that was not maintained to the highest possible standards. Cities, including New York, have been forced to remove equipment because of the threat of multi-

million-dollar lawsuits (Rosin 2014). Because of the strict guidelines and fear of litigation, playground design has become the domain of big companies who can afford the necessary research and development (Hart 2002).

Manufacturers such as Landscape Structures and Playworld Systems offer extensive catalogs of pre-fabricated and compliant equipment with sweeping metal arches, bright colors, and futuristic molded plastic that all look very impressive, that look like money well spent, like a little amusement park (Rosin 2014). With slight variations in layout and color, you are likely to see these exact same designs in playgrounds across the country. To its credit, NYC Parks does work hard to customize designs to fit the history of a site or community wishes, and some play units have elements that hint at, say, a Viking ship or a treehouse, but they are still a far cry from the charm, surprise, and individuality of older adventure playgrounds. Overly-designed playgrounds leave little room for children to supply their own imaginations and create their own adventures.

In reality, most playground injuries are normal cuts and bruises children might sustain playing anywhere, and they tend to be the result of the child's decisions, not a fault of the equipment (Sandseter 2011). In fact, despite all the research and all the new equipment, data from the National Electronic Injury Surveillance System show playground injuries and deaths have not changed much since 1980 (Rosin 2014). There will always be "freak" accidents, but by definition they can't be predicted or prevented.

Ironically, despite, or because of, the restrictive metal barriers on modern play equipment, I often see kids climbing along the outside of the railings or even attempting to get up on the roof. Beyond that, we routinely deal with acts of vandalism in our playgrounds, such as breaking equipment, writing graffiti with markers and spray paint, and even setting things on

fire. Even the youngest children, not meaning any harm, will pull out and rearrange the decorative Belgian blocks incorporated into many of our playgrounds. Young people are determined to manipulate their environment, express themselves, and leave their mark (Cobb 1977).

In grammar school, my favorite challenge was to get a swing going high enough that I could leap off and be propelled through midair to land on top of a nearby brick wall. Thinking about it now and what could have happened gives me chills. But this drive to test our physical boundaries is a necessary part of our evolution (Sandseter 2011). Unfortunately, here in the U.S., at some point “risk” became synonymous with “danger,” and children were to be protected at all costs (Rosin 2014). There is an important distinction here. While a “danger” is a known hazard like a play unit about to collapse or a rotted tree about to fall, allowing “risky” play means allowing children to *choose* to push themselves too far, perhaps by attempting to climb higher or leap further or lift something that is beyond their present ability, and they may well fail and even hurt themselves.

Children *need* to test their abilities, and will find a way to do so no matter how safe you try to make a playground. In fact, without opportunities for risky play, where children can overcome their fears, those fears may continue throughout their lives or even become anxiety disorders (Sandseter 2011). When children run fast, use their coordination, climb up high, hide somewhere, wrestle with each other or use tools to manipulate their environment, they are learning essential survival skills and this has an important anti-phobic effect (Sandseter 2011).

#### **4. Bringing Risk Back**

World War II was a time of harsh realities when children needed to be, above all, survivors. The first official “junk playground” may have started in Nazi-occupied Denmark in

1943 (Walker 2016), and the “adventure playground” movement got its start in the U.K. around the same time (Rosin 2014). The concept has since spread throughout Europe. In her 2014 *Atlantic* article “The Overprotected Kid”, Rosin describes one such junk playground called “The Land” that started in Wales in 2006. It is filled with bits of wood, old tires, and dirty mattresses, and children are more or less free to construct or deconstruct as they see fit. They are never out of the watchful eye of an adult, but those adults rarely intervene unless there is true danger.

The spirit of early adventure playgrounds has made its way into European schools. Barry (2018) describes how some primary/nursery school educators in Britain are “bringing back risk” into children’s play. Instead of organized games and activities, children play outside in an unstructured (but supervised) environment that features sand, rocks, bricks, wood and even fire. Tools such as hammers and saws are available for children to use, allowing them to directly manipulate their environment, and learn what is and isn’t a good idea as they go along. This is the direct opposite of “sterilized” play where everything a child comes in contact with must be clean, smooth, and safe. Today’s cleaning product commercials would have parents believe that every surface of their home, and everything their child might touch, needs to be constantly disinfected. The world is not clean, smooth, and safe, so it does no good to set up that preconception in children’s minds (Rosin 2014). After all, you only have to learn *once* not to touch that bush with the thorns on it (Barry 2018).

Barry notes that European public playgrounds, with parental understanding and consent, also are bringing back more of the “risk”, and some countries are actively weighing the developmental *benefits* of new playground equipment and designs, and not just their legal liability. He cites a Rand Corporation study that found that playgrounds in England have more natural elements and more direct physical interaction than American playgrounds.

Unfortunately, Barry notes that one key difference when it comes to personal injury is that in the United States people have to sue entities to recover medical expenses, and juries can award millions, whereas in many European countries, healthcare is already universal and free. In a way, those governments and taxpayers are paying up front to offset the future costs of riskier playgrounds. Louv (2005) and others have pointed to the desperate need for tort reform in this country.

One sign of shifting attitudes in this country was the publication of R.C. Moore's *National Guidelines: Nature Play and Learning Places* in 2014. Play areas with natural elements and "loose parts" slowly are being set aside for children. According to Rosin (2014), here in the U.S. there is a growing interest in European-style "forest kindergartens". In New York City, we do have a junk playground, independently managed on Governor's Island, outside the jurisdiction of the city's Parks Department. It is called "The Yard" and features piles of dirt, plywood, tires, logs, plastic tubing, broken bikes and boats, and of course tools for cutting and hammering. Like "The Land", it is staffed by play workers trained to subtly intervene or suggest without ever controlling. One reason for the hands-off approach, staff will tell you, is that unlike formal school exercises, at The Yard, lessons like communication and collaboration happen effortlessly (Walker 2016).

Milligan & Bingley (2007), concerned about the rise in mental health problems in the U.K., conducted a survey of young adults to learn about their *current* relationship to natural spaces. They revealed that while parents can play an important role introducing and reinforcing the benefits of nature, they also can transfer their anxieties about their own lives, or about nature in particular, onto their children, who might benefit from time to themselves (Crain 2003).

## 5. The Importance of Free Play

All too often these days, recreation for children takes the form of structured activities like afterschool programs and sports (Clements 2004, Soga & Gaston 2016). Parents race around, taking their children from art classes to dance lessons to Little League. These programs are attractive because they are supervised, and take place at specific times that can be worked into a parent's already busy schedule. There is nothing wrong with parents wanting their children to get exercise, to socialize, to learn healthy competition, and to be exposed to new things like music or swimming to see if an interest will take hold. However, spending too much time in the company of adults can result in a loss of self-reliance (Rosin 2014). Children are left with precious little time to just "be kids", explore their world, and develop a separate sense of themselves. Hart (2002) believes that play is a basic right of all young people.

According to Crain (2003) part of the problem is society's focus on children's "futures". Parents obsess about getting their kids into the "right" kindergarten, and continue to drive teachers crazy over any poor grades that they imagine might doom their child to a life of failure. Crain says this messaging comes from the highest levels, with the federal government referring to children as a "precious resource" and tying the nation's survival to their performance on standardized tests.

Writing on the benefits of nature for children, Chawla (2015) describes the untamed places, free from adults and rules, that children can take ownership of and "colonize". Essential to this is the ability to *manipulate* one's environment. When a child digs in the soil for worms, or dams up a stream with rocks, or builds a shelter with logs, or collects insects in a jar, he learns that he can have an influence on, and can make a change to, his own environment, and that there is a power in his actions (Kellert 2002). Play is about continually modifying and adapting your

world (Cobb 1977, Nabhan & Trimble 1994, Hart 2002). And nature is like a laboratory with an endless supply of materials and scenarios, where children can conduct experiments to their heart's content. They get instant feedback on what works (flat rocks hold back the water better) and what doesn't work (my log shelter collapsed because I didn't support it sufficiently) and they can keep trying. As Chawla (2007, 153-155) eloquently puts it, "nature is particularly rich in responsive affordances" and provides "a world that is inexhaustively new".

Unlike a playground with a finite set of built-in challenges, in the natural environment children can invent ever more difficult tasks or set new destinations or goals as they become confident in their abilities (Pyle 1993, Chawla 2007). Wilson (1984) notes that we are much more biologically attracted towards the natural, diverse, and unpredictable, as opposed to machines and order, because they result in a higher quality of experience. Conversely, flat spaces provide a poorer quality of exercise compared to natural settings (Louv 2005), and asphalt expanses with few options, including many schoolyards, can be stressful, and can lead to competition and fighting (Nabhan & Trimble 1994). A dozen studies have shown that, when left on their own to "free play" in nature, children are more likely to invent projects that are constructive and require cooperation (Crain 2003, Chawla 2015). Building a fort, or a treehouse, or a bridge over a stream, becomes a group effort, requiring teamwork, and any ideas for making it bigger, taller, or "cooler" are met with enthusiasm. Allowing children to freely play in nature also can subvert traditional gender roles (Nabhan & Trimble 1994).

Equally critical is the importance of allowing children to explore at *their own pace*. According to Crain (2003), we must learn to trust that there is a method to a child's slow, deliberate pace of exploration that cannot be rushed. He shares a story about taking his young daughter to the Bronx Zoo, and how she was much more fascinated by a bug crawling along the

path than the elaborate animal exhibits around her. Children do not always need formal “lessons”; they learn just by *being* in nature (Carson 1956), and the tiny things right in front of them (Crain 2003, Louv 2005).

Unfortunately, children do not all share the same freedom of movement. “Cognitive maps” are not maps describing physical layout and boundaries, but rather a child’s perception of how they can move about and survive in the world (Matthews 1992, Chawla & Salvadori 2003). Matthews (1992) notes that “socio-psychological barriers” in children’s mental maps can be as restricting as physical ones. A child’s range of movement can be limited by his parents and his surroundings. How far is he allowed to travel? What dangers, like crime or traffic, might he encounter along the way? In his pioneering 1979 study, *Children’s Experience of Place*, Roger Hart spent time directly with children to learn about the places that were special to them. For example, instinctively, when they’re outside, children love finding and building their own little shelters (Crain 2003). But there is a conflict between children’s free range, which is limited by their own and their parents’ fears, and their innate drive to explore and thereby reduce those fears (Hart 1979). Children need space to learn what *not* to fear (Nabhan & Trimble 1994).

Because of these factors, children living in the exact same environment can have very different perceived boundaries (Hart 1979). Culturally, boys have been given more freedom to explore and tend to travel farther from home, whereas girls get to know individual spaces more intimately (Nabhan & Trimble 1994, Chawla & Salvadori 2003). However, Nabhan & Trimble go on to note that girls tend to be more appreciative of the connections, rather than the distinctions, between things. Children who walk to school are more likely to have a greater knowledge of the details in between and connect them into a “big picture” than children who are driven every day. Matthews (1992) notes that the mental maps of children in disadvantaged

neighborhoods can be smaller in range and lacking in detail when compared to children of means. Range of movement is critical to enriching children's experiences and allowing them to map the larger environment (Matthews 1992, Chawla & Salvadori 2003).

There is a special awareness and alertness that kicks in when we find ourselves in a new place and do not quite have our bearings (Arvey 2018). For a young child, *everywhere* new presents this possibility. We can still relate to this experience today when we go on vacation, especially to a wild or exotic place. Personally, I am still drawn to the high of that feeling of aliveness (and mild danger) when I do not know what is going to happen next, or what is around that corner, and I must fend for myself and figure things out. It is so primordially satisfying. (Interestingly, my wife, who had significantly less freedom of movement and encouragement in her childhood, does not find this amusing, and prefers a careful plan and minimum of surprises.)

## **6. The Benefits of Nature**

As infants, we are born into a natural ecosystem and our "ecological selves" need nurturing and should not be deprived of this connection (Barrows 1995). It is when we see ourselves or our children as wholly separate from nature that we do harm. Rather, each life should be seen as a "porous, permeable, sensitive essence" inseparable from those around it (Barrows 1995, 110). In 1984, the eminent biologist E.O. Wilson published his seminal work *Biophilia*. He argues that humans are *born* with an innate love for and connection to nature, especially living things. There is an unbroken chain of energy that flows through all creatures. Additionally, Ulrich (1993) suggests we might be biologically inclined to *seek out* restoration in nature.

The amount of research on the benefits of nature is quite extensive, and as I write this there are likely new books and articles being published. Nature can make us happy, healthy,

relaxed, and productive (Kahn Jr. 2002). Kellert (2002) notes that early contact with nature plays an important role in our emotional development and can instill enthusiasm and passion. Nature has the power to stimulate all of our senses and leave lasting positive impressions (Carson 1956). Think of those times when a particular smell, after many decades, *instantly* transports you to some happy childhood memory. Cobb (1977) writes of magical, transformative moments of “elation” in childhood. Unlike a predesigned playground, only nature can deliver true “surprise” (Pyle 1993).

Studies show that exposure to greenery improves alertness and cognition (Schertz & Berman 2019, Weir 2020). Nature has softer edges and soothing sounds, which might mean there are fewer stimuli forcing us to stay alert and keep processing, leaving us with more capacity for reflection (Schertz & Berman 2019). The Japanese practice of “shinrin yoku” (forest bathing) involves walking through the woods and letting the sights, sounds, and smells wash over you. Arvay (2018), delving into the actual chemistry of biophilia, notes that terpenes, the compounds that trees emit when “talking” to each other, seem to stimulate our own immune systems. Perhaps there *is* a universal language among living things. Hart (1979) notes that children can be particularly engaged by water elements such as streams and ponds, and Weir (2020) suggests that time spent in nature’s “blue spaces”, such as a stroll along the beach, can be just as restorative as a hike in the woods.

Nature has short- and long-term health benefits, including lowering the risk of diabetes and heart disease (Soga & Gaston 2016). Time spent in nature also can lower the risk of future mood, eating and substance abuse disorders (Weir 2020). Studies show a strong link between “connectedness” and happiness (Zelenski & Nisbet 2012). People can benefit from daily doses of green space (“vitamin G”) all their lives.

Nature can inspire the imagination of creative types as much as budding environmentalists (Ulrich 1993, Chawla 2015). Nature can relieve stress and anxiety, and studies have shown that the less stressed we feel, the more we can concentrate on the task at hand (Kellert 1993, Arvay 2018). That task might be writing or taking a test or some other intellectual pursuit, but might be, as other studies have shown, recuperating in a hospital, or reflecting on your mistakes while incarcerated (Ulrich 1993, Kahn Jr. 2002). For similar reasons, spending time in nature also has proven effective for children with attention deficit hyperactivity disorder (Crain 2003, Louv 2005, Arvay 2018).

Weir (2020) cites studies that show that exposure to green spaces can even make us more cooperative. Awe in the face of nature can have a humbling power, reminding us that we are only *part* of a whole (Cobb 1977). I am sometimes overcome with joy when I witness or read about an act of kindness. It is as if in those moments, I'm catching a glimpse of humanity's true alignment. We are all creatures of this same earth, and spending time in nature helps to *reorient* us.

Unlike advertisements and social media that exert enormous pressure on the self-image of young people, in the chaos of nature there is an acceptance of the *imperfect* (Arvay 2018). Developing an early appreciation for the importance and diversity of all lifeforms strengthens a child's own feeling of validity in the world (Nabhan & Trimble 1994). The ideal, according to Cobb (1977), is to nurture in them a "compassionate intelligence". It changes your world completely, and raises entirely new questions, if you accept that as humans, we are just one small part of nature.

Children feel a strong affinity for animals and playing among them can foster empathy and respect for diversity (Nabhan & Trimble 1994, Crain 2003, Sandseter 2011). For Wilson

(1984, 19-22), “every species is a magic well”, and knowing them “elevates the very concept of life”. One study found that children up to age seven dream about animals 38% of the time (Crain 2003). In their work with young people, Milligan & Bingley (2007) note we also have an emotional response to trees, perhaps because they are steady and sturdy in an otherwise changing and uncertain world. Children often ascribe human traits to trees and talk of them as having feelings and rights, and this empathy, like that for animals, while born in innocence, is one that should be nurtured for life (Pyle 1993, Gebhard et al. 2003, Milligan & Bingley 2007).

Nisbet et al. (2009) introduce the concept of “nature relatedness” as a factor in behavior and notes that there is a difference between *fondness* for nature, that many exhibit in some form or another, and a deeper connection that leads to actively *protecting* it. When someone feels a relatedness to nature, they understand their position within, and connection to, all living things around them. They are a part of nature and not just a spectator. This has been described as an “eudemonic” well-being that comes from having a meaningful purpose in life (Weir 2020). The more you feel connected, the more environmental abuses pain you and motivate you to action.

## **7. Forming a Connection**

Chawla & Salvadori (2003) argue that children are a “bridge” to a sustainable future. If we do not instill the right values in them now, at this formative point in their lives, who will care for the planet when we are gone? As we destroy our environment, we destroy the “wellsprings” children use to form these values (Kahn Jr. 2002, Kellert 2002).

Chawla (1998) reviews early efforts to understand the motivations behind environmental concern and action. She describes Tom Tanner’s pioneering work in 1980 on “significant life experiences” (SLE’s). He surveyed environmentalists and discovered that early moments alone, or perhaps with a group of friends, in nature had a significant impact on their future attitudes

toward the environment. He was looking for patterns of influence that might be replicated with the young. In the early 1990s Joy Palmer found similar results in her research, as did Chawla who has written extensively on the subject for decades. In an approach similar to Tanner, Chawla (1990) reviewed 38 autobiographies of people from different fields, looking for patterns of special places and moments recalled from childhood. Similar to Cobb's "moments of elation", Chawla describes "ecstatic places" that can leave a lasting impression, and that these places can be small bits of nature close to home. Wilson (1984) writes of how he still "summons" his childhood patience and wonder whenever he needs it in his adult pursuits.

While much research pointed to a link between childhood experiences and future attitudes and behavior, Chawla (2007) was interested in the *mechanisms* by which these experiences have "sticking power". What special qualities were present that ensured a continuing influence? She emphasizes the importance of *first-hand* experience. "Secondary experiences" like books, videos and lectures may be interesting and even inspiring, but there is no substitute for the three-dimensional and multi-sensory environment of the real world. It is more effective to *stir* people's emotions than to dictate to them (Nisbet et al. 2009).

Equally important to ensure a successful bond with nature, according to at least 30 studies, is a strong parental or other mentoring influence (Nabhan & Trimble 1994, Chawla 2015). As much as has been said thus far about giving children "alone time" free from structure and adult instructions, parents can play a critical role by both ensuring that they have such experiences in the first place, and engaging them about those experiences afterwards. Around five to seven years of age, children experience a shift from "creative" to "rational" thinking (Crain 2003). This suggests a limited window of opportunity to truly nurture their imaginations. Parents, who need not be experts, but who actively encourage their children's interest in nature

and do their best to name animals and plants when asked, help reinforce that these are good interests and worthy of everybody's time (Carson 1956, Kals et al. 1999).

As concern grew over China's serious environmental problems, Li & Chen (2015) surveyed "environmentally minded" college students to discover their early influences. Fully half of them said their emotional affinity began as early as 1-7 years of age. They also cited natural experiences and involvement in organizations as the most significant factors. After reviewing the research on SLE's thus far, Chawla (1998) concluded that children's future environmental attitudes are shaped by multiple, positive, reinforcing experiences early in life and exposure to negative stories of environmental abuse. What seems to be key is the formation of a special bond with nature early in life, recognizing the earth as a living entity (Kellert 2002) and perhaps even a friend, and thus taking any mistreatment of it personally and feeling compelled to defend it. Wilson (1984), himself an example, notes that our early loves and obsessions can remain a guiding force.

Others confirm that some combination of experiences, education, parental influence and news of environmental disasters leads to a greater connection and motivation later in life (Kals et al. 1999, Ewert et al. 2005). Since reinforcement seems to be key, Li & Chen (2015) go on to recommend that environmental education be a lifelong process. Still, a child's relationship to nature can be tenuous and further influenced positively or negatively by society (Milligan & Bingley 2007, Collado et al. 2015).

But how "natural" does an experience have to be? Wells & Lekies (2006) set out to find what types of experiences set children on life-courses of concern and action. They found that early exposure to "wild nature" left a strong impression that influenced both future beliefs and actions. More "domesticated" pursuits like gardening or reading about nature might have given

their opinions but were not enough to change their behavior. The difference, they argue, is that children need to be “fully engaged”. It is much easier for a child to learn and feel fulfillment from physical experiences (Hart 1979). Formal nature education in classrooms was not, by itself, a strong predictor of future environmental action (Wells & Lekies 2006). You can have a scientific interest in nature without feeling an emotional affinity (Kals et al. 1999). On the other hand, there also are those sympathetic personalities out there that can be moved to support *any* cause if properly motivated.

Interestingly, those living on farms or other rural areas do not necessarily have different attitudes or easier access to nature play (Collado et al. 2015). A farm full of crops and animals may be an idyllic escape for a city dweller, but those who grew up there associate it with long hours of tiring work. A child in a big city might actually have easier access to a quality playground or hiking trails than a child in a remote rural area who cannot easily walk to any places on her own. Even as adults, time spent *working* outdoors and/or living in a rural area does not always correlate with an affinity for nature (Collado et al. 2015), suggesting that the type and quality of experience play an important formative role. Collado goes on to note that people living in urban areas sometimes exhibit a *greater* concern for the environment. Perhaps, being further removed, natural areas are seen as special or sacred places more in need of protection. But, because of this separation, children in urban areas can develop misconceptions about nature, seeing it as gross or scary, and these feelings can amplify over time (Collado et al. 2015).

Ewert et al. (2005) also note the importance of “place attachment”. People can feel a stronger bond with nature if they think back to a specific area, however small, that had special meaning for them. For Pyle (1993), who later became a biologist and noted nature writer, that special place was an old irrigation canal that ran by his home on the outskirts of Denver. Having

the freedom in his childhood to follow its meanderings sent him on a course of lifelong discovery.

As noted earlier, parents can play an important role by ensuring that nature is a part of their children's lives. Wilson (1984) and Barrows (1995) suggest we are born inseparable from the ecosystems around us, and it is in our DNA to stay connected to them. But genes work in context, and children need a world in which those traits can flourish. Even if a child just plants a seed in a pot in a windowsill (a supposedly "domesticated" pursuit), she might be planting a much greater and long-lasting seed of wonder and curiosity (Carson 1956). In fact, if you could see through a microscope the complex interactions of millions of microorganisms, you would realize there is an entire world in a handful of soil (Wilson 1984). It is the sense of wonder that is the first step towards knowledge, which leads to more wonder and a never-ending cycle of exploration (Cobb 1977, Wilson 1984, Kellert 1993, 2002).

## **8. Bringing Nature Back**

Pyle was lucky to have access to a bit of untamed, pre-suburban "wilderness". Cities may redevelop land in the name of progress, but this does not necessarily result in increased access or opportunities for children, and may well result in even more restrictions (Hart 2002). Housing subdivisions, while ensuring a safe and orderly existence for adults, can come with strict rules about the appearance and use of any greenery. Children or teenagers hanging out in the woods, who could start a fire, or divert a stream and cause a flood, are seen as a threat to their own or others' safety (Louv 2005, Thompson et al. 2008). Many of New York City's smaller neighborhood parks, ostensibly built to bring a little nature into people's lives, surround a portion of their lawns and plantings with fences to keep patrons from trampling them. In some cases, the entire park or playground is surrounded by a high chain link or wrought iron fence. While

discouraging undesirable activity at night, high walls or fences also create a separation between the green space and the surrounding community. The city's *Parks Without Borders* initiative attempts to address this by redesigning park edges to make them more welcoming and integrated into the neighborhood (nycgovparks.org).

It is essential to provide safe, traffic-free routes so children and their families can connect with nearby green spaces (Kellert 1993). Matthews (1992) argues that even the most thoughtfully designed playground is still a segregated space, built for the convenience of adults. Ideally, public spaces or housing developments should set aside little patches of wild nature or running water that help people of all ages feel connected, contribute to their well-being, and let little moments of magic happen (Chawla & Salvadori 2003, Soga & Gaston 2016).

Here in New York City, our combination of hardscape and an outdated drainage system results in heavy rainfall overwhelming treatment plants and sending sewage straight into our rivers. To mitigate this, the Department of Environmental Protection (DEP) has been building “bioswales” throughout the city, little plantings along street edges that divert and retain some of the storm runoff. Whereas older asphalt paths and ballfields channeled water into drains as efficiently as possible, newer park designs incorporate DEP-funded greenery called “rain gardens” to capture this water, in some cases even bringing it in from the street outside. What may have started as a practical need to protect our waterways (and avoid fines from the Environmental Protection Agency) has resulted in tiny corrective returns to nature in our public parks. Instead of mowing all lawns to a uniform height, some parts of our parks are now being left to grow as meadows, reducing the need for herbicide and other maintenance, and encouraging biodiversity. A few parks even have dedicated “pollinator gardens” to provide safe habitat for these species. I am also happy to report that sand, and even play tables for mixing it

with water, is making a comeback in our playgrounds. These efforts, while helping to address important issues, also help reverse the legacy of Moses-era designs and bring a bit of wilder nature back into people's lives.

Of course, the New York City park system does include large stretches of wild nature. Approximately 10,000 acres out of 29,000 total acres of parkland are forests, wetlands, or meadows ([nycgovparks.org](http://nycgovparks.org)). One-hundred thirty-five parks across the city have some or all of the land set aside as "Forever Wild", and the agency's Natural Resources Group, a team of biologists, ecologists and cartographers, works to protect them. They partner with the Natural Areas Conservancy, a not-for-profit that helps maintain the city's forests and coasts with an eye towards resiliency ([naturalareasnyc.org](http://naturalareasnyc.org)). Guiding people into these natural areas are the city's Urban Park Rangers, who maintain exhibits in nature centers in each borough and lead programs like nature walks, wildlife photography, and camping and survival skills throughout the year.

Despite very real maintenance and liability concerns, NYC Parks also has experimented with "free play" in a few locations. With design assistance from The Rockwell Group, the city opened "Imagination Playgrounds" in Lower Manhattan in 2009 and Brownsville in 2016 ([nycgovparks.org](http://nycgovparks.org)). They feature sand and running water and, more importantly, "loose parts" in the form of foam blocks of different shapes that staff distribute, and kids turn into forts or waterfalls or whatever their creativity and teamwork can dream up. Elsewhere in Brooklyn, in Prospect Park, the "Donald and Barbara Zucker Natural Exploration Area," cautiously not classified as a playground, was created in 2013 and features logs and other natural materials as its loose parts. There are plans to expand natural exploration areas to other areas of the city.

**FIGURE 2: NYC NATURAL EXPLORATION AREA**



source: [https://static.mommypoppins.com/styles/image620x420/s3/zucker\\_playground\\_img\\_0912-1024x768\\_0.jpg](https://static.mommypoppins.com/styles/image620x420/s3/zucker_playground_img_0912-1024x768_0.jpg)

Obviously, not every part of New York City can be returned to its natural state, and in any city, there will always be *some* inequities in the distribution of green space. The city estimates that just under 82% of residents live within “walking distance” of a park, which is defined as 1/4 mile for small neighborhood parks and other “open space resources”, and 1/2 mile for larger parks with more amenities and pools (nycgovparks.org). While 82% sounds fairly impressive, it also means about a million and a half city residents currently *do not* have easy access to healthy open space. As part of its “OneNYC” initiative, the city has set a goal of increasing access to 85% by 2030.

## **9. The Bronx in Particular**

According to NYC Parks (nycgovparks.org), as of June 2020, there were 399 separate park properties totaling 7,103 acres in the Bronx. With a total borough acreage of 36,480, this means about 19.5% of the Bronx is parkland of one kind or another. By contrast, even with massive Central Park, Manhattan’s percentage of parkland is around 13.6%. With the relatively

recent addition of Fresh Kills Park, Staten Island has slightly overtaken the Bronx as the leader in percentage of parkland, at just over 20%. The Bronx, however, still boasts the largest single park in the city, Pelham Bay, at 2,765 acres. Central Park, by contrast, is about 70% smaller, at only 843 acres. Additionally, at 1,146 acres, Van Cortland Park in the Bronx is the city's third largest park and contains substantial forested areas with hiking trails.

The Bronx's generous proportion of parkland can be traced back to 1895. City planners, concerned about the rapid growth of Manhattan and the possibility of similar greedy real estate speculation and overcrowding in the Bronx, set aside just under 4,000 acres to create Van Cortlandt, Pelham Bay, Bronx, Crotona, Claremont and St. Mary's Parks (Jonnes 1986). These parks were primarily in the less-developed north and east portions of the borough, and were consolidations of the former estates of families such as Lorillard, Bartow, Morris, and of course the Van Cortlandts (Gonzalez 2004). Hoping to relieve the city's unhealthy congestion, the New York Park Association touted these new green spaces as "lungs for the Metropolis" in their public relations campaign (Gonzalez 2004). Bronx Park would go on to include the renowned New York Botanical Garden and Bronx Zoo. To connect the largest parks, the Mosholu, Pelham, and Crotona parkways were built, and today these also serve as important parkland for local residents.

Between the 1920s and 1940s, the Bronx would indeed see a rapid urbanization, as waves of immigrants took advantage of newly extended subway lines and spacious new apartment buildings (Gonzalez 2004). Later, the post-war boom would bring further changes to the borough's housing and demographics. In the 1950s, many blocks of older apartment buildings and single family homes were torn down to make room for tall housing projects, especially in the South Bronx. Unlike older tenements, these new buildings offered modernity, fresh air and

greenery, but their design led to a disconnection from the surrounding neighborhood and a loss of vibrant street life (Jonnes 1986). In the 1960s and 1970s, as Whites fled to the suburbs or to Co-op City in the northeast Bronx, poorer Blacks and Hispanics, some displaced by urban renewal elsewhere, took their place, becoming two-thirds of the population by 1980 (Gonzalez 2004). According to the latest census, the Bronx's population of 1.4 million is 44% Black/African American, 9% White non-Hispanic, and 56% identify as Hispanic/Latino. Over one-fourth of its residents (26%) are below the poverty line, as compared to the New York City average of just under 18%. The Bronx also has a higher proportion of persons under 18 years of age, approaching 25%, compared to New York City as a whole at just under 21% (census.gov).

Also undermining the connections between neighborhoods (and access to parks) during the post-war period was the construction of several expressways. Most infamously, the Cross Bronx, built between 1948 and 1963, cut a seven-mile gash through the center of the borough and displaced tens of thousands of families, especially in the Bathgate, East Tremont, and West Farms neighborhoods (Jonnes 1986, Ballon & Jackson 2007). The Deegan, Sheridan, and Bruckner Expressways were being built elsewhere in the borough at the same time. Unlike earlier parks and parkways, these expressways were designed for the efficient movement of commercial and commuter traffic *through* the borough, with little or no provisions for greenery (Ballon & Jackson 2007). Of course, the other boroughs were not immune to the building of highways that disfigured their neighborhoods, with the Brooklyn-Queens Expressway being a notable example.

While expressways like the Deegan and Bruckner provide other residents of the city quick access to parks like Van Cortlandt and Pelham Bay, which includes Orchard Beach, they also create physical obstacles for pedestrians. For example, a hiker traveling the full length or

width of Van Cortlandt Park will encounter, and possibly have to detour around, some combination of the Saw Mill and Mosholu Parkways and the Deegan Expressway, all of which run straight through, and have intersections within, the heart of the park. While not bisecting parks as severely, the Bruckner Expressway along Pelham Bay Park, the Bronx River Parkway within Bronx Park, and the Cross Bronx Expressway just north of Claremont and Crotona Parks also create challenges, not to mention noise and air pollution, for local residents. Access to large, unbroken green spaces can be difficult in other boroughs as well. For example, Flushing Meadows-Corona Park, in a densely-populated section of Queens, is squeezed between the Grand Central Parkway and Van Wyck Expressway, and has the Long Island Expressway running straight through it. In one positive development, the Bronx' Sheridan Expressway, which was never fully completed, has been decommissioned and turned into a tree-lined boulevard, with crosswalks providing local residents with safe access to Starlight and Concrete Plant Parks along the Bronx River, themselves reclamations of former industrial land.

Figure 3, a map produced by NYC Parks and posted to its public website, shows the neighborhoods of the Bronx, the parks and playgrounds (dark green), and the  $\frac{1}{4}$  mile or  $\frac{1}{2}$  mile "walking distance" buffers around them (light green). The areas left over in white are the ones that do not have parkland within easy walking distance per NYC Parks' definition. Notably, the majority of those areas are located in lower-density, middle class or affluent areas such as Morris Park, Throgs Neck, Williamsbridge, Co-op City and Riverdale. One could make a reasonable assumption that these residents are more likely to own cars or otherwise have the means to travel farther for recreation, although young people would have fewer options on their own.

**FIGURE 3: BRONX WALK-TO-PARK MAP**

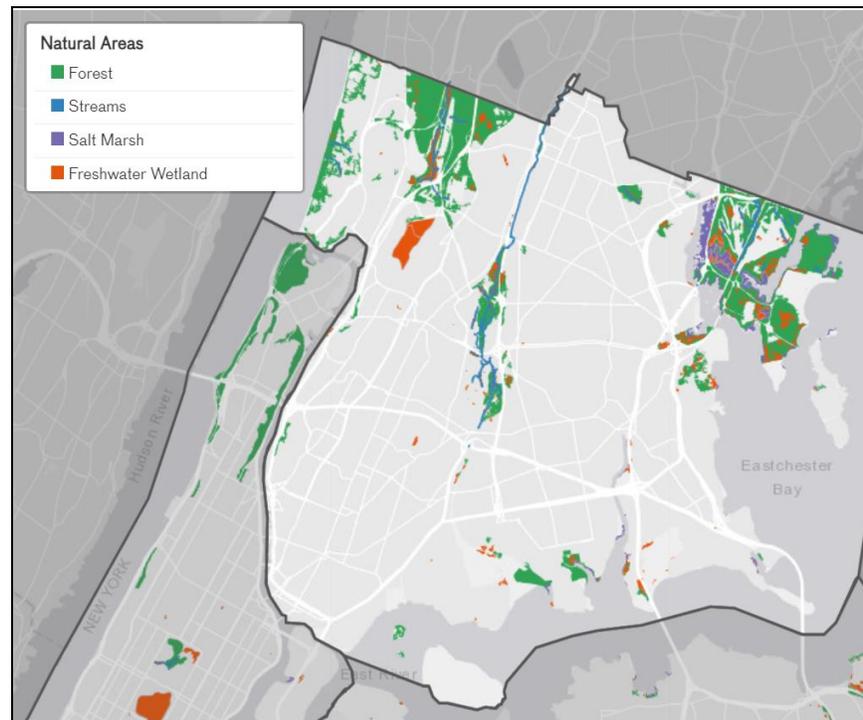


source: [https://www.nycgovparks.org/pagefiles/130/Walk-To-A-Park-bx\\_\\_5b75adfc380c4.pdf](https://www.nycgovparks.org/pagefiles/130/Walk-To-A-Park-bx__5b75adfc380c4.pdf)

It also should be noted that, while some areas like Fordham, Morrisania or Parkchester appear to be well-served in terms of walking distance, this is largely due to an abundance of small neighborhood parks and playgrounds. These properties, while offering play equipment, handball and basketball courts, sitting areas, and some trees and landscaping, are not likely to have wilder natural areas. Figure 4, a map produced by the Natural Areas Conservancy, shows the distribution of forests and wetlands in the Bronx, almost all of which are in the northern half of the borough and a legacy of those same large parcels wisely set aside in 1895. The only exceptions are a handful of smaller natural areas closer to Long Island Sound in the Soundview and Clason Point neighborhoods. If, however, we include more landscaped stretches of

parkland, large enough to make one feel transported from the surrounding streets, then medium-sized Crotona, Claremont, and St. Mary's in the South Bronx would qualify. Larger natural areas are not evenly distributed in the borough, and well out of walking range for many residents.

**FIGURE 4: BRONX NATURAL AREAS MAP**



source: <https://naturalareasnyc.org/map>

#### **IV. METHODOLOGY**

To support the theory that public parks in an urban environment like the Bronx can provide enjoyable, memorable, and formative interactions with nature, I conducted a survey of college students in that borough. Unlike some of the research discussed earlier, the purpose of this study was not to tie together early experiences and environmental activism, specifically, but rather to discover whether such positive experiences are possible at all in this setting. College students would be old enough to articulate about their experiences and attitudes, while not being

too far removed from those experiences in a way that would make recalling them difficult or less trustworthy.

Prior to administering the survey, in late September 2021 I submitted the goals of the study, the methods that would be used, and copies of the actual survey, recruitment and consent documents to the Hunter College Institutional Review Board (IRB) using its new IRB Manager platform. After making a few minor but necessary edits to the protocol, it was approved in late October 2021, with a determination that it qualified for exemption based on the limited and anonymous data it would be collecting. Arita Winter-Potter of Hunter College IRB graciously made introductions between me and the Human Research Protection Coordinators at the research sites. The coordinator at Bronx Community College replied quickly with his approval in early November 2021. The coordinator at Hostos Community College requested additional details including the IRB approval letter, further information about the study, and any relevant consent documents, which were all provided. After reviewing with the Provost, permission to proceed at Hostos Community College was granted in the second week of November.

While there are other colleges in the borough, such as The College of Mount Saint Vincent, Manhattan College, and Fordham University, as well as another CUNY location at Lehman College, I reasoned that these two community colleges were more likely to have a majority of students who actually grew up in the Bronx. It was also my hope that being a researcher from another CUNY institution, Hunter College, would simplify and facilitate the administration of such a survey. Similarly, while it may be interesting to someday study the geography of park usership, I chose to make this survey anonymous to simplify permissions and record keeping, to increase chances of participation, and because it was evidence of experiences in *any* of these parks that I was hoping to capture.

The survey began with brief consent language informing students of the purpose of the study, that it is entirely independent of the student's classes and instructors, that it is voluntary and anonymous, and that it should take no more than 10 minutes to complete. Once the student agreed, they were presented with 17 questions (see Appendices D and E for full text). Questions 1-5 were basic demographics such as their college, gender, age group and ethnicity. Questions 6-11 were about the frequency of visits to parks in the Bronx in their youth, and what interactions with nature took place. Finally, questions 12-17 explored how they felt about these experiences and what influence they may have had on their attitudes or behavior today. Each question was multiple-choice, although some included an option for writing in one or more alternate responses. The questions were presented one at a time, and students had the option of skipping any questions they did not want to answer. Students could go back and review their answers before submitting.

The survey was administered using SurveyMonkey, a popular and reputable online platform in use for many academic and business purposes. A standard student monthly subscription allows for the creation of unlimited surveys with unlimited questions, and a maximum of 1,000 responses per month, more than sufficient for this study. Since there are a large number of Spanish-speaking students at these two colleges, the survey, including consent language, was translated into Spanish with the gracious assistance of Ramiro Campos at Hunter College. Students were given the option of completing the survey in English or Spanish, and every effort was made to ensure the order and meaning of the questions were otherwise identical.

There were, however, some differences in how the survey was distributed at the two colleges. For Bronx Community College, I used the faculty directory on their public website to identify just over 50 names of professors in the Earth Science, English, and World Languages &

Cultures departments. No attempt was made to target only those students whose majors suggested an interest in the environment, but rather it was hoped that some of these professors were teaching larger, core curriculum classes and that would result in a large and diverse response. The professors received an introductory email from my advisor, Professor Ines Miyares, explaining and supporting the research. An attachment to the email included the recruitment script to be read by the professor to the class, the announcement about the survey to be forwarded as an email or posted on Blackboard, and web links to the English and Spanish versions of the survey. One professor in the English department responded positively by email and agreed to administer the survey to her students. At Hostos Community College, the HRPP coordinator instructed that he would reach out to faculty and provide names of those who expressed interest and to whom I could send the survey materials. Over the course of approximately two weeks, only one faculty member's name was provided, a professor in the Natural Sciences department. He was sent the introductory email and recruitment document.

## **V. SURVEY RESULTS**

A total of 13 surveys were received, 5 from Hostos Community College and 8 from Bronx Community College, including 1 survey taken in Spanish. Considerably more women (10) responded to the survey than men (3). The most common age group of the respondents was "20-24", at 54%, followed by the "30+" age group, at 38%. A majority of the respondents (77%) identified as being of "Hispanic, Latino or Spanish origin". The most common ethnicity chosen was "Black/African American" at 46%. Interestingly, although "Multiracial or Biracial" was an option, almost a third of respondents (31%) chose "A race/ethnicity not listed here" instead.

Table 1 below summarizes the demographics of the sample group.

**TABLE 1: SURVEY DEMOGRAPHICS**

n=13	Responses	% of Total
<b>(Q1) School</b>		
Bronx Community College	8	62%
Hostos Community College	5	38%
<b>(Q2) Gender</b>		
Woman	10	77%
Man	3	23%
<b>(Q3) Age group</b>		
20-24	7	54%
30+	5	38%
15-19	1	8%
<b>(Q4) Hispanic, Latino or Spanish origin</b>		
Yes	10	77%
No	3	23%
<b>(Q5) Ethnicity</b>		
Black or African American	6	46%
A race/ethnicity not listed here	4	31%
White or Caucasian	2	15%
No response	1	8%

Finding students who had experiences in the Bronx as children was an essential component of this study. When asked if they spent all or part of their childhood in the Bronx, 7 of the 13 respondents (54%) replied “Yes”. The next question asked about the frequency of childhood visits to parks in the Bronx in the summer (when presumably weather was most agreeable and children were off from school). The 6 respondents who indicated that they had not spent any of their childhood in the Bronx also chose “Never” when asked about visits to Bronx parks, which suggests these questions were understood and answered correctly. Focusing on the 7 that *did* spend time in the Bronx, all but one of them visited parks once a week or more during the summer. Table 2 below summarizes respondents’ time spent as a child.

**TABLE 2: CHILDHOOD VISITS TO BRONX PARKS**

	<b>Responses</b>	<b>% of Total</b>
<b>(Q6) Spend all or part of childhood in Bronx (n=13)</b>		
Yes	7	54%
No	6	46%
<b>(Q7) Frequency of visits to Bronx parks in summer (n=7)</b>		
Every day	2	29%
Several days a week	2	29%
Once a week	2	29%
A couple times a month	1	14%

Continuing with the 7 respondents who visited Bronx parks in their childhood, the next two questions explored whether these visits were sufficient. 71% said they would have liked to visit parks more often than they did. When asked why, over half of them (57%), concerningly, indicated that their “Park was not safe”. The choices “Park did not have anything I liked” and “I went other places during the summer” also received multiple responses. Two respondents wrote in their own reasons. Table 3 below summarizes respondents’ opinions on the frequency of their park visits.

**TABLE 3: LIMITS ON VISITS TO BRONX PARKS**

n=7	<b>Responses</b>	<b>% of Total</b>
<b>(Q8) Wish could visit parks more often as child</b>		
Yes	5	71%
No	2	29%
<b>(Q9) Reason(s) parks not visited more often</b>		
Park was not safe	4	57%
Park did not have anything that I liked	2	29%
Went other places during the summer	2	29%
Had other obligations	1	14%
Other: "dirty/rusty play area"	1	14%
Other: "no adult to supervise"	1	14%

Moving closer to the goal of the survey, the students were then asked if they remember interacting with nature at these parks, and what those interactions were. Of the 7 students who grew up and visited parks in the Bronx, all but one (86%) said they did have memories of interacting with nature. Of these 6, the most common activities were “Observing animals” or “Taking pictures of nature” (67%). It is worth noting these are considerably more passive activities that don’t involve direct contact with nature. Still, more active forms of participation, such as “Collecting plants” or “Digging in the soil”, were noted by 50% of the group, and a third of the respondents (33%) remember collecting insects or rocks. Encouragingly, 5 of the 6 respondents (83%) remembered participating in more than one activity, although surprisingly, “Climbing trees”, “Playing on the beach”, and “Participating in organized activities” were not selected by any of the respondents. Table 4 below summarizes the respondents’ early interactions with nature.

**TABLE 4: INTERACTIONS WITH NATURE**

	<b>Responses</b>	<b>% of Total</b>
<b>(Q10) Memories of interacting with nature in Bronx parks (n=7)</b>		
Yes	6	86%
No	1	14%
<b>(Q11) Interaction(s) with nature in Bronx parks (n=6)</b>		
Observing animals such as birds/squirrels	4	67%
Taking photographs of nature	4	67%
Collecting plants	3	50%
Digging in the soil	3	50%
Collecting insects	2	33%
Collecting rocks	2	33%
Climbing rocks	1	17%
Hiking in the woods	1	17%
Picnicking on the grass	1	17%
Playing in a stream or pond	1	17%

The questions that followed explored the quality and influence of those interactions. Of the 6 respondents with nature interactions, 5 (83%) described them as “Happy/positive” and 1 described their feelings as “Mixed”. When asked what made these interactions happy/positive, all 6 respondents noted “Being free to have my own adventure” as a factor. Two-thirds of respondents (67%) also noted a change in environment and actual physical contact as contributors to positive memories of nature. Table 5 below summarizes respondents’ feelings towards these early interactions.

**TABLE 5: REFLECTIONS ON INTERACTIONS**

n=6	Responses	% of Total
<b>(Q12) Happy/positive interactions with nature</b>		
Yes	5	83%
Mixed	1	17%
<b>(Q13) Reason(s) for happy/positive interactions</b>		
Being free to have my own adventure	6	100%
Being in environment different from home/building/street	4	67%
Physical contact with rocks, plants, trees, water, etc.	4	67%
Learning new things about nature	2	33%

The survey then moved to present day, and asked the students what lingering effects these interactions may have had. Two thirds (67%) said these childhood moments did influence who they are today, and the remaining third were not sure. When this same group was asked what present beliefs or actions might have been influenced, two-thirds (67%) said it made them “More conscious of protecting the environment”, and the same number said it made them “Want to spend more time enjoying nature as an adult”. Those responses were notably more common than the remaining choices, each of which was chosen only once. Table 6 below summarizes respondents’ feelings on the influence of early interactions with nature.

**TABLE 6: INFLUENCE OF INTERACTIONS**

n=6	Responses	% of Total
<b>(Q14) Interactions influenced who you are today</b>		
Yes	4	67%
Not sure	2	33%
<b>(Q15) Interactions with nature helped make me...</b>		
More conscious of protecting environment	4	67%
Want to spend more time enjoying nature as adult	4	67%
More confident or comfortable in nature	1	17%
Want to pursue career involving nature/environment	1	17%
Want to volunteer to help environment	1	17%

The survey concluded by expanding outward a little and asking students where else they may have had interactions with nature besides neighborhood parks in the Bronx. Of the entire survey group, 11 (85%) noted at least one of these alternatives. Interestingly, the most common response, from nearly half of the group (46%), was “Trips to parks in other countries”, suggestive of the diverse backgrounds of these colleges’ students. The second most common response, perhaps less surprisingly, was “Bronx Zoo or Botanical Garden” from 38% of the group. For all of its disparities in the distribution of green space, the Bronx is blessed with these two world-class institutions, and if someone did spend their entire childhood in the borough it would be rare to not visit them with their parents, school, or summer camp at some point in their lives. Only 1 respondent reported that they did not have any other interactions with nature, and they were among the those that had not grown up in, or visited any parks in, the Bronx as a child. When asked the final question, if it is important for children to have access to nature, the twelve who answered that question responded “Yes”.

**TABLE 7: NATURE MORE BROADLY**

n=13	Responses	% of Total
<b>(Q16) Other interactions with nature</b>		
Trips to parks other countries	6	46%
Bronx Zoo or Botanical Garden	5	38%
Summer camp	3	23%
Trips to other boroughs of New York City	3	23%
Trips to other states	3	23%
Did not have other experiences with nature	1	8%
Boy Scouts / Girl Scouts	1	8%
<b>(Q17) Important for children to have access to nature</b>		
Yes	12	92%
No response	1	8%

## VI. DISCUSSION

Despite efforts to follow all established procedures and to ensure a minimum of work for any faculty involved, response to the survey was disappointingly low. It can be difficult under any circumstances to receive responses to a survey, with some researchers resorting to incentives or rewards for participation. At the present time, with the COVID-19 pandemic still forcing many classes online, the resulting disruption likely added to the challenge of grabbing the attention of both faculty and students alike. It also may be the case that students these days are more likely to receive and respond to messages sent directly through social media rather than more formal channels, and it is recommended such options be explored for future research.

That having been said, those who did respond to the survey give us a limited but interesting window into their life stories. Of the 6 respondents who reported childhood interactions with nature in Bronx parks, 5 were women. To the extent that gender-related differences in freedom to explore or access to nature persist, I am pleased to learn this small group of respondents, from a challenging urban environment like the Bronx, did find memorable experiences. Among the 6 respondents, however, the number of those experiences recalled from

childhood varied greatly. One respondent reported as many as 8 activities, including the only responses for “Playing in a stream or pond” and “Picnicking on the grass”. That personality was clearly attracted to the outdoors, since they noted, despite these activities, they *still* did not visit parks as often as they would have liked, with “Park was not safe” and “No adult to supervise” provided as reasons. They also noted a strong influence on their attitudes and behaviors by selecting 4 out of the 5 responses, and this was the only respondent to express that these experiences “Made me more confident or comfortable in nature” and “Made me want to volunteer to help the environment”. Another respondent, who noted almost as many “active” interactions, including “Climbing rocks”, was the only one to note “Made me want to pursue a career involving nature” as an outcome. Taken together, these two respondents might underscore, like the concept of “relatedness” we have seen in the literature, a connection between more “hands on” interactions with nature earlier and later in life.

Conversely, there was a respondent who recalled only 1 activity, “Collecting rocks”, and another who reported only passive activities like observing and photographing nature. Both of these respondents chose only “Made me want to spend time enjoying nature” and “Made me more conscious of protecting the environment” as connections later in life. Still, even multiple early interactions did not *guarantee* a continuing influence, as another respondent who noted 4 activities checked ‘Not sure’ and provided no further responses when asked about present connections. It is more likely that *certain* predispositions, with the right combination of factors, will find their formative experiences in the outdoors.

It is hard to know how much the popularity of passive activities that we have seen in the survey results is due to personal interests, apprehensions, or parental restrictions. What is known is that our electronic devices follow us outdoors, and while nature photography is nothing new,

even this author is guilty of worrying that the beautiful scene before him will be lost, that the experience will not be lasting, unless it is thoroughly documented with his cell phone camera. But the more time we spend looking at that screen, the less time we spend allowing our senses to be truly engaged. Fortunately, the results suggest there was room for meaningful interactions.

All 6 respondents shared their feelings about the qualities that made their interactions happy or positive. The least popular response was “I liked learning new things about nature”, suggesting that the essence of a formative experience is not anything consciously educational. 4 of the 6 respondents said they liked being in a different environment, and the same number said they liked the physical contact with rocks or plants or water, which would suggest that the act of getting out into nature made a difference in their lives. Most significantly, all 6 respondents chose “I liked being free to have my own adventure”, lending support to the theory that the most beneficial moments in childhood are the ones when, if only for brief stretches of time, kids are allowed to explore the world on their own.

This study focused on the mere *possibility* of memorable and formative interactions with nature as a child in the Bronx. The intersection of children, nature, and free play, especially in an urban environment, is a rich topic and lends itself to plenty of further investigation. How far do children in the Bronx have to travel on their own or with parents to find safe and enjoyable parkland? How do factors like parents’ attitudes, or the need for supervision, or crime, or physical barriers like highways limit access? What alternatives exist to provide the same quality of experience? How do the mental maps of young people vary in different areas of the Bronx, and how does that relate to their sense of place and possibility in the world? In what other ways does freedom to have formative experiences in nature play out in adulthood? It is my hope future researchers give a voice to as many young Bronxites as possible.

## VII. CONCLUSION

We have seen that the conveniences and constraints of modern life can lead to a growing disconnection with the natural world. Relatedly, we have seen that children today are losing the freedoms and interests that might help to counter this trend. There are consequences for the health and well-being of the individual, and consequences for how we relate to our neighbors on this planet, of all species. Evidence suggests that humans *need* access to nature to feel properly aligned, and the earlier in life this connection can be formed the better. Encouragingly, there is a growing recognition that children need unstructured time to play, to test themselves, and to find their bearings in the world. Nature provides endless opportunities for this discovery, but for some city dwellers their accessible greenery takes the form of a landscaped public park. These parks can play a role, however, by bringing back some wilder, untamed bits of nature and allowing children to play freely in them. Parents can play a role by trusting and supporting their children's instincts.

It may not take much more than some grass, rocks, trees, flowing water and “alone time” to spark a child's imagination and create a lifelong connection with the natural world. I was pleased to learn that most of the students who responded to the survey and grew up in the Bronx not only visited its parks but found ways to interact with nature there. Even more encouraging, a majority described these interactions as positive and felt they made at least a minor, and perhaps a major, difference in their lives. My sense is that further research will only reveal *more* compelling examples of how children, given enough freedom, are driven to seek out and find their own formative experiences, including a lasting feeling of wonder, in even the smallest of urban spaces.

## APPENDIX A: INTRODUCTORY EMAIL

Dear Colleague

I would like to invite you to help one of my graduate students, Alex Butler, complete his MA thesis research. His work focuses on children's experiences with nature, with a particular focus on the Bronx, and how this affects young adults' perspectives of nature. Alex was raised in the Bronx and wants to capture the experiences and perspectives of Bronx college students. Would you be willing to send an invitation to your students to respond to a survey he has developed? The study has been approved by the Hunter College IRB and by Alexander Wolf, Human Subjects Research Protection Program (HRPP) Coordinator for Bronx Community College (who is cc'd here).

We're hoping for responses from as many students (with a wide variety of backgrounds and interests) as possible. If you are willing to help us recruit respondents through your current classes (especially larger core classes), please see the attachment that includes the recruitment script and email text with links to the survey in both English and Spanish. It would involve very little work for you. We would appreciate it if you would announce it to your students via the script and then circulate the invitation and links, possibly as a Blackboard announcement or email. If possible, please circulate the survey this week, prior to the Thanksgiving holiday.

Thank you very much,

Prof. Ines Miyares  
Department of Geography and Environmental Science  
Hunter College-CUNY  
imiyares@hunter.cuny.edu

Alex Butler  
Masters Degree Candidate  
Department of Geography and Environmental Science  
Hunter College-CUNY  
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## APPENDIX B: RECRUITMENT SCRIPT

Class,

A graduate student at Hunter College (CUNY) is conducting some research on parks in the Bronx for his thesis paper. He is interested in hearing from students that grew up in the Bronx and had interactions with nature in these parks. I'm going to share with you (by Blackboard email or announcement) a link to an online survey that has 17 multiple choice questions. The survey does not ask for any personal information, can be completed in English or Spanish, and should only take about 10 minutes. I'm not involved in this research and it has no connection to this class or your grade. It's entirely optional for you to complete on your own time. If another professor already shared this survey with you, you do not need to complete it more than once. The email will include contact info if you have any further questions about the project.

## APPENDIX C: SURVEY ANNOUNCEMENT

Hi!

My name is Alex Butler and I'm a graduate student at CUNY - Hunter College. I grew up in the Bronx and am writing a research paper about children's experiences with nature in Bronx parks. I am interested in learning what Bronx college students have to say on this topic.

Will you fill out a short online survey? There are 17 multiple choice questions. A few of the questions are about yourself, then about your early experiences in Bronx parks, then about how these experiences might have influenced who you are today. The survey is anonymous and does not collect any information that could be used to identify you. It should take less than 10 minutes to complete the survey.

If you are interested, please click one of the links below:

Complete the survey in English:

<https://www.surveymonkey.com/r/JSDGW9R>

Complete the survey in Spanish:

<https://es.surveymonkey.com/r/JZ6XPS9>

Thank you!

Your participation in this research is voluntary. If you have any questions, you can contact Alex Butler at alexander.butler41@myhunter.cuny.edu. If you have any questions about your rights as a research participant or if you would like to talk to someone other than the researchers, you can contact CUNY Research Compliance Administrator at 646-664-8918 or HRPP@cuny.edu.

## APPENDIX D: ENGLISH SURVEY

**Please read:**

**The purpose of this survey is to learn about students' early experiences with nature in Bronx parks (if any) and whether or not those experiences influenced them later in life. Your participation in this research is completely voluntary and is not connected to your class, your teacher or your grade in any way. There are 17 questions, and you may skip any question you do not wish to answer. The survey does not collect any information that can be used to identify you. It should take 10 minutes or less to complete. If you wish to participate in the survey, please click "I agree" below.**

[I agree]

---

**1. What is your school?**

- Bronx Community College
- Hostos Community College

**2. What gender do you identify with?**

- Man
- Non-binary
- Woman
- Prefer to self-describe: \_\_\_\_\_

**3. What is your age group?**

- 15-19
- 20-24
- 25-29
- 30+

**4. Are you of Hispanic, Latino or Spanish origin?**

- Yes
- No

**5. How would you describe yourself?**

- Asian or Pacific Islander
- Black or African American
- Native American or Alaskan Native
- White or Caucasian
- Multiracial or Biracial
- A race/ethnicity not listed here

**6. Did you spend all or part of your childhood in the Bronx?**

- Yes
- No

**7. As a child, how often do you remember visiting Bronx parks in the summer?**

- Every day
- Several days a week
- Once a week
- A couple times a month
- Very rarely
- Never

**8. As a child, did you wish you could visit parks more often?**

- Yes
- No

**9. If you checked Yes above, were there reasons you did not visit parks more often?  
(check all that apply)**

- Park was too far away
- Park was not safe
- Park did not have anything that I liked
- I went other places during the summer
- I had other obligations
- Other: \_\_\_\_\_

**10. If you visited Bronx parks as a child, do you have memories of interacting with nature  
(flowers, trees, rocks, water, animals, etc.)?**

- Yes
- No

**11. If you checked Yes above, which of the below interactions with nature within Bronx  
parks do you remember as a child?**

**(check all that apply):**

- Climbing rocks
- Climbing trees
- Digging in the soil
- Collecting rocks
- Collecting plants
- Collecting insects
- Observing animals such as birds or squirrels
- Playing in a stream or pond
- Playing on the beach
- Hiking in the woods
- Taking photographs of nature

- Picnicking on the grass
- Participating in organized nature activities/lessons
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**12. When you look back at these interactions, are they happy/positive memories?**

- Yes
- No
- Mixed

**13. If you had happy/positive moments in nature as a child, do any of these describe why? (check all that apply)**

- I liked being in an environment different from my home/my building/my street
- I liked learning new things about nature
- I liked being free to have my own adventure
- I liked the physical contact with rocks, plants, trees, water, etc.
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**14. Do you feel that these early interactions with nature influenced who you are today?**

- Yes
- No
- Not sure

**15. Do you feel early experiences with nature in Bronx parks helped lead to any of the below?**

**(check all that apply):**

- Made me more confident or comfortable in nature
- Made me want to spend more time enjoying nature as an adult
- Made me more conscious of protecting the environment
- Made me want to volunteer to help the environment
- Made me want to study nature/environmental topics in school
- Made me want to pursue a career involving nature/the environment
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Did not have an influence on me

**16. If you did not have many experiences with nature in Bronx parks, did you have those experiences elsewhere?**

**(check all that apply):**

- Boy Scouts / Girl Scouts
- Summer camp
- Bronx Zoo or Botanical Garden

- Trips to parks in other boroughs of New York City
- Trips to parks in other states
- Trips to parks other countries
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Did not have other experiences with nature

**17. Do you feel it is important for children to have access to nature?**

- Yes
- No
- Not sure

## APPENDIX E: SPANISH SURVEY

**Por favor lee bien:**

**El propósito de esta encuesta es conocer las experiencias infantiles de los estudiantes con la naturaleza en los parques del Bronx (si corresponde) y si esas experiencias los influyeron o no en el futuro. Su participación en esta investigación es completamente voluntaria y no está relacionada con su clase, su profesor o su calificación de ninguna manera. Hay 17 preguntas y puedes omitir cualquier pregunta que no desees responder. La encuesta no recopila ninguna información que se pueda usar para identificarlo. Esta encuesta tardará 10 minutos o menos en completarse. Si desees participar en la encuesta, haga clic en "Acepto" a continuación.**

[Acepto]

---

**1. ¿Cual es su escuela?**

- Bronx Community College
- Hostos Community College

**2. ¿Con qué género te identificas?**

- Hombre
- No binario
- Mujer
- Prefiero autodescribirme: \_\_\_\_\_

**3. ¿Cual es su grupo de edad?**

- 15-19
- 20-24
- 25-29
- 30+

**4. ¿Es Uds de origen hispano, latino, or español?**

- Si
- No

**5. ¿Cómo se autodescribe?**

- Asiático o isleño del pacífico
- Negro o Afro-americano
- Indígena Americano o Indígena de Alaska
- Blanco o anglo-sajón
- Multiracial o Biracial
- Una raza o etnidad no incluída

**6. ¿Pasó toda o parte de su infancia en el Bronx?**

- Sí
- No

**7. De niño, ¿con qué frecuencia recuerda haber visitado los parques del Bronx en verano?**

- Todos los días
- Varios días a la semana
- Una vez a la semana
- Unas cuantas veces al mes
- Muy infrecuente
- Nunca

**8. Cuando era niño, ¿deseaba poder visitar los parques con más frecuencia?**

- Sí
- No

**9. Si marcó Sí arriba, ¿hubo razones por las que no visitaba los parques con más frecuencia?**

**(marque todo lo que corresponda)**

- Los parques estaban muy alejados
- Los parques no eran seguros
- Los parques no tenían lo que me gustaba
- Visite otros lugares en el verano
- Tenía otras obligaciones
- Otra razón no incluída: \_\_\_\_\_

**10. Si visitó los parques del Bronx cuando era niño, ¿tiene recuerdos de interactuar con la naturaleza (flores, árboles, rocas, agua, animales, etc.)?**

- Sí
- No

**11. Si marcó Sí arriba, ¿cuál de las siguientes interacciones con la naturaleza dentro de los parques del Bronx recuerda cuando era niño?**

**(marque todo lo que corresponda):**

- Escalar rocas
- Escalar palos/arboles
- Cavando en el suelo
- Recogiendo rocas
- Recolectando plantas
- Recolectando insectos
- Observar animales como pájaros o ardillas.
- Jugando en un arroyo o estanque
- Jugando en la playa
- Senderismo en el bosque
- Tomando fotografías de la naturaleza

- Picnic en la grama
- Participar en actividades / lecciones organizadas en la naturaleza
- Otra razón: \_\_\_\_\_
- Otra razón: \_\_\_\_\_
- Otra razón: \_\_\_\_\_

**12. ¿Al recordar estas interacciones, son felices o positivas las memorias?**

- Si
- No
- Sentimientos mixtos

**13. Si tenías memorias felices o positivas con la naturaleza como joven, ¿aplican algunas de las opciones enumeradas a continuación?**

**(marque todo lo que corresponda)**

- Me gustó estar en un entorno diferente a mi casa / mi edificio / mi calle
- Me gustó aprender cosas nuevas sobre la naturaleza.
- Me gustó ser libre para tener mi propia aventura.
- Me gustó el contacto físico con rocas, plantas, árboles, agua, etc.
- Otra razón: \_\_\_\_\_
- Otra razón: \_\_\_\_\_

**14. ¿Sientes que estas primeras interacciones con la naturaleza influyeron en quién eres hoy?**

- Si
- No
- No estoy seguro/a

**15. ¿Siente que las primeras experiencias con la naturaleza en los parques del Bronx ayudaron a conducir a alguno de los siguientes?**

**(marque todo lo que corresponda):**

- Me hizo sentir más seguro o cómodo en la naturaleza.
- Me dieron ganas de pasar más tiempo disfrutando de la naturaleza como adulta.
- Me hizo más consciente de la protección del medio ambiente.
- Me hizo querer ser voluntario para ayudar al medio ambiente.
- Me hizo querer estudiar temas de naturaleza / medio ambiente en la escuela.
- Me hizo querer seguir una carrera que involucre la naturaleza / el medio ambiente.
- Otra razón: \_\_\_\_\_
- Otra razón: \_\_\_\_\_
- No me influyó

**16. Si no tuvo muchas experiencias con la naturaleza en los parques del Bronx, ¿tuvo esas experiencias en otros lugares?**

**(marque todo lo que corresponda):**

- Boy Scouts / Girl Scouts
- Campamento de verano
- Zoológico o jardín botánico del Bronx

- Viajes a parques en otros distritos de la ciudad de Nueva York
- Viajes a parques en otros estados
- Viajes a parques de otros países
- Otra razón: \_\_\_\_\_
- Otra razón: \_\_\_\_\_
- No tuve otras experiencias con la naturaleza.

**17. ¿Crees que es importante que los niños tengan acceso a la naturaleza?**

- Si
- No
- No estoy seguro/a

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