# International Journal of Early Childhood Environmental Education

## Addressing Policy, Practice, and Research That Matters

Yash Bhagwanji, Editor

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### North American Association for Environmental Education

# International Journal of Early Childhood Environmental Education

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## TABLE OF CONTENTS

### Editorial Note

### Research

### Practice

### Book Reviews

# Living within Precarious Times:
## Posthumanist Possibilities for Early Childhood Environmental Education

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Within the fields of childhood studies and environmental education, a growing body of research drawing upon more-than-human or posthumanist theories has inspired early childhood educators to rethink and unlearn anthropocentric ways of engaging with nature and the environment (Malone, 2015; Nxumalo & Cedillo, 2017; Rautio, 2013; Taylor, 2011; Taylor & Giugni, 2012; Taylor et al. 2012). While the current epoch of the Anthropocene has fuelled discussions to foster sustainability education in precarious times, posthumanist scholars argue it is limited in its overall capacity to grapple with the complexity of human and non-human relations (e.g. see Malone, 2015). Centring human beings as autonomous individuals, this epoch problematically assumes that: (a) we have entered a time period where all subjects have been granted "equal access to western humanity" (Weheliye, 2014, p. 9), (b) human beings alone have actively caused the earth's 'devastation,' and (c) children, as environmental saviours, can somehow recover the planet from such precarity (Malone, 2015; Nxumalo & Cedillo, 2017; Taylor et al., 2012; Taylor & Pacini-Ketchabaw, 2015). As a response to these anthropocentric, child-centred views of environmental learning, posthumanist perspectives challenge the notion that humans beings can dominate, 'use' and, subsequently, save nature/the environment which is, in turn, positioned as a passive backdrop devoid of any agency (Änggård, 2016; Malone, 2015; Nxumalo & Cedillo, 2017). These perspectives further highlight how the social world we live in is comprised of an assemblage of human and non-human actors (e.g. things, animals, plants, affects, discourses, institutions) that are constituted through unfolding relations across bodies (writ large) within environments that are always vibrant and ever-changing (Bennett, 2010; Leander & Boldt, 2013; Lenz-Taguchi, 2011). As such, posthumanist theories emphasize "our ecological interdependence [in order to] approach human and geo-physical worlds as a hybrid network of relations" (Taylor et al., 2012, p. 81).

However, as many early childhood scholars have argued, exploring our relationships with more-than-human worlds is not exactly a new concept (e.g. Kuby & Rowsell, 2017; Malone, 2015; Nxumalo & Cedillo, 2017). Deep ecologists as well as indigenous philosophers have long examined humankind and nature as relational fields of possibility, rather than distinct entities (Absolon, 2010). That said, the more recent attention to posthumanist perspectives has helped bring these alternative ways of relating to the 'natural world' into sharper relief by urging us to consider the "ethical, political, and pedagogical implications of addressing the colonial histories and material geographies" (Pacini-Ketchabaw &Taylor, 2015, p. 2) that shape children's more-than-human encounters.

**Call for Papers to a Special Issue of the *International Journal of Early Childhood Environmental Education***

As hopeful global citizens, we would like to explore the generative ways in which young children understand their dynamic relationships with nature/natural environments and how children affectively embody and *learn with* more-than-human others, particularly when those explorations trouble and unsettle anthropocentric or 'normative' ways of being, knowing, and doing. We envision serving as co-editors of a special issue contributing to ethical, political, and critical conversations that open up the possibility that these times are precarious due, not only to current environmental vulnerabilities, but also the ways that such vulnerabilities are inextricably entangled within modernist discourses privileging 'whiteness,' humanism, speciesism, patriarchy, and colonialism (among other things), thereby

calling much needed attention to the 'unevenness' of our global geohistories (Nxumalo & Cedillo, 2017).

**Proposed Parameters**

In addition to the open call for manuscripts for the special issue, we would also like to invite proposals of abstracts for our review prior to full manuscript submissions. All manuscripts will be subject to double-blind peer review processes. We welcome both academic articles as well as non-traditional pieces that play/write with posthumanist theories. In line with IJECEE's mission, we are interested in pieces that emphasize implications or recommendations for advocacy, practice, research, and/or policy within early childhood (birth-8 years) environmental education.

Possible areas of focus within posthumanisms and early childhood environmental education include but are not limited to:

- affect theories (e.g. inspired by Deleuze; Deleuze & Guattari; Brennan)
- climate change within the epoch of the Anthropocene
- common world pedagogies
- critical disability studies
- ecological identities
- environmental ethics
- feminist new materialisms
- gender, race, indigenous, post-colonial, and/or decolonizing perspectives
- immigration and/or transnational subjectivities
- material technologies
- multispecies relations
- pedagogies of fear (e.g. of nature, of self)
- power abuse and its effect on children
- representations of animals and/or humans in media

In addition to complying with the requirements mentioned in *Author's Information*, the following timeline and parameters will apply to the special issue:

| Tentative Due Dates | Tasks |
|---|---|
| August 1, 2018 | Proposed title, abstract (500 words), and author bios (100 words each) due. Please send as pdf to: bdernikos@fau.edu and ybhagwan@fau.edu<br><br>The editors will review the abstracts and invite selected authors to submit a full manuscript by the proposed deadline. |
| September 1, 2018 | Decision notification from editors. |
| January 15, 2019 | Full manuscripts due to editors (approximately 6,500 words, excluding references). Please send as pdf to bdernikos@fau.edu and ybhagwan@fau.edu |
| April 1, 2019 | Feedback to authors from editors and peer reviewers. |

| July 1, 2019 | Revisions due to editors. |
| October, 2019 | Publication of special issue. |

Please contact Bessie P. Dernikos (bdernikos@fau.edu) if further clarification or information is required.

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Absolon, K. (2010). Indigenous wholistic theory: A knowledge set for practice. *First Peoples Child & Family Review, 5*(2), 74-87.

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Weheliye, A. G. (2014). *Habeas viscus: Racializing assemblages, biopolitics, and black feminist theories of the human.* Durham, NC: Duke University Press.

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# Viviendo en Tiempos Precarios:
## Oportunidades Post-humanistas en la Educación Medioambiental para la Infancia

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(Spanish language translation provided by **John Hardman**, Florida Atlantic University)
(Traducción al español hecha por **John Hardman**, Florida Atlantic University)

Dentro de los campos de los estudios de la infancia y de la educación medioambiental, un creciente cúmulo de investigaciones, basado en teorías mas-que-humanas o post-humanistas, ha inspirado a educadores de la temprana infancia a repensar y desaprender enfoques antropocéntricos en el estudio de la naturaleza y el medio ambiente (Malone, 2015; Nxumalo & Cedillo, 2017; Taylor, 2011; Taylor & Giugni, 2012; Taylor et al. 2012). Mientras que la era presente del Antropoceno ha impulsado conversaciones que buscan promover la sostenibilidad en tiempos precarios, los estudiosos post-humanistas argumentan que es limitada su capacidad para abordar la complejidad de las relaciones humanas y no-humanas (e.g. leer Malone, 2015). Al afirmar a los seres humanos como individuos autónomos, esta era asume de manera problemática que: (a) hemos entrado en un período donde todos los sujetos han sido dotados de "acceso por igual a la sociedad occidental" (Weheliye, 2014, p. 9); (b) solo los seres humanos han sido la causa activa de la 'devastación' de la tierra; y (c) los niños, como salvadores del medio ambiente, pueden de alguna manera rescatar el planeta de dicha precariedad (Malone, 2015; Nxumalo & Cedillo, 2017; Taylor et al., 2012; Taylor & Pacini-Ketchabaw, 2015).

Como respuesta a estas perspectivas sobre la educación medioambiental centradas en el hombre y la infancia, las perspectivas post-humanistas rechazan la noción que los seres humanos pueden dominar, 'usar' y, de manera subsiguiente, salvar a la naturaleza/el medio ambiente los cuales, a su vez, son vistos como un telón de fondo pasivo carente de toda capacidad de respuesta (Änggård, 2016; Malone, 2015; Nxumalo & Cedillo, 2017). Estas perspectivas sirven para resaltar como el mundo social en el que vivimos está compuesto de una mezcla de actores humanos y no-humanos (e.g. cosas, animales, plantas, afectos, discursos, instituciones) que se construyen por medio de relaciones emergentes entre entidades (genéricamente hablando) dentro de entornos siempre vibrantes y cambiantes (Bennett, 2010; Leander & Boldt, 2013). Como tal, las teorías post-humanistas enfatizan "nuestra interdependencia ecológica [ a fin de] abordar los mundos humanos y geofísicos como una red híbrida de relaciones" (Taylor et al., 2012, p. 81).

Sin embargo, como han argumentado muchos académicos de la temprana infancia, la exploración de nuestra relación con los mundos más-que-humanos no es precisamente un concepto novedoso (e.g. Kuby & Rowsell, 2017; Malone, 2015; Nxumalo & Cedillo, 2017). Ecólogos profundos, al igual que filósofos indígenas, han estudiado la humanidad y la naturaleza como campos de potencialidades emparentadas más que como entidades diferentes (Absolon, 2010). Dicho esto, la más reciente atención a perspectivas post-humanistas ha contribuido a dar mas relieve a estas maneras alternativas de relacionarnos con el 'mundo natural', urgiéndonos a considerar "las implicancias éticas, políticas, y pedagógicas de abordar historias coloniales y geografías materiales" (Pacini-Ketchabaw &Taylor, 2015, p. 2) que dan forma a los encuentros más-que-humanos de los niños.

**Convocatoria de Ponencias a una Edición Especial del *International Journal of Early Childhood Environmental Education***

Como ciudadanos globales esperanzados, deseamos explorar las maneras generativas en que los niños comprenden las relaciones dinámicas con la naturaleza/entornos naturales, y como los niños asimilan afectivamente y *aprenden con* otros más-que-humanos, particularmente cuando esas exploraciones problematizan o desestabilizan maneras antropocéntricas o 'normativas' de ser, conocer, y hacer. Aspiramos a servir como co-editores de un número especial que contribuya a las conversaciones éticas, políticas, y críticas que sugieran la posibilidad de que la actualidad es precaria, no solo debido a las vulnerabilidades medioambientales, pero también que tales vulnerabilidades están inextricablemente interconectadas dentro de discursos que privilegian la cultura dominante 'blanca', el humanismo, el especismo, el patriarcado, y el colonialismo (entre otras cosas), que invitan un escrutinio muy necesario de la 'disparidad' de nuestras geohistorias globales (Nxumalo & Cedillo, 2017).

**Parámetros Propuestos**

Acompañando a la convocatoria abierta de manuscritos para esta edición especial, también deseamos solicitar propuestas de resúmenes para su evaluación previo a la presentación de los manuscritos completos. Aceptamos tanto artículos académicos como escritos no-tradicionales que exploran teorías post-humanistas. Todos los manuscritos serán sometidos a revisión por pares doble y ciega.

Posibles áreas de enfoque dentro del post-humanismo y educación medioambiental de la temprana infancia incluyen pero no se limitan a:

- Género, raza, indígenismo, post-colonialismo, y/o perspectivas decolonizadoras.
- Relaciones enter especies múltiples.
- Cambio climático en la era del Antropoceno.
- Teorías de la afectividad (e.g. inspiradas por Deleuze; Deleuze & Guattari; Brennan)
- Subjetividades de inmigración y/o trasnacionales
- Nuevos materialismos feministas
- Pedagogías del miedo (e.g. de la naturaleza, del ser)
- Representaciones de animales y/o humanos en los medios
- Tecnologías materiales
- El abuso de poder y su efecto en los niños
- Estudios críticos sobre las discapacidades

Además de cumplir con los requisitos mencionados en *Información para el Autor*, para la edición especial regirán el cronograma y los parámetros que siguen:

| Fechas de Entrega Tentativas | Tareas |
|---|---|
| Agosto 1, 2018 | Título propuesto, resumen (500 palabras) y biografía de autor(es) (100 palabras cada uno). Favor de enviar PDF a: |
| | bdernikos@fau.edu y ybhagwan@fau.edu |
| | Los editores evaluarán los resúmenes e invitarán a los autores seleccionados para que presenten el manuscrito complete para la fecha de entrega propuesta. |

| Septiembre 1, 2018 | Notificación de la decisión de los editores. |
| Enero 15, 2019 | Fecha de entrega del manuscrito a los editores (aproximadamente 6,500 palabras, excluyendo referencias). Favor de enviar PDF a: |
| | bdernikos@fau.edu y ybhagwan@fau.edu |
| Abril 1, 2019 | Comunicación de feedback a los autores por parte de los editores y los evaluadores. |
| Julio 1, 2019 | Fecha de entrega a los editores de las correcciones. |
| Octubre, 2019 | Publicación de la edición especial. |

Favor de comunicarse con Bessie P. Dernikos (bdernikos@fau.edu) de requerirse clarificación o información adicional.

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Absolon, K. (2010). Indigenous wholistic theory: A knowledge set for practice. *First Peoples Child & Family Review, 5*(2), 74-87.

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# Benefits and risks of tree climbing on child development and resiliency

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**ABSTRACT**

This study examined the benefits and risks associated with tree climbing on child development and resiliency.  A mixed method survey instrument was administered to parents of children aged 3-13 years who climbed trees.  The survey examined demographics, details of tree climbing activities, and the type of injuries that have resulted from this type of risky play.  The results indicated that even though tree climbing can result in minor injuries, it is a relatively safe outdoor activity. Children afforded the opportunity to be involved in risky play such as tree climbing grow socially, emotionally, physically, cognitively, and creatively, and have increased resiliency.

*Keywords:* childhood tree climbing, child development, risk-taking play, childhood resiliency

Risky play has an important role in the wellbeing, satisfaction, and development of children's current and future academic and life skills (Migliarese, 2008; Miller & Almon, 2009).  Additionally, risky play develops growth mindsets and resiliency in children (Benard, 1991; Brooks & Goldstein, 2002; Little, 2010; Lieberman & Hoody, 1998).  One type of risky play is tree climbing.  However, many school, park, and city policies limit or even ban tree climbing activities.  Research on children recreationally climbing trees in academic research journals yields little information with comparisons to professional forestry workers or loggers (National Census of Fatal Occupational Injuries, 2015), children who work on agricultural farms climbing trees for food (Mulford, Oberli, & Tovosia, 2001), and hunters using tree stands (VanWormer, Holsman, Petchenik, Dhuey, & Keifer, 2016) rather than focusing specifically on children recreationally climbing trees.

**Literature Review**

Risky play, such as tree climbing, is part of growing up.  The literature reviewed focused on tree climbing as risk-taking play, investigating the benefits and risks of tree climbing.  Additionally, the review of literature looked at policies that limit or even ban tree climbing activities.  Research on child development and resiliency were also examined.

A comprehensive literature review revealed that there is limited research regarding the benefits and risks associated with tree climbing on child development and resiliency.  In addition, the exhaustive investigation disclosed a void of statistics regarding tree climbing injuries.

<u>Risks and restrictions of tree climbing.</u> Modern man is competent in climbing trees.  He climbs trees for food resources, and for protection to avoid predators and dangerous animals (Kraft, Ventkatarman, & Dominy, 2014).

Climbing begins at an early age in hunter-gatherer populations and therefore it is part of the child's play behavior (Kraft et al., 2014). Factor (2004) stated that children tend to use the space and materials that are available and "Playground equipment was almost non-existent, but children made use of trees, benches, the corners of shelter-sheds and the hard asphalt" (p. 145). According to Gathright, Yamada, and Morita (2007) "TC [Tree climbing] activities give families the chance to disengage from social pressures while providing an opportunity for healthy, enjoyable exercise" (p. 178).

While tree climbing is beneficial, risks are involved. Tree climbing injury statistics are scarce, often comparing a recreational activity to professional forestry workers or loggers (National Census of Fatal Occupational Injuries, 2015), children who work on agricultural farms climbing trees for food (Mulford et al., 2001), and hunters using tree stands (VanWormer et al., 2016). However, children climbing trees recreationally do not fall into any of these categories. A nurse practitioner reiterated the risks of tree climbing, such as scraped skin, broken bones, spinal injury, or a concussion from a fall (R. Kratzer, personal communication, February, 11, 2016). Pediatric injuries included falling from trees when picking fruit (Jain, Jain, & Dhaon, 2014).

Major organizations connecting children to nature, such as Natural Start Alliance, National Recreation and Park Association, Nature Explore, Children & Nature Network, state parks, etc. did not have specific statistics on tree climbing injuries. Safety organizations, such as National Electronic Injury Surveillance Survey, Centers for Disease Control and Prevention, National Safety Council, and National Child Safety Council, also did not have statistics. In preliminary research, local schools, parks, and hospitals were contacted to discuss tree climbing injuries. In the exhaustive search for statistics, no organization collected information specifically on tree climbing injuries in the United States that is publically available. However, in England, hospital figures show a decrease of 36% of children treated for tree climbing falls from 1999 to 2006, citing more children spending time on electronics (Evening Standard, 2007). Researchers also found that one third of children from six to fifteen years of age had never climbed a tree in England (Daily Mail, 2011).

Most would agree that climbing trees is a part of childhood. Some organizations call it a "right". Many states have passed Environmental Literacy Plans or a Children's Outdoor Bill of Rights (Lipman, 2012) with many including tree climbing as a right for all children (Lipman, 2012; Indiana Department of Natural Resources, n.d). However, there are areas that limit tree climbing, such as, but not limited to, Portland, Oregon (Portland Parks and Recreation, 2009); Elkhart County Parks, Indiana (Miscellaneous Prohibitions, 2012); San Francisco, California (San Francisco Park Code, 2014); New York City Parks (NYC Parks, n.d.), etc. A search for ("no tree climbing" policy) yields site after site of schools, summer camps, cemeteries, parks, home owner associations, etc. that do not allow tree climbing.

Other organizations take a different approach instead of a tree climbing ban. Some educate the tree climbers about rules, such as being able to get up and down the tree by oneself, only one person in the tree, no swinging in the tree, no backpacks in the tree, etc. (Play Australia, 2015). One approach to minimizing risk is through a benefit risk, recognizing there are risks, yet also showing how benefits outweigh the risk using a calculated formula to rate the risk. Potential hazards, control measures, and a risk rating with the control measures are listed. Risks noted include falling or slipping from heights, branches breaking, standing on another child's fingers, getting stuck, scrapes or lacerations from sharp points, and weak or vulnerable trees. Providers follow the control measures to alleviate the risk (Kindling Forest Schools Risk Assessment, 2010). Other organizations hang a sign on the tree as high as children are allowed to climb or designate certain trees for climbing (M. Barton, personal communication, February 8, 2016). In any of these situations, the risk is mitigated, rather than outright banned.

Organizations limit tree climbing for many reasons, such as the safety of trees or children, protected areas, and liability concerns. Modern law in the United States has interpreted liability of trees on one's property as negligence in many jurisdictions. Arborists and property owners have many questions about how the law is interpreted and applied in various settings (Mortimer & Kane, 2004). In a litigious society, more rules and regulations are being put into place to protect property owners and organizations from being sued. Sandseter and Sando (2016) concluded that safety issues, restrictions, and injury prevention limited risky-play such as tree climbing in Norwegian early childhood care settings with fear of injury cited as the top reason tree climbing restrictions were implemented.

Louv (2014) discussed this recent trend in limiting adventurous nature play, relating liability concerns and fear of legal impacts. He also suggested a review of laws across the United States in regards to recreation, private land, and children; factoring in concern about destroying nature, creating appropriate natural play spaces, and looking at laws that protect nature play. Sobel (2012) also questioned the double standard of making trees off limits when children are exposed to so many risks in their daily lives, making a comparison to showers or climbing trees. Risks are a part of life; however, society accepts those risks on a daily basis. The benefits of tree climbing make the risks worthwhile.

Risk-taking play. Play is a child's work and it is "so important for optimal child development" (Ginsburg, 2007, p. 182). "Play is essential because it contributes to the cognitive, physical, social, and emotional well-being of children and youth" (Ginsburg, 2007, p. 182). Risky-taking play has an important role in the wellbeing and satisfaction of children and in the development of their academic and life skills. Risky play involves "a situation whereby a child can recognize and evaluate a challenge and decide on a course of action (Ball, Gill, & Spiegal, 2012, p. 120).

Natural play involves taking risks and allows children to engage in creative and imaginative outdoor play. Migliarese (2008) stated that it is important to connect children to the natural world for "physical and psychological well-being, inter-and-intrapersonal skills, and cognitive functioning" (p. 6). Through natural play, children develop social, cognitive, creative, imaginative, emotional, and physical skills (Migliarese, 2008). Ginsburg (2007) also stated that natural "play allows children to use their creativity while developing their imagination, dexterity, and physical, cognitive, and emotional strength" (p. 183).

Outdoor play activities involves problem solving, critical thinking, and taking risks (Bundy et al., 2009). Learning from trial and error often happens in these outdoor play activities (Bundy et al., 2009). Tree climbing encourages adventure, creativity, and inspiration. Introducing children to spatial awareness very early in their motor development is helpful (Stevens-Smith, 2004). The various levels of height and space in tree climbing provide children opportunities for challenges and risk negotiation (Armitage, 2011). Ten potential benefits of natural play found in the literature review included:

1. Critical thinking (Bundy et al., 2009)
2. Imagination and creativity (Ginsberg, 2007)
3. Problem solving (Bundy et al., 2009)
4. Self-confidence (Benard, 1991)
5. Social interaction (Benard, 1991)
6. Dexterity and physical strength (Ginsberg, 2007)
7. Cognitive and emotional strength (Ginsberg, 2007)
8. Resiliency (Benard, 1991)
9. Risk negotiation (Bundy et al., 2009)
10. Spatial awareness (Stevens-Smith, 2004)

Child development and resiliency. Resiliency is having the strength to deal with challenges (Brooks & Goldstein, 2002). Resiliency is often defined as "good outcomes in spite of serious threats to adaptation and development" (Masten, 2001, p. 228). Wolin and Wolin (1993) listed the seven traits of resiliency: insight, independence, relationships, initiative, creativity, humor, and morality. Benard (1991, p. 12) also identified four characteristics in a resilient child: social competence, problem solving skills, autonomy, sense of purpose and future. All of these traits can potentially be derived from tree climbing.

Unstructured free play, including tree climbing, is paramount to a child's growth and development. Wells and Evans' (2003) concluded that "Natural areas proximate to housing and schools are essential features in an effort to foster the resilience of children and perhaps to promote their healthy development" (p. 327). Kellert (2005) noted that time outside enhances "critical thinking, problem solving, and creativity" (p. 15).

With little research available on the effects of tree climbing and increasing limitations on tree climbing, can benefits from natural play and resiliency be applied to tree climbing? Risky play, such as tree climbing, is often considered part of childhood. The literature reviewed focused on tree climbing as part of risk-taking play, investigating the

benefits and risks of tree climbing. Additionally, the review of literature looked at policies that limit or even ban tree climbing activities. Research on child development and resiliency were also examined. Research questions for this study were:

1. What are the risks and benefits of tree climbing, particularly in relation to the ten benefits of natural play and aspects of resiliency?
2. How do parents influence tree climbing?

**Methodology**

**Research Design**

The study asked parents in the United States with children aged 3-13 who let their children climb trees about their perspectives on potential benefits and risks of tree climbing and impact on child development and resiliency in a qualitative and quantitative 19-question online questionnaire (see Appendix B). The survey was completed anonymously and was mainly descriptive in nature. Survey questions were developed based on the literature, drawing from the list of ten benefits of natural play listed in the literature review and information on resiliency. Additionally, demographic information and perspectives on safety, injuries, and regulations on tree climbing were addressed in the survey. A mixed method approach was used after an initial pilot study was launched. The pilot group included a mixed group of fifteen respondents, reviewing the survey for face validity, wording, and purpose of the study. Pilot group participants had a variety of backgrounds from higher education, environmental education, and parents of children. Adjustments were made from the pilot study to make the questions clearer to the participants.

**Selection of Participants**

Participants were solicited from online groups via multiple social media outlets, parent forums, and other personal and professional online groups. Online groups included Elkhart Moms and Tots, Experiencing Nature Inside and Out, Nature Preschool Community and Ideas, South Bend Adventure Club, ROCC MOPS 2015-2016, Forest Homeschoolers, Nature Inspired Learning Group, Nature Inspired Books, Mud Puddles to Meteors, Michiana Natural Teachers, Nurturing Acorns, Connecting Children and Nature, Midwest Nature Video and Photo Pool, Early Childhood Education Outdoors, International Association of Nature Pedagogy, Our Neck of the Woods, Goshen Green Drinks, Goshen Gets Outside, Michiana Area Homeschoolers, Eat Wild, I Love Forest School, Mud Kitchens, Bicentennial Partner Nature Center, Kids in Gardens, Michiana Kids Event Calendar, Early Childhood Professionals of Northern Indiana, Loose Parts and Intelligent Playthings, and Science ECE. A convenience sampling was used as many individuals also promoted the survey in their own social media platforms, creating a snowball effect. In addition, numerous nature and childhood based social media groups and forums were contacted and the survey link was posted (see Appendix A). Applicability to all populations is limited by the groups used and convenience sampling. Permission for access was not necessary as the moderated forums were open for all. The invitation to participate was posted to online discussion forums and via email for two weeks. The bias of parent perspectives and sampling techniques limit the applicability of the study to all populations.

**Instrumentation**

A 19-item mixed method online survey (see Appendix B) was used to collect information. Templates were used to create a quality survey. Questions 1 and 2 were gateway items to ensure that the participant was a parent of child(ren) ages 3-13, lived in the United States, and allowed their child(ren) to climb trees. Questions 3-8 asked demographic information about the respondents' gender, education, state they live in, and the age(s) and gender of their children. Question 9 queried time spent in nature play/outside time. Question 10 inquired why parents allow their children to climb trees and Question 11 questioned if the benefits of tree climbing outweigh the risks. Question 12 looked at the benefits of climbing trees, based on the literature review. Questions 13, 14, and 15 were open-ended questions which asked about growth development, parental guidelines; rules and restrictions of tree climbing respectively. Question 16 questioned about tree climbing injuries. Questions 17 and 18 addressed the impact of

tree climbing on child resiliency, based on the literature review.  The final question was an open-ended option to share any additional comments or concerns about tree climbing.

**Data Analysis and Findings**

Data was compiled through an online survey instrument.  Analytical tools within the program were used to calculate numbers and percentages.  In open ended questions, responses were coded and analyzed to evaluate emerging themes.  The open ended questions allowed the respondents to reflect on their personal philosophy of risky play and how it relates to their children and tree climbing.  The parental responses revealed rich descriptions and detailed information.

**Demographics.** Sixteen hundred and two parents completed the survey meeting the requirements of having children aged 3-13, allowed their children to climb trees, and currently reside in the United States.  Of the 1,602 survey respondents, 1,489 (93%) were female and 113 (7%) were male.  All fifty states were represented (including the District of Columbia); the majority of responses came from Midwest states and the West Coast.

The majority of parents that completed the survey were college educated.  Seventeen percent had some college, 38% graduated from college, 27% completed graduate school, and 6% completed post graduate school.  Based on the 1,602 responses submitted, 65% of the children spend 10+ hours per week outside.  The survey responses were fairly evenly distributed between the study age ranges of 3-13.  The backgrounds and parenting styles of the respondents impacted the findings.

**Finding 1: Benefits and Impact of Tree Climbing.** When asked why parents allow their children to climb trees in Question 10, parents shared many reasons (see Figure 1).  Parents could check all that applied, resulting in multiple responses for each reason.  Clearly, tree climbing is fun and part of childhood.  Parents want their children to experience some of these same joys they had as children.  Additionally, children develop skills, connect to nature, and negotiate risk as part of tree climbing.
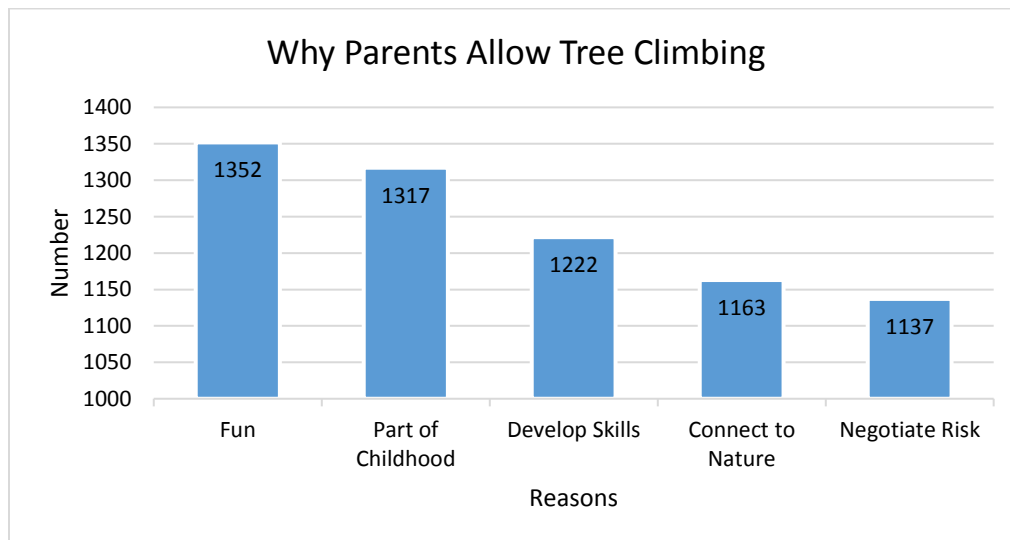


*Figure 1.*  Why Parents Allow Tree Climbing. This figure illustrates why parents allow their children to climb trees.

Parents shared other reasons why they allow tree climbing (see Figure 2) with larger words indicating the word was used more frequently in the responses, created in the software used to analyze the results.  There is a strong sense of tradition, with over thirty respondents sharing some variation of tree climbing being a part of their own childhood or as a societal tradition.  One responded, "It was my absolute favorite thing to do as a child.  It makes me feel close

to my children when they find joy in the same activity I did."  Several parents shared that they still love climbing trees as parents.



*Figure 2.* Reasons Parents Allow Children to Climb Trees. This figure is a
text analysis of respondents' reasons for allowing children to climb trees.

Additionally, parents reported their children enjoy climbing trees.  Fifty-three wrote in some form of how their children enjoy the activity.  Some children "are drawn to do so" while other parents mentioned, "I'm not sure how I would stop them."  "It's their passion."  One noted, "Because she loves to climb and I don't want to deny her the joy I had as a child."

Nineteen people reported, "Why not?"  One remarked, "It's what kids do if there is a tree.  It's not a matter of allow or not allow."  Similarly, twelve mentioned that trees are there and meant to be climbed, realizing it would be denying their childhood to not allow this activity.

Thirty-three commented on physical benefits of tree climbing, typing in exercise, balance, strength, proprioception skills, etc. as some of the physical benefits.  It helps with hand-eye coordination and body awareness, gets out energy, and develops dexterity.  One respondent wrote, it "teaches him to trust and believe in his whole body's abilities."  Others commented on sensory input and play.

Parents also allow tree climbing for emotional benefits, such as building confidence, helping each other, perseverance, freedom, sharing, peace, meditative, empowering, social activity, self-awareness, etc.  One parent wrote, "Watching my daughters work to master something they originally thought they could not do.  Empowering!" Others "need to climb to be happy and calm."  Another said, "He seems at peace in a tree."  The alone time and a place to get away is also valuable.  Character building was mentioned, in the form of learning to plan/strategize, understanding own limits, problem solving, independence, a sense of achievement and accomplishment, perspective, understanding cause and effect, risk taking, personal boundaries, conquering fear, decision making, self-determination, imaginative play, goal setting, etc.  One parent said, "My child is cautious, so if my child feels confident he can do something, I encourage it."

Perspective taking was also mentioned as a reason to allow climbing.  "They enjoy sitting up high", "get a different view of the world", and can "see from a different angle."  Tree climbing gives "varying views on the world" and a "better view of the neighborhood."  "They enjoy having a 'secret' bird's eye view of the world around them."

Some use tree climbing for geocaching or for adventure.  A few others mentioned tree climbing to get fruit.  It is also a way to enjoy nature and "explore wildlife in our tree canopy".

Question 11 asked whether the benefits of tree climbing outweigh the risk, sharing injuries that could happen as a result of tree climbing.  Over 1,400 responded to the question with 82% agreeing or strongly agreeing that the benefits of tree climbing outweigh the risks (see Figure 3).

## Benefits Outweigh the Risks
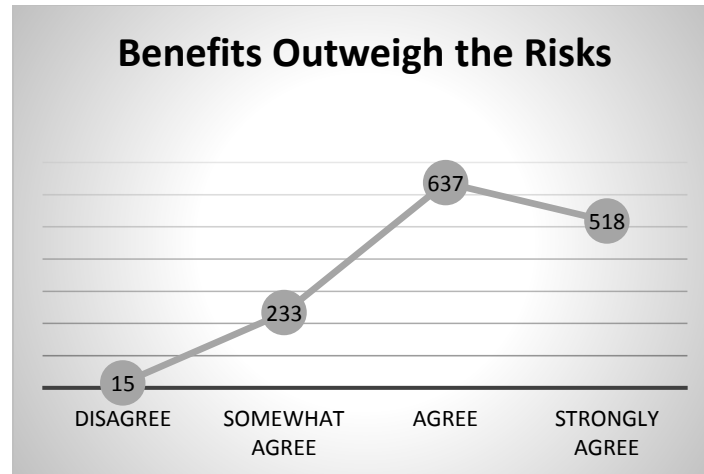


*Figure 3.* Benefits Outweigh the Risks. This figure indicates that
the benefits of tree climbing outweigh the risks.

Question 12 asked how tree climbing impacts their children, listing ten benefits that can potentially be developed through tree climbing. Response options ranged from no impact to high impact (see Figure 4). Parents reported tree climbing highly impacts self-confidence, dexterity and physical strength, risk negotiation, spatial awareness, and problem solving at rates over 60%. Social interaction was the only characteristic that parents rated over 10% as no or low impact, with a total of 30% rating social interaction as no or low impact.
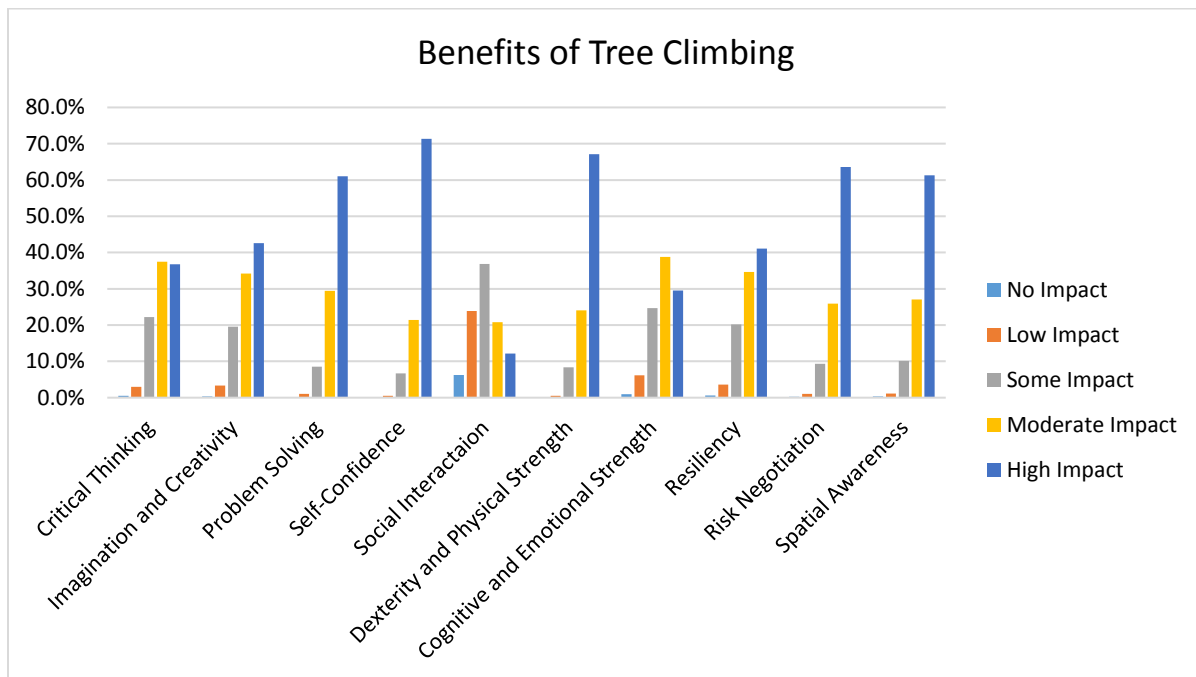


*Figure 4.* Benefits of Tree Climbing. This chart illustrates the perceived impact of tree climbing on ten attributes.

Parents were asked how tree climbing helps their children grow in Question 13. Many parents talked of independence, physical benefits, the importance of risky play, and benefits of tree climbing mentioned in Question 12. The word cloud (see Figure 5) shows the more frequently used words as larger, such as building confidence, problem solving, learn, explore, taking risk, having freedom, spatial awareness, etc.

*Figure 5.* The Ways Tree Climbing Helps Children Grow.
Parents commented by using the words in the word cloud.

Question 13 asked how tree climbing helps their children grow. One parent responded,

> It requires problem solving, assessment of risk, resolution of the fear enough to attempt to climb, perseverance after failure, sense of mastery and bravery after a fall and injury (that required urgent care), connection with nature and the awe we should all have about the world around us. Provides a coping resource to use for my child when he needs to calm down or when he needs certain sensory or body input.

Another had similar observations:

> Develops confidence and problem-solving skills (how do I get over there?). Expands their awareness of what's possible (I can do this, I can get this high like a bird, feeling of openness and accomplishment like climbing a mountain . . . pure joy). My boys also do a lot of playacting in trees (e.g. imitate birds).

Even when a child was injured, one parent related the child's response and her own hope that he continues tree climbing, sharing how her son has a special tree that becomes a "a space capsule, bus, tree house, and special friend secret meeting place." Her six-year-old fell six feet from the tree, breaking his nose. She said, "His response is that he's learned about his limits and survived to tell the tale. He was so brave through his recovery and surgery. And I truly hope he will return to the tree soon." Many parents of tree climbers recognize and accept the risk of tree climbing, knowing the risks and potential injuries are growing experiences for their children. One parent put it, "They are trying something new and challenging. If they succeed it helps them develop confidence. Even some cuts and scrapes are seen more as 'badges of honor' rather than traumatic."

**Finding 2: Rules and Restrictions.** The study investigated how families use their own rules and restrictions to limit potential risk in tree climbing. This was an open-ended question that parents were not required to answer; however, many parents had something to say, with 1,242 total responses for Question 14. Responses could be coded for more than one restriction (see Figure 6).

## Restrictions for Tree Climbing
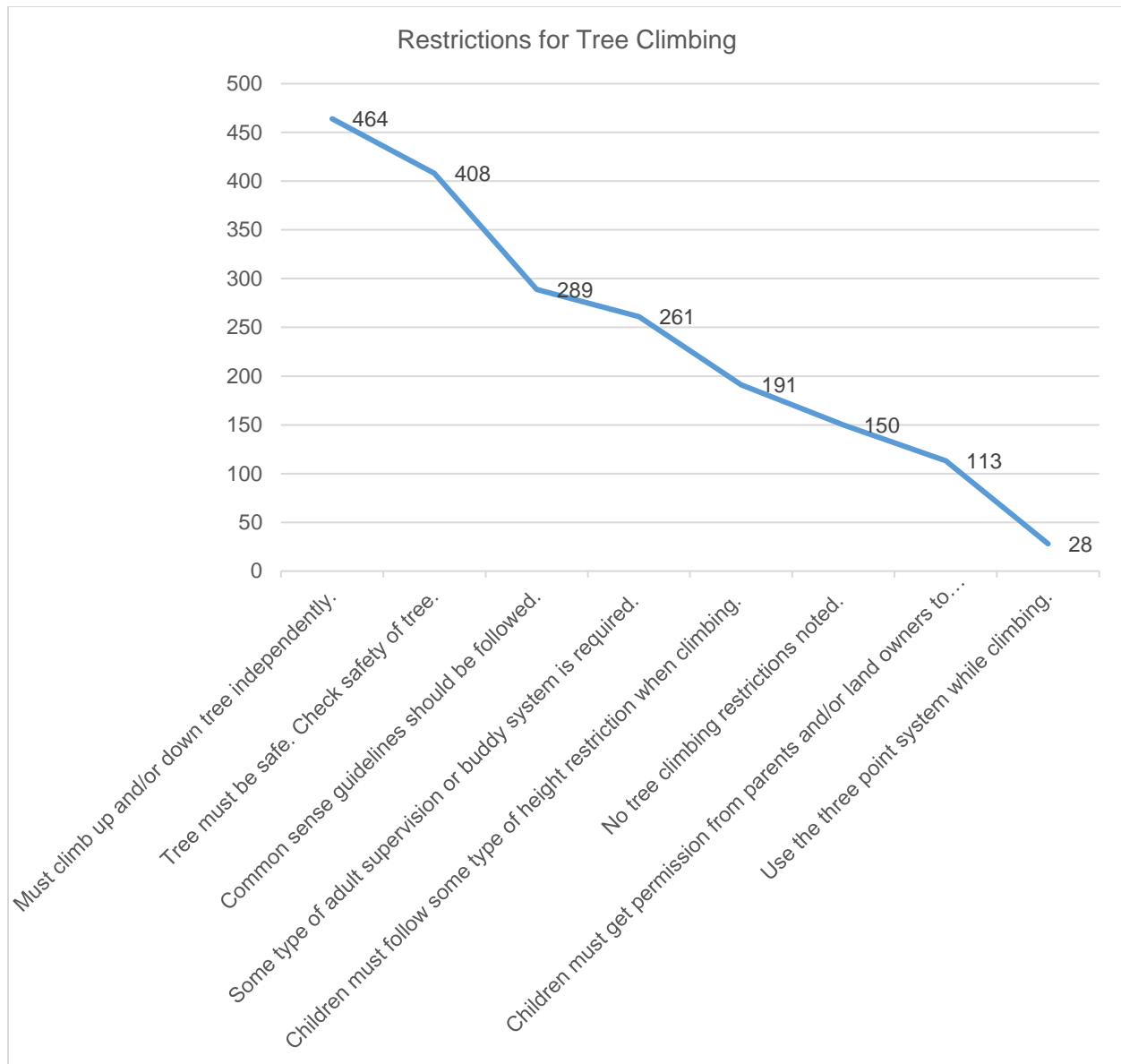


*Figure 6.* Restrictions for Tree Climbing. This figure describes parental tree climbing restrictions.

The most common restriction for children tree climbers was to climb up and/or down the tree independently. One parent said, "If you need me to put you up, it is beyond your skill and you shouldn't be there." Some parents strategize with the child or give advice; however, others rely on the child to figure it out. One parent noted the restriction "helps keep them within their physical abilities but also gives them confidence to test their own limits."

Parents also looked to the physical safety of the tree so both child and tree have less risk of being harmed. Some guidelines included:

- Look for weak branches
- Test tree strength
- Avoid dead branches
- Be respectful of tree
- No climbing if wet or slippery

- Test tree branch on each step
- Check for hanging branches

Many parents had common sense guidelines, such as "be safe", "be careful", "use good judgment", "pay attention", "be aware", etc. Some parents require supervision or a buddy system while climbing. These restrictions vary from needing an adult right there to having a sibling nearby so he/she can call for help. When parents are nearby they may also talk a child through the climb to help identify risks. Younger children typically need more adult supervision while older ones often have fewer restrictions.

Some parents have height limitations for children climbing trees. Some were very specific, such as no taller than the two story house, not over eight feet or ten to fifteen feet, "not higher than my head", etc. Other general restrictions included "don't go higher than you feel comfortable" or "no higher than you can jump". Some clarified "too high" as the top third of the tree where the tree is less developed with smaller branches. Since trees vary, the more general restrictions seemed more popular as a safe height in a mature tree might be much higher than a safe height in a newer tree.

Many parents noted no restrictions for their children when climbing trees. These parents trust the children to know their own body and limitations, after having shown their skills. One parent found their children are "very good at self-regulating." Other children are cautious by nature and limit their own climbing. While many do not have restrictions per se, some parents may be nearby and others may offer advice or encouragement. Several parents mentioned their older children may have no restrictions, while the younger children have more supervision and guidance while tree climbing. One parent remarked, "They know what their bodies are capable of and have never really done anything I considered unsafe." Another said, "Have fun, get messy, make mistakes."

In some families, the children must get permission from their parents or the land owners to climb a tree. Additionally, parents may have restrictions based on attitudes of bystanders. The children need to follow the school or other public property rules for climbing, seeking permission at neighbor's houses and other private areas. Some general guidelines may be followed, such as, "We don't climb inside of gardens, we don't climb small trees and we don't climb when bystanders are upset or angry by the idea." Another parent had similar thoughts, "No climbing neighbor's tree. You will probably scare them." "Don't stress out less risk tolerant adults," limits some children. One parent remarked, "I have a hard time when we are around others, people tend to freak out. Our rule is to not climb in public places when other people are around." Other parents limit tree climbing permission when younger children are nearby in public, as the example may cause children to want to climb. Some parents do not allow neighbor kids to climb, as they "don't want that responsibility."

Many parents reported some type of general rule to use the three-point contact system, meaning at least three appendages (feet and hands) should be attached at all times to the tree, similar to rock climbing rules. One parent explained it, "Three [human] limbs on the tree at all times – two arms and one leg, or two legs and one arm. You cannot fall if you follow these rules!"

Question 15 asked how rules and restrictions impact tree climbing activities. The open-ended question was interpreted in a few ways; some shared how their own rules affect their child(ren)'s tree climbing and others responded how tree climbing has been limited in their local area. A few themes emerged in the responses: parental fears; safety of the child; local restrictions on tree climbing building skills such as self-regulation, independence, and risk negation; and caring for trees and the environment. Two hundred four of the 1,037 responses reported no impact of restrictions on tree climbing.

Some parents (twenty-one of 1,037) commented on their own fears that impact their children's tree climbing experiences. One parent noted, "I feel like my fear could limit them, but I try my hardest to squash it, since I see how much they love it." Another parent recognized, "I know I need to start learning to trust them but I still feel some anxiety when they climb." Many parents tried to curb their own fears to allow their children to experience the benefits of tree climbing, with one parent mentioned, "By not allowing her to climb trees/explore/seek

adventure for that reason [mom's internal anxieties] would be in MY best interest.  Not hers."  One mother noted, "I try to limit what I say and just watch and be there if needed."  Many parents recognized their children would like to climb higher than the parent's comfort.

Parents also put rules and restrictions in place to allow for safety of the child.  Three hundred twenty-five of the respondents mentioned some type of safety concern, expressing the need to learn to follow rules.  One parent mentioned, "I just want my children to consider safety as they explore and learn about themselves and nature."  Another parent remarked, "Our culture's hyper focus on safety is having a damaging effect on our children's ability to self-regulate.  We are basically saying that we don't trust them and if we don't trust them, how will they learn to trust themselves?"  Some safety precautions included wearing appropriate clothing and shoes, testing out the safety of the tree, using common sense, adult inspection of the tree, not climbing too high, giving the child boundaries, minimizing risks, tree selection, setting limits, being able to get into the tree by him/her self, adult supervision, etc. Analogies for safety were made to looking across the street before crossing and playing sports, saying, "Tree climbing is a sport really and without rules and guidelines it becomes unsafe."

In today's world, many recognize that children cannot save the earth without first knowing the earth.  Parents noted this as well. Sobel (1998) said, "If we want children to flourish, to become truly empowered, then let us allow them to love the Earth before we ask them to save it" (para. 46).  Tree climbing is one way to allow children to experience that connection with nature first hand.  A parent mentioned, "They respect the tree itself."  Another noted, "They are responsible for the environment and themselves."   Eighty-three of the responses mentioned considering the health or care of the tree in their open-ended write in responses.

Parents reported limitations on tree climbing in local areas.  At times, there is lack of access to climbable trees, such as no "tree to climb at my kids' public elementary school", bans on tree climbing (at an arboretum, Home Owner Association controlled neighborhood or city property), no access to appropriately sized trees (too small or large), having lower branches of trees trimmed, etc.  A mother expressed concern about signs limiting tree climbing in a natural play area.  "Finding climbable trees is the biggest challenge!"  A parent in New Jersey noted her children are not "allowed to touch the trees in their school playground."  There is also confusion as to knowing "when it's ok and not ok to climb."  At one school, tree climbing is banned due to danger and insurance prohibition.  A "feet on the ground" policy at a local park is causing a family to seek more rural areas with fewer climbing restrictions.  A line painted on the tree shows how high a child can go.  Others mentioned a rule that the child climbs only twice as high as his/her height.

Other parents limit tree climbing as well.  This was also noted in Question 14 responses.  Parents observed tree climbing limited for special events, "social norms", seeking owner's permission before climbing, etc.  A parent mentioned, "I do see some mothers get very nervous or they restrict their child and I see how that affects the child's confidence and belief in himself. He cries, gets nervous too or loses interest."  The negative responses of nearby adults also can restrict climbing.  A "teacher flipped out because he climbed a tree."  Parents noted other adults being annoyed if the child was climbing.   Some families felt "embarrassment.  Less inclined parents tend to watch and stare."  A parent observed caution, "They only climb trees at home so no one will call police or child services."  Children also felt "upset greatly", "mad", "disappointed", "frustrated", etc. when tree climbing was limited.  One parent said "cops get called" if children climb at the local park. One family only climbed trees while camping or at home as there are "too many judgmental people out there telling us how dangerous it is."  More families limited visits to areas that do not allow tree climbing due to fear of confrontation and restricted play.  One said, "The moment you come to a wonderful park and see a giant list of DO NOTS . . . . We choose to enjoy those places for that day and visit places more frequently that allow more opportunity to navigate freely."

Parents had concerns on the limitations noting, "Not letting them climb is the worst you can do"; "More restrictions=Less benefit to child"; and "My children don't want to go places that restrict their play."  The restrictions kept the children "from learning their limits"; "impedes their creativity, dexterity and risk management"; and negatively impacts children being adventurous, intuitive, and creative.  Thankfully, many neighborhoods did not see restrictions on tree climbing.  A mother in South Carolina typed, "We have yet to encounter a space where tree climbing is discouraged."

**Finding 3: Injuries from Tree Climbing.** Injuries can occur when climbing trees; however, injuries occurring from this outdoor childhood activity are minimal. Of the 1,123 participants that responded to the survey question, 94.84% (1,065) reported that their child scraped a knee, elbow, or skin as a result of climbing a tree, 1.16% (13) suffered a fracture, 1.78% (20) endured a broken bone, and 0.71% (8) experienced a dental injury. More serious injuries such as a concussion and coma were also reported with 1.60% (18) experiencing a concussion and 0.45% (5) a coma. Unfortunately, 0.53% (6) reported a fatality; however, other responses by these same participants did not indicate a death, but a positive acceptance of tree climbing. Various other injuries such as stitches, bee stings, splinters, bug bites, bruises, abrasions, twisted/sprained ankles, and tongue biting, were reported by 10.33% (116) (see Figure 7). The data indicated that even though tree climbing can result in minor injuries, it is a relatively safe activity for children.
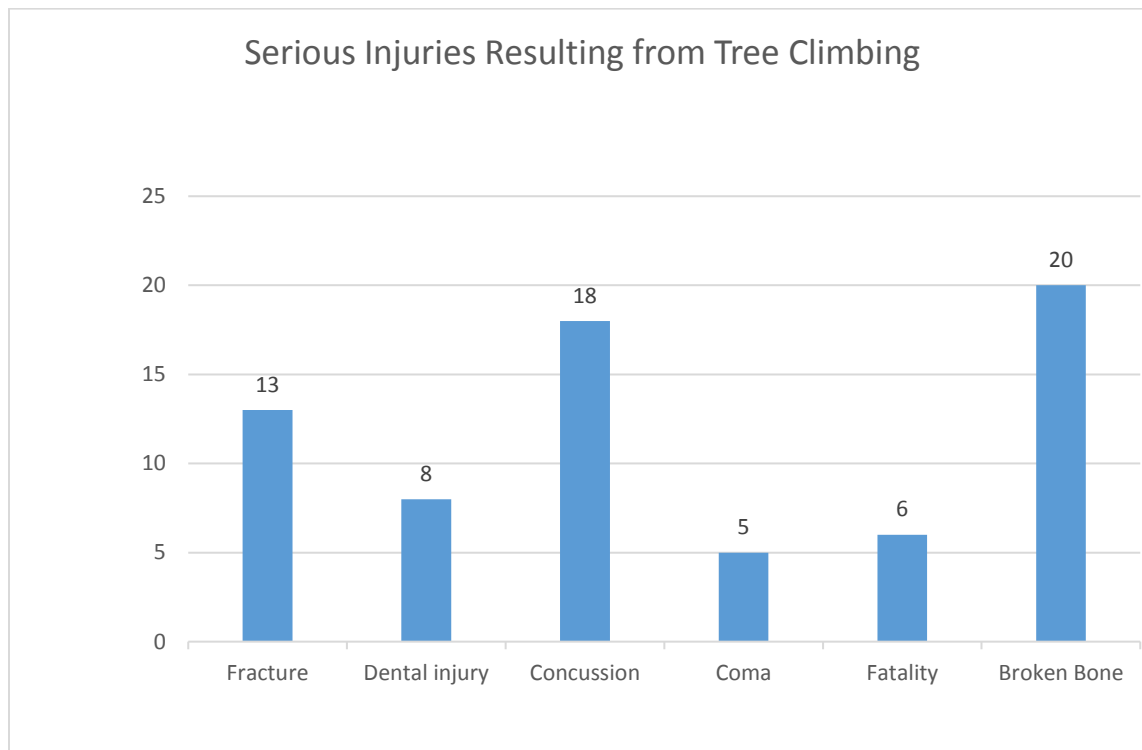


*Figure 7. Injuries Resulting from Tree Climbing. This figure depicts serious injuries that result from tree climbing.*

**Finding 4: Tree Climbing and Resiliency.** Tree climbing affects resiliency in many ways, such as solving problems and decision making (see Figure 8). Questions 17-19 in the survey looked at resiliency. Tree climbing provides children with the ability to adapt in uncertain situations. The data from the survey indicated that 84.2% (1,145) of the respondents feel that tree climbing has some impact, moderate impact, or high impact on a child's ability to adapt (see Figure 8). In Question 19, the following comments potentially substantiate the findings. Parents reported the children are "more adaptable" and "able to roll with sudden change". Children face issues like "a branch that's not sturdy enough to stand on, and find a different way up." Children have the opportunity to "carry on" when faced with difficult tree climbing situations. "Tree climbing presents them with these options at every branch."
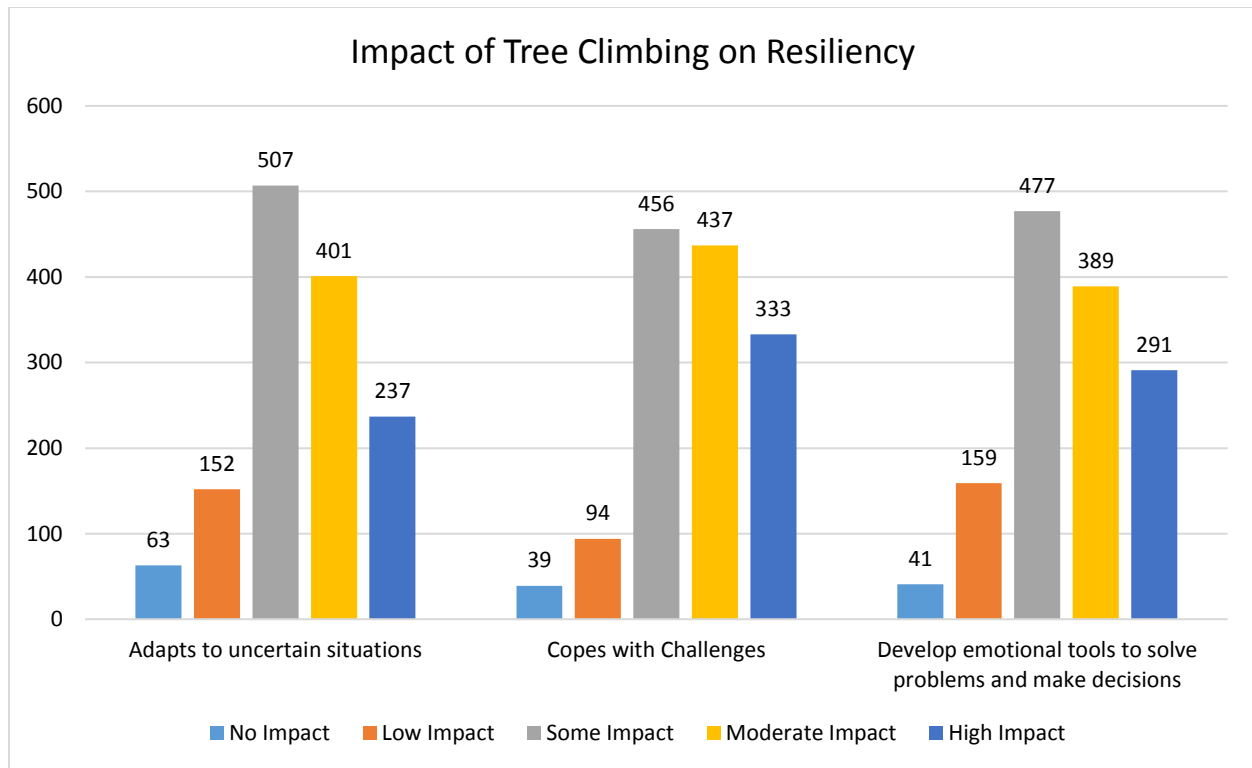
*Figure 8.* Impact of Tree Climbing on Resiliency. This figure demonstrates the effect of tree climbing on resiliency.

Tree climbing also potentially provides children an opportunity to cope with challenges. Tree climbing had some impact, moderate impact, or high impact on facing and conquering new challenges, as evidenced by 90.2% (1,226) of responses. Qualitative parent comments included:

> "Anytime kids have to solve their own challenges and problems they develop resiliency."
> "I believe he is learning to finish what he starts and overcome challenges, because once you're up, you have to figure out how to get down. There are no shortcuts!"
> "Yes, when faced with a challenging problem, they must think outside the box. Maybe calm down and rethink the situation. Ask for help if needed."
> "Willing to take safe risks. Don't give up when something is hard, challenging."
> "Tree climbing challenges them and puts them in all different situations where they learn to look forward to the solution and know that they must work until they find it!"

Tree climbing theoretically provides children with opportunities to develop emotional tools to solve problems and to make decisions. Of the parents responding to the survey, 85.3% (1,157) indicated that tree climbing had some, moderate, or high impact on critical thinking, perseverance, persistence, confidence, and decision making. Parents responded that tree climbing develops "increased ability to think critically" and children were "more determined and also learned not to give up." Tree climbing created "a feeling of accomplishment and confidence in having conquered something." Others mentioned:

> "Try, try again is routinely heard!"
> "He has learned to fail and try again and to overcome fears."
> "My child grows exponentially in terms of confidence and positive self-confidence every time he climbs a tree and successfully navigates the descent unassisted."

Parents mentioned benefits such as thinking "ahead of their actions to the consequences. They know to assess their surrounding for risk and attempt to solve a problem (being stuck on a high branch) before asking for help." Confidence grew "when they climb higher or negotiate a tricky tree. That confidence boosts resiliency." Another mentioned, "They have more self confidence in their ability to take risks because they stretch themselves." They developed "confidence in themselves, courage and ability to adapt and decide." One parent said, "Persistence. Every time he tries he wants to try to go higher." Lastly, "They don't give up!"

## Discussion and Recommendations

Risky play has an important role in the wellbeing and satisfaction of children and in the potential development of their academic and life skills. Parents of tree climbers recognize and accept the risk of tree climbing, knowing the risks and potential injuries are growing experiences for their children. Even though tree climbing can result in minor injuries, it is a relatively safe activity for children. Therefore, the benefits of tree climbing can make the risks worthwhile.

"Risk-taking can, and does, result in positive outcomes" (Little, 2010). Based on the 1,602 parents that completed the survey, the data concluded that tree climbing affords children with the ability to adapt in uncertain situations, provides an opportunity to cope with challenges, and gives children the opportunity to develop emotional tools to solve problems and make decisions. Parents also allow tree climbing for emotional benefits, such as building confidence, helping each other, perseverance, freedom, sharing, peace, meditative, empowering, social activity, and self-awareness.

### Recommendations for Future Studies

This study assessed the benefits and risks of tree climbing on child development and resiliency across the United States. A follow-up study where the focus is placed on one area of the country (region, state, city, or school district) would help provide further guidance and direction.

Although this study reached sixteen hundred and two parents, the majority of survey respondents were female (93%). A male's perspective on the benefits, behaviors, rules, restrictions, injuries, etc. could vary and provide additional insights into the study. Additionally, seeing if perspectives vary by ethnicity could be helpful. Children of respondents to this study spend a lot of time outside. Looking at a larger mix of the general populous might provide additional insight and perspectives to children recreationally climbing trees.

As many tree climbing bans cite liability as a reason for the ban, looking at related court cases would be helpful. Understanding expectations of insurance companies might alleviate public concerns to allow tree climbing on their properties. Using similar questions to understand lawyer, judge, public space provider, environmental educator, and insurance perspectives on the topic might be fruitful. What are reasonable policies that allow tree climbing while still attending to insurance and tree protection needs?

Investigating fears of parents would give another perspective on children climbing trees. Many parents mention not climbing trees in public places because of the judgment of others at the park. What are socially acceptable ways to allow tree climbing and risky play for children? How do these fears impact tree climbing and risky play?

Further examining the risks involved with tree climbing is warranted. Although the majority of reported injuries were minor (scraped knees, broken bones, dental injuries); further investigation is needed to confirm the low incident of injuries during tree climbing. In addition, to the minor injuries reported, 0.53% (6) fatalities were reported although those parental comments did not confirm the fatalities, further follow-up and analysis on the details of these tragic events would be beneficial.

**Conclusion**

This study examined the benefits and risks of tree climbing on child development and resiliency. Parents of children aged 3-13 that climb trees participated in a mixed method survey instrument. The results of the survey assessed four main findings: benefits and impact of tree climbing, rules and restrictions, injuries from tree climbing and tree climbing and resiliency.

According to the parents participating in the study, children afforded the opportunity to be involved in risky play such as tree climbing have the potential to grow socially, emotionally, physically, cognitively, and creatively, and have increased resiliency. Bans on tree climbing and other risky play pose problems such as limiting access to natural spaces, creating fear of participation in adventurous activities, and fewer opportunities to negotiate risk and develop resiliency.

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**APPENDIX A**

**Pilot Link and Communication** ----------------------------------------------------------------------------------------------------------------

Hi-

A few colleagues and I are working on a research project on the benefits and risks of tree climbing. We are doing a pilot of our survey to see if we are missing anything, to make sure it works, and to seek feedback if there are other avenues we should explore.

Would you mind taking the survey for us by Thursday, May 19th? We'd also appreciate it if you have comments about the survey itself to send them to me.

This is a test version of *The Benefits and Risks of Tree Climbing on Child Development and Resiliency*, a survey my colleagues and I designed using SurveyMonkey.
Here is a link to the Survey Pilot: https://www.surveymonkey.com/r/treeclimbingpilot

Thanks so much!

**Survey Link and Communication** ----------------------------------------------------------------------------------------------------------

Greetings!

Do you live in the United States and have children aged 3-13 that climb trees? If so, we need your assistance with a research study we are working on!

One type of risky play that children are exposed to is tree climbing. The purpose of our study and survey is to determine the injuries associated with tree climbing to examine the benefits and risks associated with tree climbing on child development and resiliency.

Please click on the following link and complete the survey: https://www.surveymonkey.com/r/trrclimbing

The survey should take you 5-10 minutes. Also, if you have any fellow friends, family, neighbors or colleagues that also live in the US and have children aged 3-13, please forward this information on. We would appreciate it!
If you have any questions or concerns, please feel free to contact us.

Thanks in advance for your assistance!

**Survey Results** ----------------------------------------------------------------------------------------------------------------------

https://www.surveymonkey.com/results/SM-92M5L7TR/

**APPENDIX B**

**Survey Questions**

1. Do you have a child or children aged 3-13?  Yes  No

2. Do you allow your child(ren) to climb trees?  Yes  No

3. Do you live in the United States?  Yes  No

4. What is your gender?  Female  Male

5. In what state do you live? (Drop down menu of all 50 states)

6. What is your age?
   18 to 24
   25 to 34
   35 to 44
   45 to 54
   55 or older

7. What is the highest level of education you have completed?
   Did not attend school
   Some high school
   Graduated from high school/GED
   Some college
   Graduated from college
   Some graduate school
   Completed graduate school
   Completed post graduate school

8. How old are your children? Check all that apply.
   3 years old
   4 years old
   5 years old
   6 years old
   7 years old
   8 years old
   9 years old
   10 years old
   11 years old
   12 years old
   13  years old

9. Reflecting over the past month, on average how often has your child(ren) played outside each week?  If you have more than one child, use an average of how much time they spent outside over the last month.

   0-3 hours per week
   4-6 hours per week
   7-9 hours per week

10+ hours per week

10. Why do you allow your child(ren) to climb trees? Check all that apply.

    Part of childhood
    Fun
    Connect to nature
    Develop skills
    Negotiate risk

11. Injuries such as broken bones, a concussion, scrapes, and other serious injuries up to including a fatality can result in an accident while tree climbing. Do the benefits of tree climbing outweigh the associated risks?
    Disagree
    Somewhat Agree
    Agree
    Strongly Agree

12. Tree climbing impacts my child in these areas? Rate high to low impact.
    Critical thinking
    Imagination and creativity
    Problem solving
    Self-confidence
    Social interaction
    Dexterity and physical strength
    Cognitive and emotional strength
    Resiliency
    Risk negotiation
    Spatial awareness

13. Does climbing trees help your child grow? How? Please explain.

14. What rules or guidelines do you have as a parent for your children climbing trees? Please explain.

15. How do rules and restrictions impact tree climbing activities with your children? Please explain.

16. Has your child(ren) suffered from any of the following injuries as a result of climbing trees? Please check all that apply.
    Scraped knee, elbow, or skin
    Fracture
    Broken bone
    Dental injury
    Concussion
    Coma

Fatality
Other (please specify)

17. Has tree climbing impacted your child's resiliency?
Adapts to uncertain challenges
Copes with challenges
Develops emotional tools to solve problems and make decisions

18. Has tree climbing helped your child develop resiliency? If so, how? Please explain.

19. Would you like to share any other comments about children climbing trees?

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# Exploring Young Children's and Parents' Preferences for Outdoor Play Settings and Affinity toward Nature

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**ABSTRACT**

In the context of the importance of nature experiences in supporting development during early childhood and toward encouraging the use of natural outdoor settings with young children, research was undertaken to explore potential relationships among parents' and young children's preferences regarding outdoor play settings and young children's affinity towards nature.  Results of this quantitative study show some consistency with prior research, such as children's preference for outdoor play and the influence of activity affordance on their setting preferences, as well as the strong influence of parents' perceptions of safety.  Other results from this study contradict prior research such as the lack of relationship among children's preferences, the frequency of time they spend in natural settings, and their level of affinity toward nature.  Additional key findings include parents' perceptions regarding difficulty in providing nature experiences  as an influence on the frequency of time their young children spend in nature, but not on parents' play setting preferences, and the relationship between parents' preferences and their children's level of affinity toward nature. The small, homgeneous sample used in this study is a limitation, and areas for further research and potential implications are discussed in this context.

*Keywords*: landscape preferences, natural settings, affinity toward nature, parents, young children

The early years are of great importance in childhood development.  It is well-established in the research literature that play and sensory experiences are critical particularly during the first five years, due to the high levels of development during this time period (McCain, Mustard, & McCuaig, 2011; Shonkoff & Phillips, 2000).  Play is well acknowledged within early childhood education as a primary way for meeting children's development requirements (Armstrong, 2006).   Active physical and sensory engagement in their surroundings are also fundamental to young children's development (Elliott, 2010).  Since nature experiences provide rich and varied sensory stimuli, nature experiences are critical to development in early childhood (Wilson, 2012).  Consequently, these physical, psychological, cognitive, and sensory development benefits support Elliott's  (2010) claim that "contact with nature outdoors is as important for health and wellbeing as are daily food and sleep for children" (p. 62).

The importance of natural experiences for young children has long been recognized.  Early educational theorists such as Froebel, Dewey, Montessori, and Steiner emphasized the role of experiences in nature for young children's development and well-being (Elliott, 2010; Wilson, 2012).  As research connecting high quality outdoor environments and children's well-being continues to grow, there is renewed interest at both the policy and practice levels in many countries to encourage access to outdoor and specifically natural spaces.  For example, in England there is a strong policy agenda linked toward quality outdoor play spaces that incoporate natural features (Munoz, 2009).  In the Scandinavian countries and growing elsewhere, there are efforts to provide these nature experiences for young children through an educational context, using mediums such as Forest Kindergardens (Munoz, 2009). The North American Association for Environmental Education has been emphasizing efforts to provide young children with frequent opportunities to explore, observe, and play in natural environments, and there are additional

efforts by numerous federal, state, and nonprofit organizations in the U.S. to reconnect children with nature through education and recreation (NAAEE, 2010).

Natural settings offer the diversity, variety, and open-endedness needed to engage and challenge young children, offering the quality play and sensory experiences that support learning and development (Elliott, 2010). However, natural elements are often absent in outdoor play spaces, in spite of evidence of children's enjoyment of natural spaces and the evidence in support of the positive impacts on health and development (Frost, 1992). Features that allow children to use their imagination and encounter appropriate levels of risk also are often not a part of play spaces (Johnson, 2004). Also missing is the involvement of children in the design process. If incorporated, children may generate ideas that adults have not thought of, resulting in greater diversity of play spaces and elements and also potentially greater use (Philo, 1992). Munoz (2009), in her literature review *Children in the Outdoors*, referenced research that involved children as key actors within the research and design process. She highlighted research by Burke (2005) and by Yanagisaw (2007) that explored the role of children in relation to the design of outdoor play spaces. She also highlighted work by Nairn, Panelli, and McCormack (2003), which advocated for understanding the views and experiences of young people, linking these works to wider discussions regarding children's agency.

While it is critical to understand children's views and experiences regarding outdoor play spaces, parents' perceptions are also important, as they have been shown to be a major determinant of children's outdoor behaviors (Valentine, 2004). Parent perceptions regarding how safe an outdoor area is, for example, have been linked to the amount of time children spend outside (Mackett & Paskins, 2004), and parental perceptions are a primary constraint to children's use of the outdoors (Carver, Timperio, & Crawford, 2008). In a range of contexts, parents' attitudes have a strong influence on children's activities and attitude development (Hutchinson & Baldwin, 2005). Particularly in the early years, children's play is influenced by the environments, opportunities, materials, and equipment available to them (McFarland, Zajicek, & Waliczek, 2014). Consequently, young children's time in natural settings is typically dependent on the extent to which their parents or caregivers provide opportunities for and encourage time in these settings, as they are considered "gatekeepers" to children's activity outdoors (Beets, Vogel, Chapman, Pitettie, & Cardinal, 2007).

Parents' attitudes and behaviors regarding the outdoors and nature also may be strong influences on children's attitudes. Social learning theory (Bandura, 1974) suggested children's behavior is shaped through observing those around them, and they often adopt the attitudes and behaviors they see modeled by those near them. Thus, if parents exhibit positive attitudes toward spending time in nature, children also may exhibit positive attitudes, acting in ways that prompt positive reinforcement from parents, similar to what research has shown in the case of parents' and children's attitudes about physical activity and food habits (McFarland, Zajicek, &Waliczek, 2014).

There are additional theories relevant to parents' influence on children's play in natural settings, beyond the direct influence of parents' gatekeeping role. Reed's (1996) joint attention theory suggested young children first attend to features in the world around them that others are noticing; building from these experiences, children begin to control their own attention by pointing to or asking questions about the world they encounter. Through this process, "children learn what people around them consider worth noticing and how they appraise it, and they find their own spontaneous interests either encouraged, reprimanded, or ignored" (Chawla & Derr, 2012, p. 529). Consequently, they come to view nature as "a place of fascination that a family explores and appreciates together, a scary place that children are forbidden to enter, or something barely noticed as children ride by in the car" (Chawla & Derr, 2012, p. 529). Eccles and Wigfield's (2002) expectancy value model of motivation is also helpful for considering parental influence on children, beyond parents' direct "gatekeeping" influence. This model suggested social interactions within cultural contexts influence not only how children directly experience the world, but also how they integrate the values they are developing into their identity. Thus, parents become an important influencing factor on the extent to which children value nature experiences and identify with nature.

The term environmental identity is used by Clayton and Opotow (2003) to describe "a sense of connection to some part of the non-human natural environment… a belief that the environment is important to us and an important part of who we are" (p. 45). Kals, Schumacher and Montada (1999) use the related term affinity toward nature to

describe the emotional bonds and cognitive interest in nature. Their work suggests time in nature during childhood is a key predictor of one's affinity toward nature (Kals, et al., 1999; Muller, Kals, & Pansa, 2009). Thus, these early experiences in nature along with the influence of people in their immediate sphere are very important in shaping an environmental identity and affinity toward nature, but also as a basis for future motivation to protect the environment. Studies reviewed by Chawla and Cushing (2007) lead them to suggest that "nature activities in childhood and youth, as well as examples of parents, teachers, and other role models who show an interest in nature, are key 'entry-level variables' that predispose people to take an interest in nature themselves and later work for its protection" (p. 440). Research by Kals, et al. (1999) similarly show that one's emotional affinity toward nature is a strong a predictor of nature-protective behavior.

Consequently, because parents influence young children's time in and attitudes toward being in natural settings (Valentine, 2004), understanding parents' preferences and attitudes regarding outdoor play settings and specifically nature play settings could be a significant factor in increasing the time young children spend playing in natural settings. Increasing time in natural settings is desirable from an environmental perspective (Kals, et al., 1999), but also due to the range of other physical, cognitive, and socio-emotional outcomes associated with nature play. Also important is understanding children's preferences. Efforts to encourage the use of natural settings need to take into consideration parents' perceptions, but also involve efforts to provide access to spaces that children themselves want to use (Munoz, 2009). It is in this context that the following exploratory study was conducted, with the primary intent of informing future research directions. Additionally, results from this study might offer some insight into avenues for encouraging parents and caregivers to provide time and access to nature for their young children, as well as offer potential guidance for park/land managers who seek to make their settings more feasible and appealing for use by parents and young children.

**Purpose**

The purpose of this study is to explore potential relationships among parents' and young children's preferences regarding outdoor play settings and young children's affinity towards nature. Specifically, the following research questions guided the study:

1. Is there a relationship between young children's outdoor play setting preferences and their level of affinity toward nature?

2. Is there a relationship between parents' and their young children's preferences regarding outdoor play settings? Is there a relationship between parents' preferences and their young children's level of affinity toward nature?

3. Do any of the following variables significantly predict parents' preferences regarding outdoor play settings for their young children: their recognition of benefits of playing in nature for young children; perception of difficulty in using natural settings for outdoor play with their young children; time they spend as adults in nature-based outdoor recreation; and time they spent as a child playing in nature?

4. Is there a relationship between the frequency of time a young child spends playing in natural settings and his/her outdoor play setting preference? Is there a relationship between the frequency of time spent playing in natural settings and his/her level of affinity toward nature?

5. Do any of the following variables significantly predict the frequency of time young children spend playing in natural settings: parents' recognition of benefits of playing in nature; parents' intentions toward providing time for their children to play in nature; parents' perception of difficulty in using natural settings for outdoor play with their young children; time parents spend currently in nature-based outdoor recreation; and time parents spent as a child playing in nature?

## Methodology

### Participants

Participants consisted of 37 three- through six- year old children, and their parents (either their mother or their father). This convenience sample was obtained through an invitation to participate provided to the parents of preschool and kindergartners at a small, local school (located in northern Minnesota). All 40 parents of preschool and kindergarten children were invited to participate, and all but 3 accepted the invitation to participate. In exchange for providing access to school families, the preschool and kindergarten teachers received a gift certificate for purchasing classroom materials of their choice. Due to the location of the school, all participants were Caucasian; and while gender was not a focus for this study, the number of male and female child participants were approximately equal.

### Instruments

The instrument for the child participants was a question guide that accompanied a set of 16 photographs. The question guide asked children about where they preferred to play and why, as well as asked them which of the photographs were places they would or would not like to play and why. The photographs had been used in prior exploration of educator preferences' regarding outdoor settings for use with young children; see (x for blind review) (2012) and (x for blind review) (2014). All photographs were from late spring and none contained people or wildlife, so as to keep these factors from potentially influencing preference selections. The photographs were of four outdoor setting types found within the part of the state where the early childhood educators are located: water, woods, open field/grassy area, and park. There were four photographs in each setting type, and in each setting type there were photographs with maintained aspects and photographs that were primarily natural (undeveloped or unmaintained, based on the human influence setting attribute, as in Kaplan, 1985). See Table 1 for a description of the 16 photographs. Permission was granted to use the photos in the study, but was not granted by the photographer for publication due to copyright reasons. In addition to the question guide and photographs, an instrument measuring affinity toward nature (Rice & Torquati, 2014) was also used. This instument untilizes puppets, which is a method used with young children that has demonstrated reliability and validity (Denham, 2006; Elder, 1990). For each item, the child is shown two identical puppets and with each puppet a statement is made (for example, this boy/girl likes to play outside; this boy/girl likes to play inside). Then the child is asked, "Which one is more like you?" Each item is scored a 0 or 1, based on if they are like the boy/girl who likes to play inside v. outside; items are totaled, with higher scores indicating a stronger affinity toward nature.

The parent instrument was a questionnaire that was accompanied by the same set of 16 photographs that were used with the children. The questionnaire contained prompts for the photographs (which photographs were places they most and least preferred for their children's outdoor play and why), as well as items measuring recongition of the benefits of outdoor play in natural settings and intention toward providing time for their children to play in natural settings (scored on a response format of 1 to 7); perceived difficulty in using natural areas as places for their young children's outdoor play (scored on a response format of 1 = very difficult to 5 = very easy); time spent in nature as an adult and as a child (measured by frequency on a scale of 1 = Never, 2 = rarely/approximately once a year, 3 = occasionally/once a month, 4 = often/weekly, and 5 = very often/daily or almost daily); and the amount of time their young children spends in nature (scored on the same response format prior item).

### Procedures

Following approval from the university's Institutional Review Board, a letter inviting participation in the study was sent home with preschoolers and kindergartners. Parents who consented to participation were also asked for consent for their children to participate. Parents received a set of photographs and were asked to complete the self-administered parent questionnaire. The researcher visited the children's classrooms and administered the instrument to the children individually, in a location away from the other children but within the view of the teacher. The administration of the instrument with the children took approximately 5-10 minutes per child.

**Results**

**Young Children's Outdoor Play Setting Preferences, Affinity toward Nature, and the Relationship between Them**

Regarding outdoor play setting preferences, when children were asked if they preferred playing indoors or outdoors, the majority (75.8%) indicated outdoors.  Regarding the 16 photographs of the outdoor play settings, the three settings with the highest frequencies of being selected as the *most* preferred play settings were the playground (photo 1), the pebbly shoreline of a large lake (photo 16), and the small lake, with a dock and forested backdrop (photo 15).  The three settings with the highest frequencies of being selected as among the three *least* preferred were the open area containing grass and wildflowers with no path (photo 8), the open forest floor containing underbrush and a fallen tree with no path (photo 12), and a stream dotted with small rocks, and a narrow foot bath leading to the water surrounded by woods/brushy vegetation (photo 13).   (See Table 1.)

Table 1
*Description of Outdoor Setting Photographs and Preferences\**

| Outdoor Setting Type | Label | Photograph Description | Human Influence Attribute | Freq. Selected by Children as *Most* Preferred | Freq. Selected by Parents as *Most* Preferred | Freq. selected by Children as *Least* Preferred | Freq. selected by Parents as *Least* Preferred |
|---|---|---|---|---|---|---|---|
| Water | | | | | | | |
| | 13 | Stream dotted with small rocks; water appears still; wooded/brushy vegetation on edge; narrow foot path leading down to water's edge | Natural | 7 | 7 | 7 | 7 |
| | 14 | Stream cutting through large rock outcropping, forming small waterfalls; dense forest/vegetation along rock outcropping | Natural | 9 | 5 | - | 12 |
| | 15 | Small lake with calm water; trail alongside edge of lake; small dock and shelter with canoes; forested backdrop | Maintained | 10 | 12 | 2 | 5 |
| | 16 | Shore of larger lake (likely recognizable as Lake Superior from its distinct pebbly beach), with forested shoreline | Natural | 11 | 17 | 2 | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Forest | | | | | | | |
| | 9 | Dense forest with a wide paved trail winding through; visually "open" due to the wideness of trail, allowing enough sun to create shadows on pavement | Maintained | 4 | 2 | 4 | 7 |
| | 10 | Dense forest; narrow foot path winding through; very little light appears to be shining through forest cover | Natural | 1 | 11 | 3 | - |
| | 11 | Open forest with a mix of grasses/vegetation on forest floor; crushed gravel path lined by wooden fencing | Maintained | 2 | 1 | 3 | 3 |
| | 12 | Open forest, with vegetation, underbrush, and fallen trees on forest floor; no path | Natural | 3 | 8 | 7 | 2 |
| Open Field/ Grassy Area | | | | | | | |
| | 6 | Open natural area, with tall grasses, wildflowers, and a small wet area visible; several trees in the background | Natural | 7 | 1 | 2 | 8 |
| | 5 | Open natural area, with tall grasses, wildflowers, and a small area visible; several trees and a building in the background; gravel road leading to and alongside grassy area | Maintained | 2 | 2 | 5 | 4 |
| | 8 | Open area of grass and wildflowers, with a single tree near the foreground; no paths | Natural | - | - | 8 | - |
| | 7 | Open area of grass and wildflowers, with a | Maintained | 6 | 3 | 5 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | single tree near the foreground; a gravel path with a wooden bridge midway | | | | |
| Park | | | | | | |
| | 4 | Open area with a mix of tall grass and wildflowers, with a forested background; park bench that seems almost hidden by long grass | Natural | 1 | - | 2 | 4 |
| | 3 | Open grassy area, with several park benches scattered about; grass is very short and appears mowed | Maintained | 5 | 1 | 3 | 11 |
| | 2 | Open area, with several large trees dotting foreground; pavilion with picnic tables; forested background; grass appears mowed | Maintained | 3 | 2 | 4 | 6 |
| | 1 | Playground on a raised woodchip-filled area, with mowed grass and trees in background | Maintained | 21 | 20 | - | 1 |

*Frequency obtained using children and parents' three most and least preferred settings*

To further summarize outdoor play setting preferences, selections of the most and least preferred settings (the setting they selected first) were re-coded by outdoor setting type (water, forest, open field/grassy area, park) and also by human influence attribute (natural or maintained, as in Kaplan, 1985). The most preferred outdoor play setting by setting type was park (46%) and the most preferred outdoor play setting by human influence attribute was maintained (61%). (See Table 2.) Children were also asked about why they choose the photographs they did (see Table 3), and also about what they would do in the settings they selected as most preferred. Children frequently indicated a reason for their preferences that related to an activity (settings most preferred were conducive to a desired activity, and settings least preferred were not conducive or had an element that was a barrier to the desired activity). Children most frequently indicated a general movement as to what they would do in the settings they selected (run, jump, splash, hop, slide, etc.). Children also frequently indicated a specific nature-based activity (for example, listen to frogs, hike, play in the leaves, catch frogs and turtles, fish, hop on rocks, look at nature, walk through the grass, collect things, pick flowers, skip rocks, take pictures, walk on the logs). In addition, but with less frequency, children indicated a non-nature based activity (such as play on playground, hide and seek, baseball, jump on benches, ride four wheelers, bike). There were two responses indicated only once: sit and talk with friends and sit and rest.

Table 2
*Preferences by Outdoor Setting Type and Human Influence Attribute*

|  | Percentage of Children Selecting Setting as Most Preferred | Percentage of Parents Selecting Setting as Most Preferred |
|---|---|---|
| **Outdoor Setting Type** | | |
| Park | 46% | 44% |
| Forest | 15% | 31% |
| Water | 39% | 19% |
| Open field/grassy area | -- | 6% |
| **Human Influence Attribute** | | |
| Maintained | 61% | 60% |
| Natural | 39% | 40% |

The mean level of affinity toward nature for the child participants in this study was 6.54 (SD = 2.50). There was not a significant relationship between level of affinity and outdoor play setting preference as measured by setting type (water, forest, field, park), $F(2,33) = .44$; $p = .65$, nor was there a significant relationship with preference as measured by human influence attribute (maintained v. natural), $t(31) = .01$; $p = .99$. Nor was there a significant relationship between level of affinity and specific setting chosen as most preferred, $F(8,32) = .60$; $p = .76$. There also was not a significant relationship between selection specifically of playground as most preferred setting and level of affinity, $t(31) = .50$, $p = .88$. This suggests children's level of affinity toward nature may not be associated with their outdoor play setting preference, and that children who prefer playing in nature do not necessarily have higher levels of affinity toward nature. Likewise, children could have high levels of affinity toward nature even if they preferred maintained rather than natural outdoor play settings, or if they preferred specifically playgrounds over playing in nature.

**Parents' Preferences and the Relationship of These Preferences with Young Children's Preferences and Affinity toward Nature**

Regarding the 16 photographs of the outdoor play settings, the three settings with the highest frequencies of being selected by parents as the *most* preferred play settings for their children were the playground (photo 1), the pebbly shoreline of a large lake (photo 16), and the small lake, with a dock and forested backdrop (photo 15). The three settings with the highest frequencies of being selected as among the three *least* preferred were the stream cutting through rock outcropping with small waterfalls and dense forest background (photo 14), the open, mowed grassy area with park benches (photo 3), and the open natural areas with tall grass and wildflowers and a small wetland (photo 6). (See Table 1.) When recoded by setting type and human influence attribute, the most preferred outdoor play setting was park (44%) and the most preferred outdoor play setting by human influence attribute was maintained (60%). (See Table 2.) Parents also were asked why they choose the settings they did (see Table 4). The opportunity to learn about nature was the reason most frequently given as for why they selected their most preferred settings. The most frequent reasons given for why they selected their least preferred settings were unsafe and lack of things to do.

Table 3
*Characteristics of Child-Preferred Outdoor Settings*

| Reasons Why Most Preferred (frequency indicated) | Reasons Why Least Preferred (frequency indicated) |
|---|---|
| Opportunity for activity (51) | Obstacle to/Interference with/Lacking opportunity for activity desired (rocks in way of swimming, grass too tall for running, too many puddles, too many trees to run into, trail to tiny to walk on, too many benches to trip on/run into; no frogs or animals to find and take care of, no water to swim in, no playground to play on) (23) |
| Liked it for a natural element that was not connected to activity ("the clouds," the waterfall" "the trees" etc) (5) | Unsafe/Setting where you could get hurt (could get lost, could get stuck, could trip, trees could fall on you, ticks could get on you, could get scratched, could slip, could get hit by a car [paved path often perceived as a road], water too deep, bears, crocodile, parents think it is unsafe, bridge doesn't look safe) (22) |
| Contained human element that facilitated desired activity (because there is a dock for our boat, because there is a picnic shelter for drinking punch, because there is a bridge get across) (3) | Appearance/Visual characteristics (doesn't look good, water looks green, don't like fog, looks like it could rain, looks scary, looks dark, can't see well) (12) |
| Opportunity for resting (2) | |
| Opportunity for interaction with others (2) | |

There did not appear to be a relationship between a parent's most preferred setting and his/her child's most preferred setting as measured by setting type (water, forest, field, park) (Pearson Chi Square = 90.13; p = .07), nor by specific setting selected as most preferred (Pearson Chi Square = 1.59, p = 95). However, there was a significant relationship between parent and child preferences as measured by human influence attribute (natural v. maintained), (Pearson Chi Square = 4.17; p = .04). This suggests that parents and their children generally had similar preferences regarding natural or maintained outdoor play settings; parents who preferred natural settings had children who also preferred natural settings, for example.

In addition, there was general overlap in children's and parents' play setting overall preferences, as the three most preferred settings across parents and children were the same (same three photographs were most preferred, as well as park as most preferred setting type and maintained as most preferred human influence attribute). In contrast, least preferred settings were not similar across parents and children. There was some overlap, yet also some distinct differences, in characteristics of preferred settings. While children most frequently listed a specific activity (look for bugs, balance on the rocks, pick flowers, bike on the path, play on swings) as the reason for choosing a particular setting, parents most often indicated the more general response of "learn about nature" (different in specificity, yet both activity-oriented). Regarding characteristics of least preferred settings, children most frequently indicated the setting lacked the opportunity for the desired activity, while parents most frequently indicated lack of safety as the reason for a setting being least preferred.

There was a significant relationship between parent's outdoor play setting preference as measured by setting type (water, forest, field, park) and his or her child's level of affinity toward nature, F(3,27) = 5.08; p = .01. Parents' who preferred forests as the outdoor play setting for their children had children with the highest level of affinity (M =

8.11, SD = 1.17). This level of affinity was significantly higher than children whose parents preferred water (M = 4.60, SD = 2.88) and field (M = 4.00, SD = 1.41) as setting preferences, but not significantly different from the level of affinity of children whose parents preferred playgrounds (M = 7.17, SD = 1.99). However, there was not a significant relationship with outdoor setting play preference as measured by human influence attribute (maintained v. natural), t(36) = 1.06; p = .30. This suggests children's level of affinity toward nature may not be associated with their parents' general outdoor play setting preference regarding natural or maintained outdoor settings; parents who prefer having their children playing in natural settings may not necessarily have children with higher levels of affinity toward nature.

Table 4
*Characteristics of Parent-Preferred Outdoor Settings*

| Reasons Why Most Preferred (frequency indicated) | Reasons Why Least Preferred (frequency indicated) |
| --- | --- |
| Opportunity to learn about nature (15) | Unsafe (ticks, bugs, moving water, falling trees, would require constant supervision, allergic reactions) (29) |
| Setting is perceived as what children would enjoy or be drawn to (12) | Lack of things to do (9) |
| Opportunity for interacting with other children (5) | Difficult to navigate or move through (4) |
| Safe (5) | |
| | Not conducive to creative play or free play (3) |
| Opportunity for exercise, physical development, fresh air (4) | Setting was unpredictable (3) |
| Reminded them of a familiar and well-liked place (such as their cabin) (4) | |
| Opportunity for discovery, mystery or adventure (3) | |
| Variety (visually and in terms of activity) (3) | |

**Predictors of Parents' Preferences regarding Outdoor Play Settings for their Young Children**

None of the following variables significantly predicted parents' preferences regarding outdoor play settings as measured by setting type (forest, water, field, park): recognition of benefits of playing in nature (F(3,31) = .96; p = .43); perceived difficulty of using natural settings for outdoor play for their young children (F(3, 30) = .33; p = .81); time they spend as an adult in nature-based outdoor recreation (F(3,31) = 1.89; p = .16); and time they spent as a child playing in nature (F(3,31) = .50; p = .69). Nor did the variables as a set predict setting preference (Wilks' Lambda = .63; p = .46). Similarly the variables did not significantly predict parents' preferences as measured by human influence attribute (natural v. maintained) as a set (Wilks' Lambda = .91; p = .66), nor individually: recognition of benefits of playing in nature (F(3,31) = .28; p = .60); perceived difficulty of using natural settings for outdoor play for their young children (F(3, 30) = .09; p = .76); time they spend as an adult in nature-based outdoor recreation (F(3,31) = 1.75; p = .20); and time they spent as a child playing in nature (F(3,31) = .06; p = .81). These results suggest that parents' preferences regarding natural play settings v. parks or playgrounds seem to be independent of their recognition of the benefits of nature play, their perceptions regarding difficulty in providing nature play experiences, and the time they spend now or as a child in nature.

**Time Spent Playing in Nature and the Relationship with Young Children's Preferences regarding Outdoor Play Settings and with Their Level of Affinity toward Nature**

The mean response regarding the frequency of time young children are playing outdoors in natural settings corresponded to a rating of occasionally (several times a month). For the two parents who indicated their children played daily in natural settings, one indicated 10 minutes per day and the other indicated 40 minutes per day. The frequency of time young children spent playing outdoors in natural settings was not related to their outdoor setting play preferences ($F(2,27) = .02$; $p = .98$ when preference measured by setting type, and $F(1,27) = .09$; $p = .77$ when measured by human influence attribute. The frequency of time young children spent playing in nature also was not related to their level of affinity to nature ($r = -.19$; $p = .34$). This suggests that children's preferences for outdoor play settings and their level of affinity toward nature may be independent of how often they are playing in natural outdoor settings (for example, children who play more often in nature do not necessarily tend to prefer more natural play settings nor do they tend to have higher levels of affinity).

**Predictors of Time Spent Playing in Nature**

The following variables significantly predicted frequency of time their young children played outdoors in natural settings: perceived difficulty of using natural settings for outdoor play for their young children ($r = .70$; $p < .001$); intention toward providing their children with playtime in natural settings ($r = .54$; $p < .01$); time they spend as an adult in nature-based outdoor recreation ($r = .82$, $p < .001$); and time they spent as a child playing in nature ($r = .48$; $p < .01$). Parents' recognition of benefits, however, was not a significant predictor ($r = -.18$; $p = .32$); there was little variation on this item, with parents in strong agreement regarding the benefits of nature play for their young children. These results suggest that the frequency of time young children play in natural settings is influenced by parents' perception of the difficulty of and intentions toward doing so, as well as by the time they spend now and as a child in nature.

**Discussion**

When asked which they preferred, the children in this study indicated a preference for outdoor rather than indoor play. This is consistent with prior research that indicates children generally view the outdoors as an important place to play (Burke, 2005). Children in this study also indicated a preference for playgrounds as their preferred outdoor play setting. This finding, however, is in contrast to numerous studies that indicate children prefer a predominance of natural elements (Korpela, 2002). This difference, however, may be due to age, as the children studied in this body of literature are often older than the preschool-aged participants of this study, and often studies in this body of literature focus on children from urban environments (Wells & Evans, 2003). However, important to note is the variety of preferences exhibited by the children studied. For almost every setting, there were children who identified that setting as among their most preferred settings and children who identified that as among their least preferred. Homes and Procaccino (2009) found that not only are preferences varied, children's play preferences change even within the same play period. Collectively, this serves as a reminder that there may not be a "one size fits all" approach to designing or providing access to natural play spaces that will be universally appealing to young children across a range of time (be that within one day or across seasons).

Children's preferences in many cases seemed guided by affordances, particularly what specific activities children would like to do in a particular setting; this is consistent with how children often view their environments in terms of the potential they offer for desired activities (Keeler, 2009). O'Brien's (2005) study showed similar findings, with children linking places they prefer with opportunities for things to do. There was a pattern of responses among children that offers the potential for further research. Many responses regarding why they disliked a particular setting included the phrase "too much" (rocks, grass, puddles, trees, etc.). Sometimes the phrasing included something that signaled it was related to interference with a desired activity (too many rocks to bump into when swimming), but other times the phrase was used in a more open-ended manner. It would be interesting in future research to probe this response further, if a similar pattern in responses emerges. There were some children whose preferences seemed shaped by aesthetics (clouds looked pretty, liking the color of the sky, beautiful flowers), as well as quite a few children whose preferences seemed guided by how safe they perceived the setting to be, which,

interestingly, is a commonly-used characteristic by parents in their views regarding suitability of outdoor spaces (Munoz, 2009). While more research exploring the influence perceived safety has on preferences of young children is needed, it seems this finding supports Reed's (1996) joint attention theory. Potentially, children are modelling cues from parents, where they see or hear parents appraising outdoor settings in terms of how safe they appear to be. It also seems potentially reflective of a society that is growing more and more adverse to risk.

The results of this study did not show a relationship between young children's outdoor play setting preferences and their affinity toward nature. This suggests, for example, that children who preferred playgrounds over a natural setting did not necessarily have less affinity toward nature than children who preferred playing in a natural landscape. Thus, a preference for playing on a playground may not be problematic from an affinity toward nature perspective (but potentially problematic in terms of the other outcomes associated with play in natural settings). This finding may be related to age of the participants in this study, as some theorists have suggested that an affinity toward nature is innate, whereas others suggest it is heavily influenced by direct experiences with natural environments and mediated by culture (Kellert, Heerwagen, & Mador, 2008). Additionally, their preference for playing on playgrounds also may not be as concerning from a "connecting children and nature" perspective as we might think, as almost all of the children who selected the playground as their first preference selected second and third choices that were natural settings. Further, they were able to identify something they would like to do in that natural setting that was nature-based (with the exception of two children, one of whom did not select a natural setting in addition to the playground, and the other who selected natural settings as the second and third preference, but identified only non-nature activities for what he/she would do in that setting: talk with friends and "battle"). This suggests the potential and perhaps need for further reflection and research regarding the common assumption in today's society that children are disconnected from nature. For example, it would be useful to investigate the trajectory of this nature deficit in terms of how early it starts and how it progresses, as well as at what points negative impacts are manifested. Also, further research in this area can guide playscape designers and park managers in their decisions to include or not include playground equipment in their playscapes, when considering factors such as intended age and desired outcome.

Results from this study regarding parent preferences suggest similarities with children's preferences in general (both groups as a whole preferring playgrounds followed by lake shorelines), but there were also differences. For example, a number of children preferred the setting where a stream cut through rock outcropping creating small waterfalls; yet this setting was among the least preferred by parents. Or for example, many children liked the open area that contained wildflowers and a small wetland, but this setting was among least preferred by parents. Similarly, many parents did not like the grassy area dotted with park benches, indicating a lack of things for their children to do; yet, many children liked this setting and had ideas for using it for hide and seek or tag games, for hopping from bench to bench, and for "drinking punch and resting." These findings underscore the point made previously regarding the importance of involving children in the design process, as they extend the boundaries of possibilities generated by adults (Philo, 1992).

The results also indicate parents who prefer natural settings for their children's outdoor play have young children who also prefer natural settings. This again seems consistent with the joint attention theory (Reed, 1996) and Chawla and Derr's (2012) application of it in a parent-child nature context. Additionally, parent preferences based on setting type were related to their children's affinity toward nature. Parents who preferred forests had children with significantly stronger levels of affinity toward nature than parents who preferred the other setting types of water, fields, and parks. Further research is needed to understand this relationship, as potentially there is an additional variable moderating or meditating this relationship. For example, perhaps parents who prefer forests for their children's play may differ from parents who prefer other settings in terms of the type of outdoor recreation in which they personally engage or in terms of patterns of family engagement with nature. Likewise, further research is needed to understand what shapes parents' perceptions of preferred outdoor play settings, as results from this study suggest it is not related to the extent to which they recognize benefits of nature play, nor to time they spend now or time spent as a child in nature, nor to how difficult they perceive providing nature experiences to be. An understanding of this relationship between parent preference and their children's level of affinity toward nature, combined with an understanding of predictors of parents' preferences, could guide efforts to shape parents' preferences toward settings that foster affinity toward nature within children.

Based on the findings from this study, it seems that children's preferences for outdoor play settings and their level of affinity toward nature potentially may both be independent of how often they are playing in natural outdoor settings. The children in this study whose parents' indicated they often played in natural settings did not prefer natural play settings more than children who infrequently played in natural settings; likewise, they did not have stronger levels of affinity toward nature than those who infrequently played in nature. In essence, frequency of time in nature was not a predictor of children's affinity to nature. These findings are somewhat contradictory to the literature suggesting childhood time nature has a primary predictor of affinity (Kals, et al., 1999; Muller, et al., 2009). This may be a function of the young age of the participants in the study. If so, then while a lack of time playing in natural settings may not be problematic from an affinity toward nature perspective at this age, a continuing lack of time in nature as they develop could potentially result in declining affinity as they grow older. Further research investigating this relationship over time or with older children would be useful. Or perhaps this lack of relationship between time in nature and affinity is a explained through theories suggesting the development of children's relationships with the environment is influenced not just by frequency of time in nature, but also by qualities of the places they encounter and the social contexts of their experiences (Gibson & Pick, 2000). In terms of these social contexts, Reed (1996) uses the categorization of free action, promoted action, and constrained action as ways in which children's experiences of nature may differ. Free action experiences are where children pursue their own interests and curiosities, thereby learning their own capacities and boundaries; these experiences are unstructured and child-directed. Promoted action experiences are when parents or other adults actively encourage outdoor play in nature and make available opportunities for time in natural areas; in promoted action experiences, adults communicate to the children around them their value for nature through their actions and interactions. The constrained action category includes experiences that encourage children to think of nature as something separate from them and more of an abstract concept; these experiences may allow children to come to know nature "secondhand" or not at all. The instrument used with parents in this study asked about frequency of time, but not about the social contexts of these nature experiences. Thus, future research exploring the relationship between time in nature and affinity might include asking parents to categorize these encounters using Reed's framework. This would allow for investigating how the relationship between time and affinity changes when accounting for whether this time in nature is spent in free action or promoted action, with implications for practice stemming from a more nuanced understanding of this relationship.

Parents' recognition of the benefits of nature play for young children did not predict frequency of time children played outdoors in natural settings. This in contrast to findings of McFarland, et al. (2014), where parents' attitudes toward nature and toward their children's outdoor recreation were related to the amount of time their children spent in free play outdoors. These authors, however, note, "Parental attitudes only accounted for a part of the differences observed in the types of activities in which their children participated" (p. 535). They recommend future research should include measures of parental intentions as well as parents' own time in outdoor activity, speculating that while parents may have positive attitudes toward children spending time in outdoors and in nature, children may not participate if parents are not modelling outdoor free play. Findings from the study at hand, however, did include a measure of parents' intentions, as well as a measure of time parents spend in outdoor recreation in nature, both of which were significantly related to frequency of time their children spent playing in nature. These findings support the speculation of McFarland, et al. (2014), as well as their recommendation that "simple programs aimed at attitude improvement may not be enough to promote their influence toward their child's outdoor recreation (p. 535). What may be helpful, however, would be programs that reduce parents' perceptions regarding the difficulty of providing their children with nature experiences, as these perceptions are likely related to parental intentions, both of which were significant predictors of children's time in natural settings. Also, since the time parents' spent in natural settings themselves was a predictor of their children's time playing in nature, which a finding consistent with Beets, et al. (2007), programs to encourage parent time in nature or activities in nature that are based around the family, may be particularly useful.

While altering perceptions regarding difficulty may be a wise investment in efforts to increase time young children spend in nature, it is important to note that frequency of time was not related to children's affinity toward nature in this study. This is an opportunity and reminder for intentional practice, reflecting on desired outcomes and the complexities of the relationships among the constructs at hand, as well as on the program strategies used. For

example, often time in nature is viewed as the desired outcome or goal, yet perhaps it may be useful to consider it as not the desired end, in and of itself, but as a potential method toward other intended outcomes, whether that be affinity toward nature, or any other cognitive, physical, or socio-emotional developmental outcome. This is useful and perhaps necessary, as we have instances, such as in this study, where time in nature does not appear to be related to the desired outcome. Similarly, while the literature recognizes the potential for experiences in nature to develop positive and caring attitudes toward the environment, Malone and Tranter (2003) caution that simply access to outdoor space is not enough to engender such attitudes. Thus, it may be important to be mindful of the desired developmental and learning outcomes in programs for young children, and intentionally facilitate experiences toward that desired outcome, as opposed to focus solely on increasing time in nature. Conversely, we may be wise to balance that thinking with what Suttie (2016) suggests: we would do no harm by simply making sure children get outside.

This discussion of implications and areas for further research must be considered in the context of the limitations of this study. The sample is small and homogeneous, and further research is needed to understand how cross-culturally universal such preferences and levels of affinity are, particularly in light of the concern expressed in Philo (1992) regarding over-placing children into a meta-narrative that ignores differences of ethnicity, gender, age, and disability and also with the recognition of the experience of childhood by ethnicity being underexplored (Dunn & Moore, 2005). Also, the self-report nature of the study may impact findings, due to parents responding in socially-desirable ways; the data collection approach allowed for anonymity, which likely reduced but not eliminated the potential for this problem.

Another potential limitation of this study stems from the desire to use a consistent set of photographs that had been used in prior studies related to this research line of outdoor play setting preferences. The photographs used are at a scale that might be described as a scene, in contrast to a more close-up or small scale. Research on children's landscape preferences indicate "microspaces" might be the more suitable scale. For example, Homes and Procaccino (2012) suggest playground preferences were influenced at the equipment-specific level, with children judging playgrounds by whether or not they contained swings, for example, rather than by the playground as a whole. Similarly, in research by Moore (1986) where children were asked to draw favorite place spaces, and single trees were frequently drawn. Keeler (2009) reminds,

> *Children form an up close and personal relationship with the world and they experience the outdoors in a different way than we adults do. While it is true that they are literally closer to the ground than we are, our vantage points differ in deeper and more important ways. Children are tuned in to the magic of life in ways that too many of us have tuned out. They are firmly living in the present moment and can focus on small, intimate places that we adults take for granted*
> (p. 39)

Thus, it is not known the extent to which the scale of the photographs used influenced children's responses in this study, and in future research, scale should be intentionally considered.

Finally, it is also worth noting that these children, at four to six years in age, were quite articulate in expressing not only their preferences but also their reasoning for these preferences. Additionally, they seemed to enjoy the experience of looking at the photographs and also using the puppets. Many asked to participate a second time, and some enjoyed certain photographs so much they asked to keep a particular photograph. This speaks to the agency of young children and the potential for involving children in the design or selection of places they use for play, supporting other authors who have called for greater involvement of young people as key actors within the research and design process (Burke, 2005).

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# Regarding Animals: A Perspective on the Importance of Animals in Early Childhood Environmental Education

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**ABSTRACT**

Using the human-animal bond, relational ecology, and the "common world" framework as theoretical underpinnings, I set out to better understand the array of settings and experiences wherein young children are able to interact, either directly or indirectly with animals within the context of early childhood environmental education (ECEE). There is opportunity within the discipline of ECEE to reflect on practice and means of supporting children's engagements with and relations to non-human animals. This approach asserts children and animals as co-creators of children's learning and development. The relationships, nuances, and engagements between child and animal are themselves teachers (Taylor & Pacini-Ketchabaw, 2015).  This has important implications as we move into a time where environmental connectedness and interspecies connectedness matter more than ever (Haraway, 2008; Kellert, 2012; Louv, 2007).

**Author's note:**

Throughout this article, I refer to non-human animals and humans, as though they are two separate groups. In reality, humans, are of course animals, but I've chosen this binary because in children's own usage, their tendency is to describe non-humans as "animals," and exclude themselves linguistically from that definition (Herrmann, Medin, & Waxman, 2002). Maintaining that binary for the purposes of this article helps to shed light on the important point that children regard animals as "social others;" like them, but different  (Myers, 2007).

Additionally, I use the word "animals" to include all members of the kingdom *animalia*, including insects and fish, which are occasionally left out of conversations about animals.

Finally, my use of the word "wild" is again an intentional choice based on children's parlance. Personal communication with the Oxford Centre for Animal Ethics led me to the understanding that their preferred term is "free-living" as opposed to wild, when referring to animals in their natural habitats. However, since most children use the term "wild" to refer to same, I've chosen to do so as well.

Evident within the disciplines of environmental education (EE) and early childhood education (ECE) is increased awareness of the important role of nature in young children's lives. In recent years, as interest in this topic has grown, the fields of early childhood education and environmental education have each expanded to create a new disciplinary area where the two fields overlap: early childhood environmental education (ECEE).  While the overall goal of environmental education is described in the Belgrade Charter as education to "develop a world population that is aware of, concerned about the environment and its associated problems" (UNESCO, 1976), undergirding any individual's capacity for environmental concern is a fundamentally positive attitude toward, and personal connection to the environment (Chawla 1993; NAAEE, 2016; Nisbet, 2009). This begins in the early years, hence, the goals for

early childhood environmental education are more about fostering a sense of wonder and curiosity about the environment. Early childhood environmental education aims to support young children in the development of knowledge, appreciation, curiosity, and respect for the natural world within a developmentally appropriate framework (NAAEE, 2010; Wilson, 1993). In 1984 E.O. Wilson famously asserted that as humans, we have an innate need to associate with other living things, including plants and non-human animals. This approach, "biophilia" has informed and shaped the field of ECEE. Indeed, a number of studies show that children's academic growth, behavior, and stress levels improve when they have frequent exposure to natural settings and opportunities to engage with their environment (Chawla, 2012; Kuo, 2010), underscoring the suggestion that contact with nature has an important role in development and childhood well-being.

Since 1967 when the first nature-based preschool in America was created, the total number of (self-reported) nature-based preschool settings has increased to over 130, according to the Natural Start website (Natural Start Alliance, 2017). Worldwide, the number of nature-based preschools or early care settings is not yet measured, although certainly there are many nature-based preschools located in numerous countries around the globe. A nature-based preschool is characterized by three principles: "nature is the central organizing concept of the program," it is "based on high-quality practices of both early childhood education environmental education," and it "address[es] both child development and conservation values" (Baille & Finch, n.d). In addition to nature-based preschools in America, recent years have seen an increase in "forest kindergartens" (Sobel, 2016) inspired by the European forest schools which originated with Sweden's very first "Rain or Shine" school. Forest kindergartens are characterized by an approach that includes lengthier immersion in nature, with children often spending full days outdoors (Robinson, 2008; Sobel, 2016). Within "nonformal" environmental education settings (Heimlich, 1993; La Belle, 1982; Schlomo & Shmida, 2009,) which occur outside of school in places such as nature centers, arboreta, zoos, and aquaria, there is a marked increase in outreach and opportunity for very young children to participate in nature-based activities, classes and experiences.

Nature based preschools, forest kindergartens, and informal EE settings, each in a multitude of ways, promote young children's engagements with nature and the natural world. ECEE experiences often are characterized by children's opportunities to bond with nature through risk-taking, teamwork, physical challenge, creativity, and unstructured play, behaviors which have resulted in measurable impacts on children's self-efficacy, agency, and prosocial behaviors (Baillie, 2010; Chawla, 2012; Kellert, 2002).

In 2008, the World Forum Foundation published *A Call to Action: Reconnecting the World's Children with Nature* which urges "families, educators, and community leaders worldwide to take action to strengthen children's connection to nature." That same year, the organization convened a gathering of educators and established the Nature Action Collaborative for Children to support caregivers in connecting children to nature in developmentally appropriate ways.

The North American Association for Environmental Education (NAAEE) developed *Guidelines for Excellence in Early Childhood Environmental Education programs* in 2010 to support educators and interested others in better understanding what makes something a high-quality ECEE experience, asserting that "the task of environmental education for young children is to forge the bond between children and nature" (NAAEE, 2010). Soon after, an organization, the Natural Start Alliance, was created within NAAEE to organize and support the many entities that aim to deepen the connection that young children have with nature.

Paralleling the growth of ECEE, the field of education for sustainable development has increased in scope to include early childhood education for sustainability or ECEfS. ECEfS refers to education *about*, *in*, and *for* the environment (Davis, 1998, 2009; Lewis, Mansfiel, & Baudains 2010; Maynard, 2007), which encompasses knowledge about ecological systems, direct experiences in nature, and making socially just and sustainable choices (Hedeval, Almkqvist, & Ostman, 2014).

Though these numerous domains all acknowledge the importance of nature in children's lives, and aim to deepen the bonds and sense of nature-connectedness (Carson, 1956; Nisbet, 2009; Reed, 1996) experienced by young children, the discussions of "nature" within the domain of EE tend to refer to the environment as a whole: plants,

animals, rocks, water, and all the other elements that make up the natural environment. The term 'nature' encompasses "green space" (Taylor &Kuo, 2006;) "wilderness areas" (Hofmeister, 2009) or "nearby nature" (Wells, 2000) for nature settings ranging from untrammeled acres to those green places and parks found in urban environments, and rarely makes direct reference to the role of animals and their places within natural settings. Within these definitions of nature, the role of non-human animals, and consequently, their role in children's lives, as well as their place in children's perceptions of and feelings about nature, remain largely unexplored specifically within the domain of ECEE.

Relationships with animals, whether domesticated or wild is important for the development of empathy (Daly & Suggs, 2010; Melson, 2001, 2003; Myers, Saunders, and Garrett, 2004; Poresky, 1990; Sobel, 1996.) Animal interactions may ease tension, anxiety, stress and feelings of depression (Beck, & Meyers, 1996; Katcher, 2002; Thomas & Beirne, 2002), and at times provoke children to speak or express their innermost feelings or questions (Burke, & Copenhaver, 2004; Karniol, 2012), practice caregiving (Melson, 2001, Myers & Saunders, 2002), and may even improve the quality of their academic learning (Daly & Suggs, 2010) as well as their confidence, social skills, and cooperation (Friesen,. 2010; Jalongo, 2015; Katcher, 2002; Redefer & Goodman, 1989). Moreover, and of particular importance within the discipline of ECEE, animal interactions seem to result in a generalized sense of care toward other creatures (Baillie 2010; Chawla, 1999; Kahn, 1997) and the natural environment, as well as contributing to a deepening sense of place in children's development (Sobel, 1993; 1997).

**Animals in Children's Lives**

Even from infancy, many children demonstrate curiosity about and interest in animals (Kidd & Kidd, 1987). Prolonged gazes, reaching or gesturing at animals, and grunting or vocalizing are ways that infants and toddlers express curiosity and indicate interest in animals and pets at home and elsewhere.

Americans spend billions annually on the care, feeding, and presumed happiness of our domestic pets such as guinea pigs, cats, dogs, birds, goldfish, rabbits, etc. (APPM, 2017). Children who grow up in homes with pets typically show a willingness to participate in directly caring for the pet through actions such as feeding, grooming, and talking to the pet (Katcher, 2002; Poresky, 1990). In over 60% of American households with pets, parents report obtaining pets "for the children," suggesting that adults are cognizant of at least some of the benefits to young children that pet ownership can provide and that they perceive some value in the relationships between children and animal (Melson 2003).

While most adults love and cherish companion animals such as household pets, or value charismatic megafauna for their important role in nature, children value animals simply because *they are.* Children recognize the intrinsic value of animals not because of what animals do for us, what we can take from them, or how they help us, but simply because they are living creatures (Kidd, & Kidd,1990). This viewpoint warrants special consideration, as it suggests a view of and relationship with animals that is very different from the view of animals held by many adults. This "common world" framework, described by Taylor and Giugni (2012), as adapted from Latour (2004) positions young children as members of a community in a world inclusive of non-human animals, rather than one where animals are simply characters or "supporting actors." In other words, animals are regarded as important beings who have both agency and autonomy, and are valued intrinsically, rather than being valued because they give us companionship, food, amusement, and products.

**Animals in EC Classrooms**

In many early childhood classrooms, both nature-based and traditional, classroom pets are kept, although licensing regulations vary from state to state and impact not just whether animals may be kept, but which species. Teachers who do keep classroom pets do so for a variety of reasons, including their potential to enhance curricular goals (Gee et al. 2012; Hachey & Butler, 2012), reduce stress and anxiety (Kellert, 2005; 2012) and their presumed role in the development of pro-environment feelings (Acar & Torquati, 2010; Baillie, 2010), especially of young children. The role of children in caring for classroom pets is varied, but may include feeding, cleaning the tank or other enclosure,

and creating signs or decorations for the pets (Uttley, 2013; Selly 2014).  Animals most frequently kept in early childhood classrooms are fish, followed by reptiles and amphibians (Uttley, 2013).

In addition to feeding and directly caring for pets, one of the more common behaviors children engage in is talking to animals.  This sense of "animal as peer" asserts the child's awareness of animal as another being, capable of communicating, understanding, and perhaps even responding to a child's social advances   (Myers,  2007; also see Figure 1).  When children talk to non-human animals at home, or those who live in classrooms as pets, it indicates a desire for communication with them.  This is known as affinity, or attunement: a sense that the animal not only recognizes what the child is saying, but that the animal is interested and sympathetic to the child's feelings and thoughts (Blue, 1986; Daly & Morton, 2006; Lasher, 1998; Myers, 2007). Indeed, when asked what their pets think about, some children even answer, "My pet is thinking about me" (Triebenbacher, 1998).
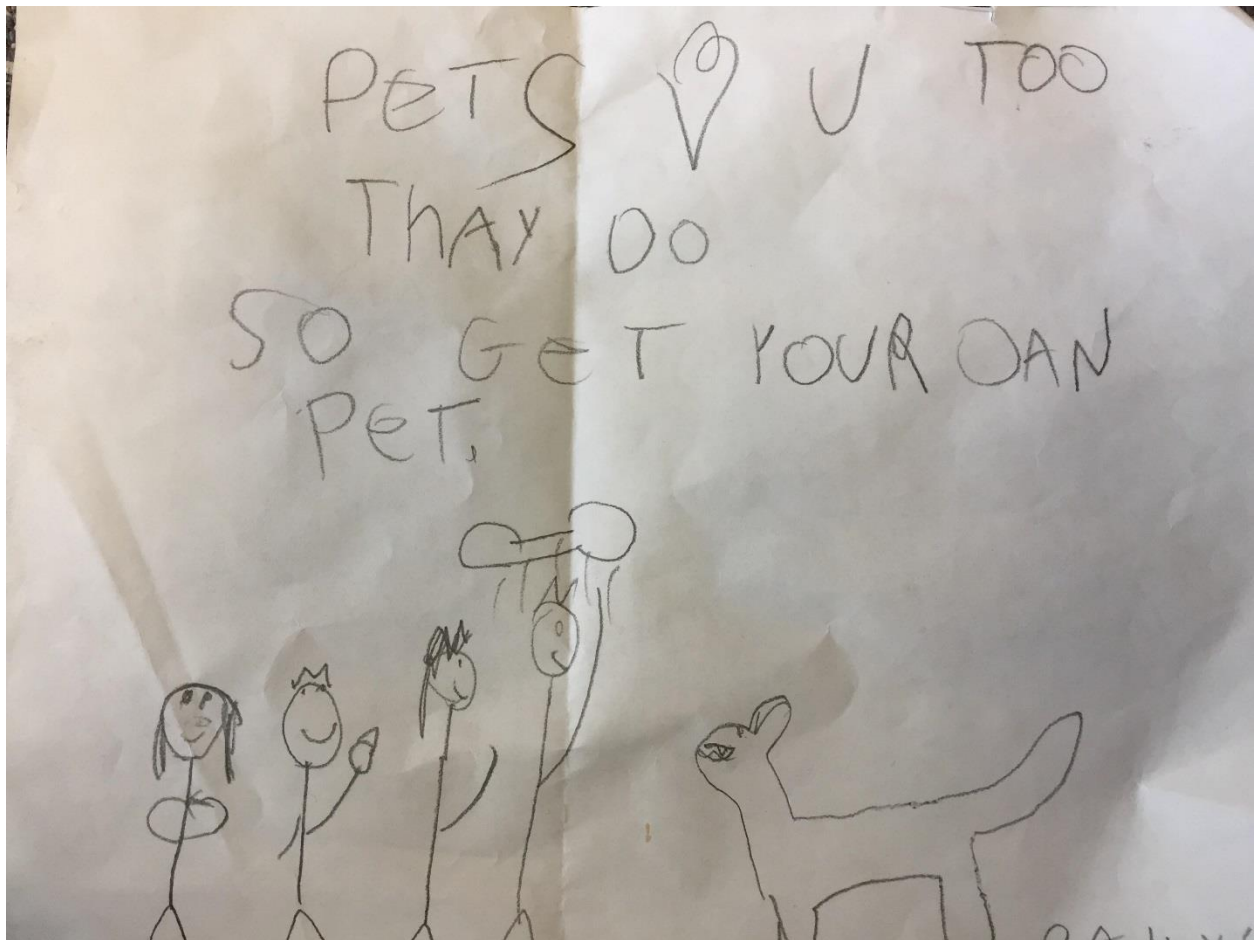


*Figure 1*: Illustration of a child's sense of "animal as peer"

During dramatic play in the EC classroom, children frequently engage in zoomorphism, taking on the characteristics of animals, and playacting at being animals, often making animal noises, moving like animals, or saying the things they wish the animal would say. These zoomorphic behaviors are ways that young children internalize their understanding about animals. In addition to deepening their understanding of animals, playacting and demonstrating animal behaviors can demonstrate children's knowledge of animal behavior, movement, and even habits.  In so doing, children acknowledge animals as individuals as well (Sobel, 1996; Myers, 1997).  Speaking for animals-giving voice to the animal they are pretending to be, is a way that children demonstrate that they're taking the perspective of another creature-or attempting to, anyway. Verbalizing the things they think the animal might

say or want to say is a way that they share with us their understandings of what animals perceive and understand. This demonstrates an understanding, or a desired understanding, of animals' subjective needs (Blue, 1986).

When in the presence of animals, whether captive in zoos or nature centers, companion animals such as the family dog, or common, free-living "wild" animals like geese and squirrels, children react with a mixture of curiosity, delight, excitement, trepidation, or other strong emotion. Young children often love to talk about animals, look at pictures of animals, cuddle with toy animals, and encounter real animals. Clearly, animals have a large role to play in the inner landscape of the child. Children are intrigued by the variety of sounds, smells, textures, and colors of animals. They are curious about these creatures who are alive and share our physical needs for food, shelter, and water, and who sometimes seem to display emotions. How children perceive animals, their characteristics, and their abilities is influenced by many factors-cultural and family beliefs and values, media such as books, movies, video games and apps, personal experiences, and exposure to animals in a variety of settings including home, zoos/aquaria, the classroom, and in nature. There are some ways that animals are like us, and other ways that they're different. In this way, animals become "social others" (Myers, 2002; 2007), helping children identify and understand oneself in relation to other beings, and through interactions with others.

**Animals in nature**

Where then, are the interactions with wild animals, and what qualities can be said to characterize them? How do children regard wild animals? How do they make sense of the lives and being-ness of wild animals, when they are encountered? There is a rich emotional complexity to young children's understanding of and connection to animals. Within the context of ECEE, the term "affordance," is commonly used to describe the relationship between an individual and the potential of an object (Gibson, 1977; Jones, 2003). For purposes of this discussion, and since it is a term largely well-understood within the context of ECEE, I've cautiously adapted the term "affordance" to include the potential for something to happen between one individual and another –in this case, a child and an animal-as a result of being in the presence of one another. Note that in adapting the term in this way, I seek to broaden the definition of the word to include objects *and* animals, rather than to reduce animals to the status of objects. Moments between young children and animals can therefore be characterized as *interactions* (when the child and animal are interacting directly, as in capturing insects or feeding fish) or as *affordances*, when the child is in the presence of an animal and is interested or cognitively engaged with the animal.

There remains a gap in research and practice when it comes to children's interactions or affordances with wild animals, perhaps because animal encounters, when they happen outdoors with wild animals, are unpredictable, usually unplanned, and of varying levels of intensity for everyone concerned: child, adult and animal alike.

During any given day in a nature-based early childhood setting, children may encounter ducks swimming in a pond, squirrels scampering up and down the trees, and countless insect species. In ECEE settings, wild animal encounters often include activities such as birdwatching, capturing or observing insects, or observing regionally common species such as gray squirrels, lizards, or other animals that are relatively desensitized to humans (Selly, 2014). Educators may respond to animals and animal encounters very differently, depending on their own positionality and comfort with regard to certain species, and there are many factors that influence one's positionality toward animals or animal interactions (Kellert & Westervaldt, 1984).

Teachers' reactions to wild animal encounters, and the extent to which they support children's curiosity or desire to interact, watch, or ask questions about animals, vary depending on their own feelings toward the animal species they encounter. For example, just like children, teachers may exclaim with joy, recoil in fear or disgust, or demonstrate hesitation and uncertainty. Modeling, as we know, is a powerful means of educating young children. Adult behaviors and responses to animals can significantly influence children's perceptions, comfort, expectations, and affinity toward animals. This can have a positive or negative impact on the children's own developing feelings about animals (Muris, van Zwol, Huijing, & Mayer, 2010).

When willing to support children's engagement with animals, caregivers may rely on strategies such as describing the animal's actions: "*he's coming to the birdfeeder, now he's pecking at the seeds*," narrating the child's

observations: "*Rebecca sees the geese swimming away! Bye bye geese!*" or anthropomorphizing the animals: "*the butterfly came up to say hi to you this morning*" in an attempt to satisfy curious children. This is not evidence of poor intentions or ignorance, rather, it demonstrates that most adults themselves are somewhat tentative in their relations with other-than-human species. (Dwyer, 2007). If adults had a better understanding of the role of animals in children's development, or had a stronger sense of the "common world" experience of children and animals (Taylor & Giugni, 2012), which asserts animal and child as equal partners in co-creating an experience together, they may employ different strategies in response to animal-child affordances, rather than assuming roles as narrators, describers, or storytellers. While each of these roles has a purpose and supports development in some way, each misses the opportunity to allow for the multispecies interaction to occur, which can be a meaningful and intimate connection between child and animal that happens between those two beings on their own terms.

As educators we need to reflect on how we as adults enter and support that "childspace" - that place that is uniquely situated in the experience of the child, that is the animal-child affordance . How do we do it a way that honors nonhuman animals and acknowledges animals as other without reinforcing the human-animal-nature separation? It is difficult for adults to "grant wild creatures their otherness, their own particularity" (Dwyer, 2007). Young children, however, are inclined to accept and value animals for their "otherness" - children naturally see animals as unique non-human others, and don't need adults to narrate, explain, or prompt: they can engage in connecting with animals on their own terms, and experience the animal in their own way (Kidd & Kidd, 1990; Melson, 2013; Myers, 2007). We can learn from their example.

At this time, there are no identified, common practices for educators or practitioners with specific regard to engagement with wild animals in early childhood programs, other than a short list of recommendations around care of animals in captivity (NAAEE, 2010), nor are any of the *Guidelines* specifically focused on animal-child interactions or pedagogy. Nevertheless, animal contact may be important in children's development of autonomy and sense of self (Kidd & Kidd, 1990; Melson, 2013; Myers, 2007), connection to nature, sense of place, and nascent feelings of stewardship-all outcomes valued by ECEE. The ECEE field is missing a key support for educators who wish to better understand and foster child-animal interactions and connections.

The North American Association for Environmental Education *Guidelines for Early Childhood Environmental Education* do acknowledge the presence of animals within ECEE several times throughout the document. First, they are mentioned in *Key Characteristic 1*, "*Program Philosophy, Purpose, and Development* (p. 11-12)."  Here the *Guidelines* caution educators to ensure the program addresses "appropriate specimen collection" and asserts the role of adults as "role models for the care of plants and animals in the environment."  Later in a statement, there is a suggestion about "handling animals and plants gently and with respect" (p. 12). This conflation of animals and plants is common in the ECEE literature, and reinforces a human-animal separation that removes children from the realm of animals. It further suggests a power dynamic wherein humans are free to collect and handle animals, albeit respectfully. This implication is troubling if one is cognizant of the human-nature binary narrative so common in environmental education. The field of eco-pedagogy acknowledges and explores the dichotomy that maintains an anthropocentric (human-centric) way of being and participating in the world, implying that humans are neither part of nor connected to nature (Kahn, 2010). Within the context of the discussion of reconnecting children with nature, some reflection on this presumed separation seems appropriate.  As well, reflection on how adults' sense of the separation between human and nature, and resulting reinforcement of that position through our language, relationship with the natural world, and modeling  of relationships to other species, is in direct opposition to children's own experience of being connected to nature (Chawla, 2002).

It's important that ECEE as a discipline acknowledge the power dynamic that is reinforced by this dichotomy. Many toddlers become agitated when their peers grab butterflies or caterpillars and when a child unintentionally crushes a living creature, it can be deeply upsetting to both onlookers and to the child who does the crushing (Gilligan & Wiggins, 1987; Myers, 1997; Myers & Saunders, 2002; Poresky, 1990).  In addition, many young children who are beginning to explore relationships of power and vulnerability explore this dichotomy through capturing, chasing, or otherwise provoking animals, testing to see "what can I do?"  Conversely, exploring feelings of care, and practicing caregiving and nurturing are other ways children explore the human-animal power dynamic (Melson, 2001; Selly, 2014). In order to support  children's growing sense of  self in relation to other, their sense of nature-relatedness,

and their understanding of the natural world and the creatures who inhabit it, adults should recognize and support these moments as opportunities for children to grapple - albeit playfully-with their role in the human-animal-nature landscape.

Of course, it is very important to give young children lots of hands-on opportunities in nature, and to guide them in safe, sensitive handling or physical contact with other species. Physical connections with living beings in nature can be powerful motivators for learning and invoke a sense of wonder (Carson, 1965; Sobel, 1993). The tacit acknowledgement by NAAEE of the responsibility of adults to serve as role models underscores the need for adults to think critically about how we ourselves approach and model animal-human interactions, relationships, and values.

Later, in *Guideline 1.8, Interpersonal and Intergenerational Relationships*, there is a recommendation about respecting the feelings of others, however these recommendations are limited to human-human interactions. While human-human interactions are the primary focus of this section of the *Guidelines*, I posit that the field of ECEE could powerfully affirm the importance of the child-animal relationship by also recognizing the presence of animals in children's social relationships, and by acknowledging the overall importance of animals in children's lives, through a mention of respecting –or at least developing an awareness of- the feelings and needs of animals. Certainly, respecting the perceived feelings and needs of animals is an important element of ECEE, if the discipline aims to support children's social, psychological, and emotional well-being. If one is uncomfortable with the potential of anthropomorphizing or "assuming we know what animals feel" - one could at least begin conversations with children about what they think animals feel and need, as this is an area rich with children's thoughts and ideas; likely, the children have been wondering about animals' thoughts, feelings and experiences for some time and have some ideas about what they need (Myers, 2004).

While ECEE as a field, along with its seminal literature, does acknowledge that animals are part of nature, and the disciplines of EE and ECEE, each recognize that animals are important for the many benefits they offer children, I assert that the discipline is in need of an explicit focus on the role and potential of animals in children's development. It is in need of a shared understanding about how educators can best support child-animal relationships. This understanding should encompass not just the value of animals for what they offer or bring to children's lives, but for what they are, innately. Since environmental education is generally considered to be education *about*, *for* and *in* the environment (Davis 1998; 2009; Deans & Brown 2008; Hedevalk, Almqvist, & Ostman, 2015; Lee 2001; Lee & Ma 2006; Lewis, Mansfield & Baudains 2010; Maynard 2007), I respectfully suggest that we include in our working understanding of ECEE, elements of environmental education *about*, *for* and *with* animals. It behooves the discipline of ECEE to better examine and understand how to support educators in creating and facilitating intentional ethical interactions with free-living animals. I further propose that ECEE practitioners consider, in addition to the NAAEE guidelines when evaluating their programs, the following recommendations:

Education ***about*** animals means renewing a commitment to critically examining the portrayals of animals in EC settings. As practitioners committed to both children and the natural world, we must acknowledge the impact of stereotypical, negative, or unrealistic portrayals of animals and the subsequent effect of those portrayals on children's perceptions of animals and their relationships to animals. (Karniol, 2012; Marriott, 2002; Burke & Copenhaver, 2004; Bettelheim, 2010; Campaign for a Commercial-Free Childhood, 2012). In order to provide children with opportunities to gain authentic knowledge and develop accurate understanding about animals, we should seek to provide authentic portrayals in media, games, toys, and other materials whenever possible. By aiming to present scientifically accurate portrayals of animals in EC settings, rather than stylized versions of the same, we honor the importance of animals in their own right, as well as their role in children's nature-connectedness. Children will connect an accurate representation of a butterfly to the natural world much more readily than a stylized one. Education about animals means actively seeking out opportunities to discuss animals, their needs and roles within nature and providing children with opportunities to make discoveries and ask questions about animals when so inclined. Using best practices in ECEE, such as inquiry-based approaches, (Chaloufour & Worth, 2003; NRC, 2000; Worth 2010; Worth and Grollman, 2003), the project approach (Edwards, Gandini, & Forman,1998; Helm & Katz 2011), and developmentally appropriate practice (Copple & Bredekamp, 2009), teachers can thoughtfully and

ethically engage children in thinking about, learning about, and building knowledge about animals that is grounded in realistic portrayals, and  discussions about real animals in "real life."

Education *for* animals means engaging in conversations, discussions and experiences that allow children to begin to wrestle with their own developing sense of ethics, justice and care toward animals. Being mindful of the need to not present "too much too soon" when it comes to environmental education (Sobel, 1996) and also recognizing the desire and responsibility many educators feel to be careful about appearing to advocate or influence children's thinking in one way or another, I suggest instead that educators simply allow children space, time, and sensitivity when grappling with big feelings about what animals need, feel, and experience. When finding a dead frog on the path, for example, rather than steering children around it or making a glib comment, it means allowing children to stop and notice, to discuss their feelings, thoughts, and ideas, and treating the dead frog with respect. It means creating and maintaining space for children to experience their feelings upon seeing a dead creature, and allowing them to process those feelings ethically, respectfully, and safely.  It means refraining from imposing one's own opinions or assumptions about what animals might need or experience, so that children are free to have their own ideas and explore them respectfully and safely. It means talking frankly about whether it's OK to pick up a creature simply because you are curious about it, it means, as an educator, reflecting on the animal-human binary and how you participate in or dismantle systems of power within that binary.

Education *with* animals means seeking out affordances and encounters with animals, both free-living and domestic, recognizing that simply being with or in proximity to animals is valuable and important in its own right. Rather than the prevailing attitude of learning "from" animals (which implies that they are either teacher  or tool, each a role in service to humans)  learning with animals means viewing them as partners in the experience, members of a community of nature who have agency and autonomy. For example, learning "with" animals would  mean spending time outdoors in search of animals or animal homes, but doing so ethically and responsibly, acknowledging the importance of animals' own agency in creating their homes, rather than viewing animal homes as "ours to learn from." It means supporting children in their explorations and observations of insects and other commonly encountered animals, while being gentle and mindful of demonstrating care and sensitivity toward animal species. It requires reflecting on classroom practices that involve the use of animals as "tools" or "specimens." A common experience in many EC settings involves using animals themselves as tools, scooping up earthworms and bringing them indoors for children to examine on damp paper towels, poking and prodding them to provoke reactions. Instead, if approaching this experience with a perspective of learning "with" animals, a teacher would encourage children to instead observe worms in nature, crawling through the humus or emerging from their underground homes after a rainstorm.   Education with animals requires us to recognize that child-animal interactions or affordances have meaning and potential to impact children in ways that we don't yet understand –they are between the child and the animal. It also requires us to change our view of animals-they are not "tools for investigation" or "helpers in the classroom," they are instead partners and "others" in a child's experience, living beings who have agency and freedom. It steps away from the anthropocentric view of humans-as-center of nature, and instead views animals as neighbors, members of a shared community entitled to their own experiences.

Continued study of the value and meaning of animals in young children's lives, development, and nature-connectedness will expand the capacity and quality of ECEE as a discipline, and will allow us to better honor children's relationships with non-human animals, thereby strengthening our own development and nature-connectednesss. In order to be congruent with the values of EE to create environmentally literate citizens who are deeply connected to nature, it's time to regard animals with a greater sense of value.

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# "Loose Parts" in Children's Outdoor Play Environments
## Carla Gull
*University of Phoenix, USA*
*Guest Book Editor*

The *Theory of Loose Parts* was coined by Simon Nicholson in 1971. As a landscape architect, he believed children should have more open-ended materials and input in their outdoor play experiences, advocating for what he called "loose parts" as part of the intentional design of spaces. With these loose parts, children could manipulate the environment in any way they desired. He suggested, "In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kind of variables in it" (p. 30). The following books, both children and professional, look at children using loose parts in some way, often in a natural context:
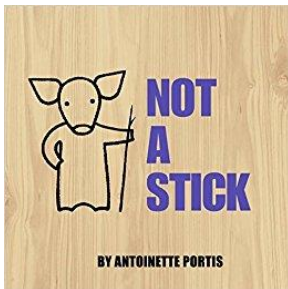


*Not a Stick* by Antoinette Portis cleverly illustrates the many ways a stick can be a part of child's play. From slaying a dragon to conducting music, sticks have unlimited potential. Simple line drawings allow the imagination to soar.
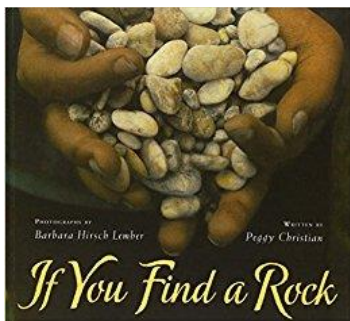


*If You Find a Rock* by Peggy Christian centers on another childhood favorite loose part—rocks! This story has a very conversational tone, helping us find the perfect rock for skipping, resting on, writing with, or for whispering. Photographs bring this story to life.
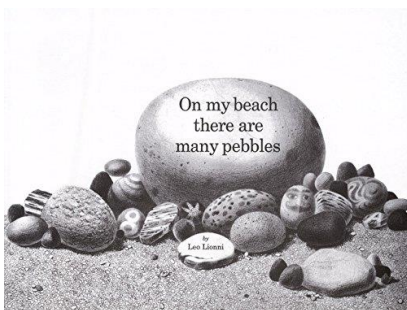


*On My Beach There are Many Pebbles* by Leo Lionni uses hand drawn illustrations to explore the variety of rocks on the beach. The text is sparse in this book, yet children will soon be hunting rocks, looking for patterns, letters, and more.
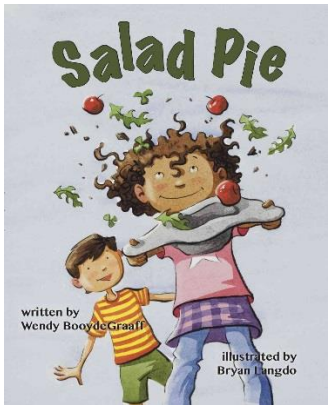
*Salad Pie* by Wendy BooydeGraff follows a young girl enjoying her time alone at the playground making "salad pie" with natural loose parts until a boy wants to play. The girl refuses until the salad pie (clover, crab apples, dandelions, a gum wrapper, etc.) spills and she realizes the boy just wants to help. The girl chants over her concoction, welcoming audience participation. This may go well with a discussion about friendship.
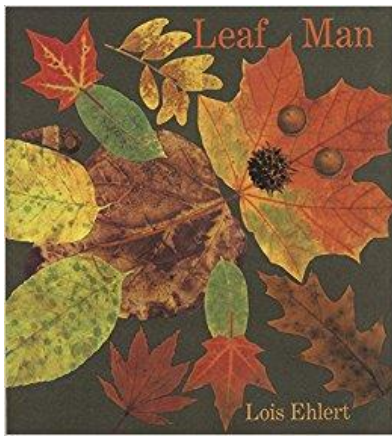


*Leaf Man*, by Lois Ehlert, is a great fall book for imagination and creativity. As the wind blows, Leaf Man travels past ducks, geese, orchards, meadows, and cows. The entire book is made of fall leaves and cut paper. Many leaves are identified in the back. This whimsical book inspires imagination as children will surely look at the potential of fallen leaves in a different way.
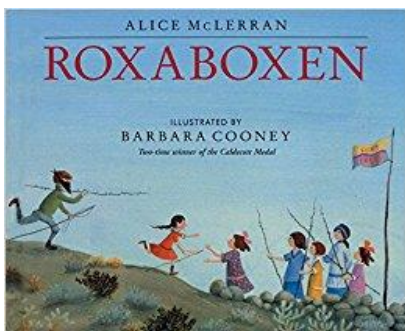


*Roxaboxen* by Alice McLerran depicts the classic nearby empty lot where many children flocked to before children had more supervision in their lives. In the book, siblings and neighborhood children of many ages gather across from their houses and explore. They find a box of black pebbles which become money. They gather stones to build their own city. Old wooden boxes became shelves and tables and chairs. The children continue using found and natural items scavenged outside to create an elaborate community of imagination and play.
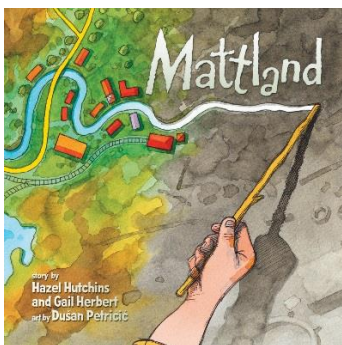


Similarly, *Mattland* by Hazel Hutchins and Dusan Petricic, follows the story of Matt who is new to an area. He is lonely and considers breaking the stick in his hand, but instead draws a line in the dirt. The line becomes a river and soon he creates a whole city of found objects found around the construction site. A nearby girl begins bringing supplies, including chicken bones for a dinosaur wasteland. When rainclouds appear the city is in jeopardy until additional neighborhood children save the city, alongside Matt. His smiling reflection in the puddle tells it all as he begins making friends.
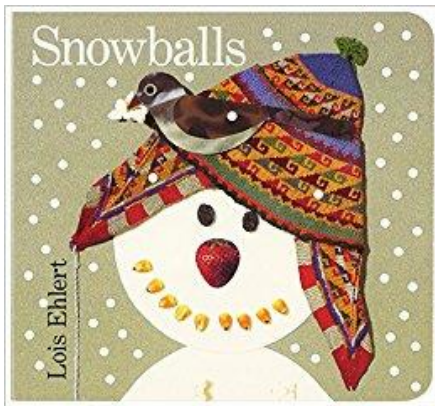
In *Snowballs*, also by Lois Ehlert, on a good snow packing day a family makes a snow man with a variety of everyday objects they have been collecting, such as strings, popcorn, a hat, strawberries, raisins, and more. They end up making a whole snow family, including a cat and dog! Gone are the days of just rock eyes, carrot noses, and twig arms with this inspiration for snow building with loose parts.
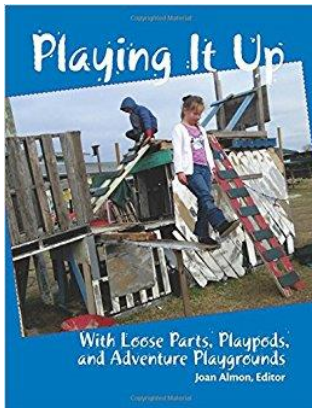
*Playing It Up! with Loose Parts, Playpods, and Adventure Playgrounds* by Joan Almon highlights the current outdoor play initiative, with various sections written by playworkers across the United States. Joan Almon starts the book assessing where we are with play in the United States. She shares the need for play to work through stress and anxiety, though recognizing that play is often feared due to the inherent risks. Rusty Keeler then writes a section on play, giving hope as he shares examples of a current push for play in the United States. In Chapter 3, the reader is introduced to several groups promoting play, such as Pop-up Adventure Play, the Let's Play Initiative in Illinois, Santa Clarita Valley Adventure Play in California, Redeeming the American Dream through Play in Ohio, and the Adventure Playgrounds and the Make Movement in Washington. These spaces all include risky play, child led play, engaging loose parts, and the playwork principles in common. Another section looks specifically at more portable play options for recess, such as playpods that have a multitude of recycled materials as loose parts. Section four returns to nature and the Nature Play Zone at the Indiana Dunes National Lakeshore, the Children at Play Initiative in Kentucky, and An Adventure in the Forest in Washington. The book ends with a variety of resources, such as groups promoting play, playwork principles, and additional resources. This is a call to action for more play in our children's lives and outdoor spaces. While this book does not focus exclusively on loose parts, play is at the core with the spaces where loose parts are used outside and the principles to allow children adventurous play are used in natural and child made settings. This book helps understand the context of play and shares numerous examples of loose parts in action. Find it

through major online retailers or find it as a free download at allianceforchildhood.org.

Inspiring Scotland, an advocacy group focused on supporting disadvantaged communities in Scotland, published a resource, *Loose Parts Play*, in 2017. The toolkit is authored by Theresa Casey and Juliet Robertson. This is a stand-alone resource that contains the what, why, and how to make loose parts happen in any setting. It includes a definition of loose parts and benefits in using these in play. The authors share practical approaches to getting started with loose parts, evaluating how we currently use loose parts, finding bits and bobs, and looking at safety of loose parts.

The concise 68 page resource also includes information on how adults interact with children using loose parts, how to make loose parts a portion of the regular play routine, risk-benefit assessments, and practical advice on commons concerns. Playwork principles, helpful resources and organizations, and examples to more fully implement loose parts are included. As a host to an online Facebook group on Loose Parts Play, this is the first, go-to resource I share with interested newcomers as it has all the nuts and bolts in one place for loose parts success. Additionally, the toolkit is sprinkled with great quotes, tips, and resources. If you are new to loose parts or want to expand your understanding, this is a must read.

Find this free resource online at:
https://www.inspiringscotland.org.uk/hub/loose-parts-play/
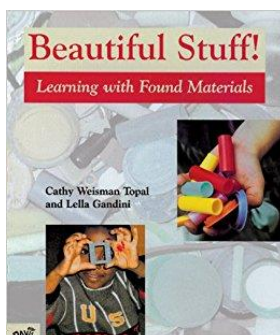
*Beautiful Stuff! Learning with Found Materials*, by Cathy Weisman Topal and Lella Gandini, was published in 1999 as an example of one classroom's approach to collecting, organizing, sorting, classifying, and using "beautiful stuff" or loose parts in a Reggio inspired classroom. While the book does not focus on outdoor or natural loose parts as much, the principles and examples can be carried over to a more natural outdoor setting. This book was published long before the term loose parts was trendy, offering solid advice and context of using loose parts in the classroom as part of creating, evaluating, and learning. The book is specific to one classroom's approach from the gathering of loose parts in paper bags from each child's home to the artwork and projects created from the many treasures.
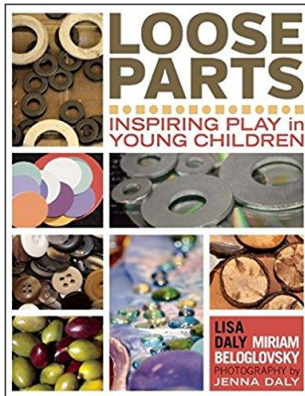
*Loose Parts: Inspiring Play in Young Children* by Miriam Beloglovsky and Jenna Daly is the first in a series of books on loose parts. After a brief introduction to loose parts, the topics of senses, creativity, action, and inquiry loose parts are explored through photos and examples. Both natural and found loose parts, both inside and outside, are highlighted. Specific examples of children are shared in each section, along with numerous photos for inspiration. While some photography seems repetitive, there is a cohesiveness to each spread of photos. The ideas are sound and provide many loose parts ideas and options.
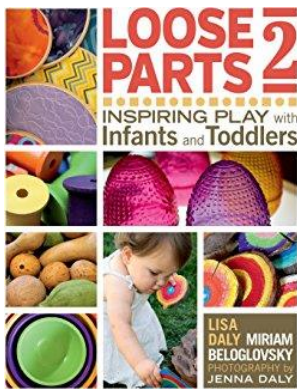


The second book in the series, *Loose Parts 2: Inspiring Play for Infants and Toddlers*, specifically takes on loose parts with younger children. The book is organized by schema, looking at the major topics of object exploration, assembly exploration, instrumental exploration, locomotion, and action. Subcategories help the reader explore each schema with related loose parts in more depth. With a focus on larger items that would be safe with younger children, recycled, found, and natural items are included. Tires, rocks, tree cookies, water, cocoa mulch, cardboard tubes, fabric balls, and blocks are just a few of the outdoor options. Themed photography spreads replicate the approach of the first book with a slightly younger focus. The blend of both indoor and outdoor approaches make this book applicable to many settings.



A third book, *Loose Parts 3: Inspiring Culturally Sustainable Environments*, was released in Spring 2018. The book looks at loose parts through a lens of creating a sense of belonging, helping support a child's identity, and showing cultural sustainability. It focuses on aesthetic, authenticity, equity, dynamic, praxis, and critical reflection.

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