



Nature-Based Preschools in the US

2020 SNAPSHOT

Summary

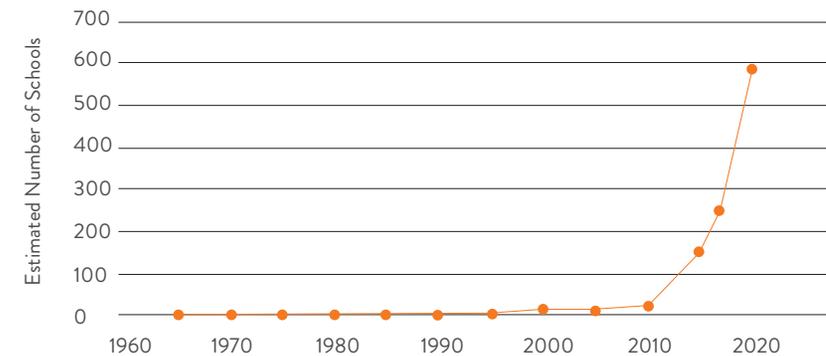


Over the past three years, nature-based preschools, forest kindergartens, and outdoor preschools (collectively, nature preschools) in the US have more than doubled to 585, and nature preschools can now be found in nearly every state in the United States. Over the past decade, this represents a nearly 25-fold increase.

As nature-based education is becoming an increasingly popular choice in preschool education, nature preschools are emerging as a specialized preschool option not unlike other approaches to early childhood education, such as Montessori or Reggio-Emilia schools. In addition, the 585 programs reported here represent only schools that have fully adopted nature-based education as the core of their program; countless other schools are incorporating nature with gardens, outdoor classrooms, field trips, partnerships with environmental education centers, and in many other ways.

Unfortunately, the coronavirus pandemic that hit the United States in early 2020 has prevented a full survey of nature-based programs at this time, so data related to the characteristics of programs, their staff, and the numbers and demographics of children they serve are not currently available.

Estimated number of nature-based preschools, 1965-2020



How the pandemic will affect the number of nature-based preschools over the short and long terms is uncertain. Financial strains from extended closures and new health and safety regulations threaten many programs. On the other hand, many programs are reporting increased interest as experts agree that outdoor environments are safer than indoor environments, and parents are yearning for opportunities for their children to play and learn outside.

Although financial strains threaten the future of nature preschools (and, for that matter, all preschools) in the United States, this census makes clear that in 2020, nature-based, outdoor education for young children has become more widespread and popular than ever.

585
nature preschools
in the US

(nature-based preschools,
forest kindergartens,
and outdoor preschools)

A Childhood Outside: Nature Preschools, Forest Kindergartens, and Outdoor Preschools

Nature is widely recognized as an important, and often low-cost, tool for fostering children's health and development. Whether it's natural environments, gardens, green schoolyards, outdoor classrooms, or even simply views of nature, research suggests that there are a variety of ways that nature enhances children's health and development, including:

- Enhancing brain development¹
- Improving academic performance²
- Enhancing communication³
- Promoting socio-emotional development⁴
- Promoting emotional resilience and self-regulation⁵
- Promoting executive function⁶
- Providing mental health benefits⁷
- Reducing symptoms of ADHD⁸
- Providing therapeutic benefits to children with autism⁹
- Promoting physical activity and motor development¹⁰

Nature preschools capitalize on these developmental benefits to offer rich education programs that foster all domains of child development. At the same time, nature preschools also build children's connections to the places where they live and boost children's confidence in working together to improve their world, creating the foundations for lifelong environmental literacy.

Nature preschools may be called *nature-based preschools*, *place-based schools*, *outdoor preschools*, *nature kindergartens*, *forest kindergartens*, or *zoo and aquarium schools*, among other terms. The programs may be located at nature centers, in homes, in community centers, in parks or on public or private lands, on farms, in public schools, and in a variety of other settings. Nature preschools can have both indoor and outdoor facilities, or can conduct the entire program outdoors (in which case, many are called forest preschools, forest kindergartens, or outdoor preschools).





Photo: Fiddleheads Forest School

Regardless of their setting or name, nature preschools share several key characteristics, including:

- Working toward dual goals of promoting child development and developing children's environmental literacy
- Using nature as the central organizing theme for the program
- Spending a significant portion of the instructional time outdoors (in most cases, children are outside at least half the school day, in some cases, all of the instructional time is spent outdoors)
- Employing a child-led, play-based approach to teaching that adapts to children's interests, abilities, cultures, and environments
- Recognizing the benefits of children's healthy, appropriate risk-taking as the program manages risks in children's play and learning, particularly in the outdoors

Research suggests that nature preschools' unique approach to early education is a safe and effective option. Studies show that injury rates in nature preschools are no higher than the average preschool in the United States¹¹, and children who complete nature preschool programs enter kindergarten just as prepared as their classmates who entered from other types of preschools.¹²

Research in 2017 by the Natural Start Alliance and allied organizations¹³ revealed, however, that despite their safety and effectiveness, nature preschools are not equally available to all children. White children are over-represented in nature preschools, and dual language learners and children with disabilities are underrepresented. Disparities in access to high-quality education are widespread across the education system in the United States, and nature-based programs have not been the exception. In addition, children of color have less access to nature than white children, pointing to yet further injustice in bringing the benefits of nature to all children. As soon as is practical, the Natural Start Alliance will survey the field to gain up-to-date information about who is attending and employed in nature preschools in the United States, how many programs are eligible to participate in public funding to defray or replace tuition payments by parents, and how programs are accommodating children with disabilities.



Photo: Fiddleheads Forest School

Number of Nature-Based Preschools in the United States

Over the past decade, the number of nature preschools in the United States has been on a steep upward trajectory. In our 2017 survey of programs, over 80% of programs indicated that they were maintaining waitlists, suggesting unmet demand and a strong likelihood of continued growth. In fact, nature preschools grew even more rapidly from 2017 to 2020 than they did before 2017.

In total, there are an estimated **585 programs in the United States today**. This represents a nearly **25-fold increase** from the beginning of the decade, and more than a doubling in just the past three years.

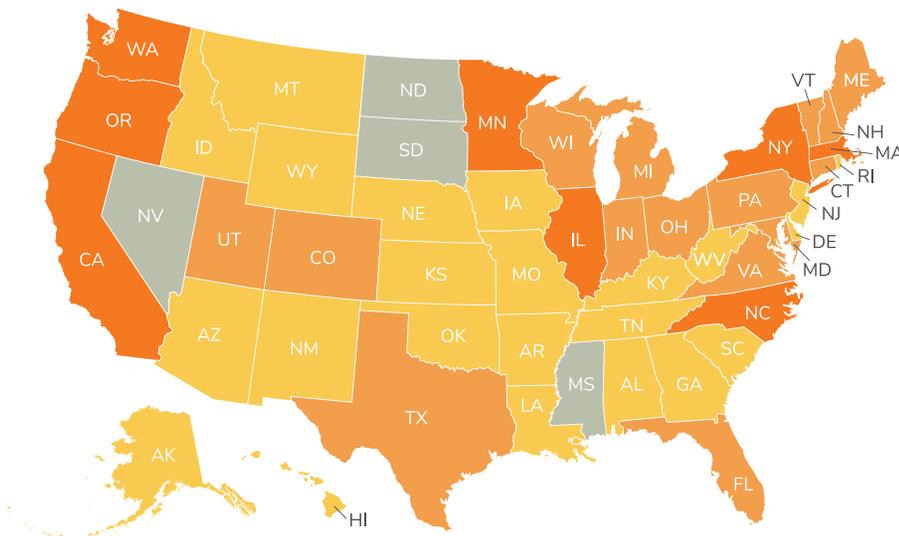
Distribution of Nature Preschools Across the United States

Not only have nature preschools grown in their total number, but they also have become more widespread across the United States, with nearly every state now having at least one nature-based program. Some states have an estimated 50 programs.



Nature Preschool Top Three

With approximately 50 nature-based programs each, California and Washington top the list of states with the most nature preschools. Interestingly, Minnesota follows closely with approximately 40 programs, despite a statewide population that's one-seventh that of California. Among the states with the most nature preschools, Minnesota has the most per capita, despite its famously harsh winters.



More than 20
 10-20 schools
 Less than 10
 No data

The Future of Nature Preschools in the United States

The global pandemic has highlighted how tenuous the early education system is in the United States. Without a national commitment to education for children under age five that mirrors our commitment to K-12 education, the nation largely relies on parents to fund a patchwork private education system, with predictable disparities based on parents' ability to pay. Despite how clearly the economy relies upon supervision for young children while parents work, and the well documented lifelong economic benefits of high-quality early education, the nation has failed to make a national commitment to funding early education.

Add to that the fact that early educators are paid far less than their counterparts in the K-12 system, and that most preschools operate with razor-thin margins in order to make programs affordable, and it's easy to see why the extended closures have strained the system to its breaking point. New regulations requiring limited class sizes and significant new investments in infection-control measures only add weight to the burden.

Nature preschools are affected by these burdens in the same ways as all other preschools. As a result, the pandemic certainly will lead to economic hardship for educators in this sector and extensive program closures, slowing the growth in nature preschools for the first time since the Natural Start Alliance began tracking the sector in 2013.

But there is also a possibility that the pandemic might boost the growth of nature preschools over the coming years. Experts now widely agree that outdoor environments are safer than indoor environments. In addition, nature is well known to provide physical and mental health benefits that children will likely need now more than ever. Nature preschools have long regarded outdoor environments as their preferred setting for learning, and are experts in supporting children's healthy and safe development as they play and learn outdoors. As schools are reopening, some nature preschools are reporting dramatically increased interest in their outdoor-focused approach.



Photo: Frazer Center

Nature preschools entered 2020 at their highest levels and widest distribution across the United States recorded to date. With no sign of a levelling off in their growth, and many reasons why parents may favor outdoor learning over the next several years, it seems likely this sector will continue to grow, even if the pandemic and the significant financial strains it has brought cause it to grow more slowly than it has over the past decade.

References

- ¹ Dadvand, P., Pujol, J., Macia, D., Martínez-Vilavella, G., Blanco-Hinojo, L., Mortamais, M., et al. (2018). The association between lifelong greenspace exposure and 3-dimensional brain magnetic resonance imaging in Barcelona schoolchildren. *Environmental Health Perspectives*. doi:http://dx.doi.org/10.1289/EHP1876
- ² Tuen Veronica Leung, Wing, Tuen Yee Tiffany Tam, Wen-Chi Pan, Chih-Da Wu, Shih-Chun Candice Lung, and John D Spengler, 'How Is Environmental Greenness Related to Students' Academic Performance in English and Mathematics?', *Landscape and Urban Planning*, 181 (2019), 118–24 https://doi.org/https://doi.org/10.1016/j.landurbplan.2018.09.021; McCree, Mel, Roger Cutting, and Dean Sherwin, 'The Hare and the Tortoise Go to Forest School: Taking the Scenic Route to Academic Attainment via Emotional Wellbeing Outdoors', *Early Child Development and Care*, 188 (2018), 980–96 https://doi.org/10.1080/03004430.2018.1446430; Gardner, Paul, and Sonja Kuzich, 'Green Writing: The Influence of Natural Spaces on Primary Students' Poetic Writing in the UK and Australia', *Cambridge Journal of Education*, 48 (2018), 427–43 https://doi.org/10.1080/0305764X.2017.1337720; Kloos, H., Waltzer, T., Maltbie, C., Brown, R. D., & Carr, V. (2018). Inconsistencies in early science education: Can nature help streamline state standards? *Ecopsychology*, 10(4). doi:http://dx.doi.org/10.1089/eco.2018.0042
- ³ Cameron-Faulkner, T., Melville, J., & Gattis, M.. (2018). Responding to nature: Natural environments improve parent-child communication. *Journal of Environmental Psychology*, 59, 9-15. doi:http://dx.doi.org/10.1016/j.jenvp.2018.08.008; Richardson, T., & Murray, J.. (2017). Are young children's utterances affected by characteristics of their learning environments? A multiple case study. *Early Child Development and Care*, 187(3-4), 457-468. doi:http://dx.doi.org/10.1080/03004430.2016.1211116
- ⁴ Scott, J. T., Kilmer, R. P., Wang, C., Cook, J. R., & Haber, M. G.. (2018). Natural environments near schools: Potential benefits for socio-emotional and behavioral development in early childhood. *American Journal of Community Psychology*. doi:http://dx.doi.org/10.1002/ajcp.12272
- ⁵ McCree, M., Cutting, R., & Sherwin, D.. (2018). The Hare and the Tortoise go to Forest School: Taking the scenic route to academic attainment via emotional wellbeing outdoors. *Early Child Development and Care*, 188(7), 980-996. doi:http://dx.doi.org/10.1080/03004430.2018.1446430
- ⁶ Carr, V. W., Brown, R. D., Schlembach, S., & Kochanowski, L.. (2017). Nature by design: Playscape affordances support the use of executive function in preschoolers. *Children, Youth and Environments*, 27(2), 25-46. doi:http://dx.doi.org/10.7721/chilyoutenvi.27.2.0025; Schutte, A. R., Torquati, J. C., & Beattie, J. L.. (2017). Impact of urban nature on executive functioning in early and middle childhood. *Environment and Behavior*, 49(1), 3-30. doi:http://dx.doi.org/10.1177/0013916515603095
- ⁷ Chiumento, A., Mukherjee, I., Chandna, J., Dutton, C., Rahman, A., & Bristow, K.. (2018). A haven of green space: Learning from a pilot pre-post evaluation of a school-based social and therapeutic horticulture intervention with children. *BMC Public Health*, 18. doi:http://dx.doi.org/10.1186/s12889-018-5661-9; Tillman, S., Button, B., Coen, S. E., & Gilliland, J. A.. (2018). 'Nature makes people happy, that's what it sort of means:' Children's definitions and perceptions of nature in rural Northwestern Ontario. *Children's Geographies*. doi:http://dx.doi.org/10.1080/14733285.2018.1550572; Bezold, C. P., Banay, R. F., Coull, B. A., Hart, J. E., James, P., Kubzansky, L. D., et al.. (2018). The relationship between surrounding greenness in childhood and adolescence and depressive symptoms in adolescence and early childhood. *Annals of Epidemiology*, 28(4), 213-219. doi:http://dx.doi.org/10.1016/j.annepidem.2018.01.009
- ⁸ Kuo, F. E., & Taylor, A. F. (2004). A potential natural treatment for attention-deficit/hyperactivity disorder: evidence from a national study. *American journal of public health*, 94(9), 1580-6.
- ⁹ Li, D., Larsen, L., Yang, Y., Wang, L., Zhai, Y., & Sullivan, W. C.. (2018). Exposure to nature for children with autism spectrum disorder: Benefits, caveats, and barriers. *Health and Place*. doi:http://dx.doi.org/10.1016/j.healthplace.2018.11.005
- ¹⁰ Meyer, J., Müller, U., & Macoun, S.. (2017). Comparing classroom context and physical activity in nature and traditional kindergartens. *Children, Youth and Environments*, 27(3), 56-77. doi:http://dx.doi.org/10.7721/chilyoutenvi.27.3.0056; Müller, U., Temple, V. A., Smith, B., Kerns, K., K. Eycke, T., Crane, J., & Sheehan, J.. (2017). Effects of nature kindergarten attendance on children's functioning. *Children, Youth and Environments*, 27(2), 47-69. doi:http://dx.doi.org/10.7721/chilyoutenvi.27.2.0047; Cosco, N. G., Moore, R. C., & Smith, W. R. (2014). Childcare Outdoor Renovation as a Built Environment Health Promotion Strategy: Evaluating the Preventing Obesity by Design Intervention. *American Journal of Health Promotion*, 28(3_suppl), S27-S32.
- ¹¹ Frenkel, H., Tandon, P., Frumkin, H., & Vander Stoep, A. (2019). Illnesses and Injuries at Nature Preschools. *Environment and Behavior*, 51(8), 936–965. https://doi.org/10.1177/0013916518773469; Sando, O. J., Sandseter, E. B. H., Pareliussen, I., & Egset, C. K. (2017). Injuries in Norwegian Early Childhood and Care (ECEC) Institutions. *Tidsskrift for Nordisk Barnehegeforskning*, 14(0). https://doi.org/10.7577/nbf.1698; Brussoni, M., Gibbons, R., Gray, C., Ishikawa, T., Sandseter, E. B. H., Bienenstock, A., ... Tremblay, M. S. (2015). What is the Relationship between Risky Outdoor Play and Health in Children? A Systematic Review. *International Journal of Environmental Research and Public Health*, 12(6), 6423–6454. https://doi.org/10.3390/ijerph120606423
- ¹² Cordiano, T., Lee, A., Wilt, J., Elszasz, A., Damour, L., Russ, S. (2019). Nature-Based Education and Kindergarten Readiness: Nature-Based and Traditional Preschoolers are Equally Prepared for Kindergarten. *International Journal of Early Childhood Environmental Education*, 6(3), 18-36. https://naturalstart.org/sites/default/files/journal/5_cordiano_et_al_formatted_draft_v4.docx_.pdf; Sobel, D., Skibbe, L. E., Konishi, H., Pikus, A., & Larimore, R. A. (2017). *Executive summary for researching impacts of nature-based early childhood education.*; Zamzow, J., Ernst, J. (2020). Supporting School Readiness Naturally : Exploring Executive Function Growth in Nature Preschools. *International Journal of Early Childhood Environmental Education*, 7(2), 6–16. https://naturalstart.org/sites/default/files/journal/5_final_zamzow_ernst.pdf
- ¹³ North American Association for Environmental Education (NAAEE). (2017). *Nature preschools and forest kindergartens: 2017 national survey*. Washington, DC: NAAEE. https://naturalstart.org/sites/default/files/staff/nature_preschools_national_survey_2017.pdf

natural start
alliance



The Natural Start Alliance is a project of the North American Association for Environmental Education (NAAEE).

Learn more at naturalstart.org and naaee.org.