



Nature Preschools in the United States

2022 National Survey

natural start
alliance

 **naaee**
North American Association
for Environmental Education



natural start alliance



*The Natural Start Alliance is a project of the
North American Association for Environmental Education*

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Photo: Secret Forest Playschool - Meghan Morrow

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Executive Summary

The benefits of nature for children’s healthy development—physically, mentally, and emotionally—are now well documented, and as a result, schools across the United States are taking young children outside to capitalize on nature as a low-cost, high-impact educational intervention. They are doing this in a variety of ways, from installing gardens and outdoor classrooms, to spending designated days learning outside, often called “forest days.”

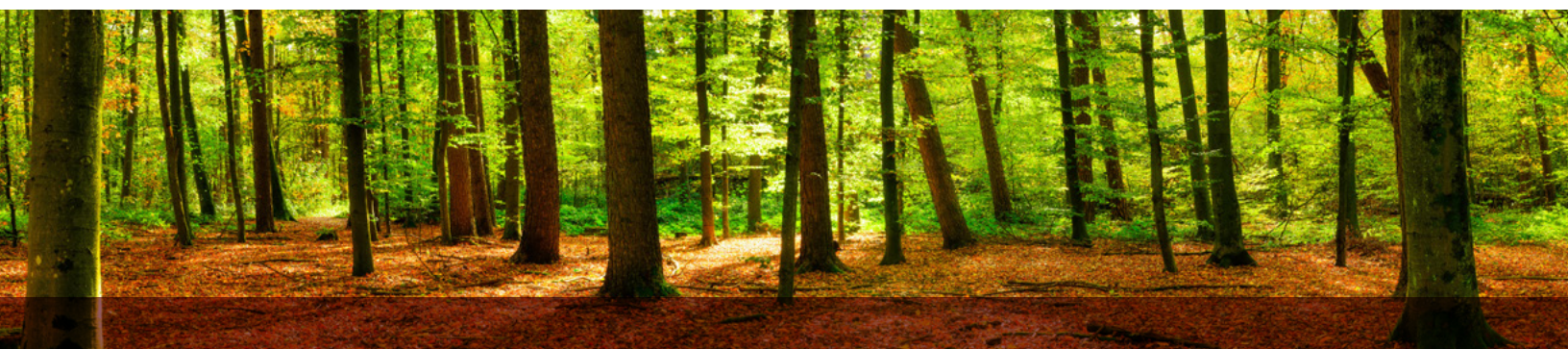
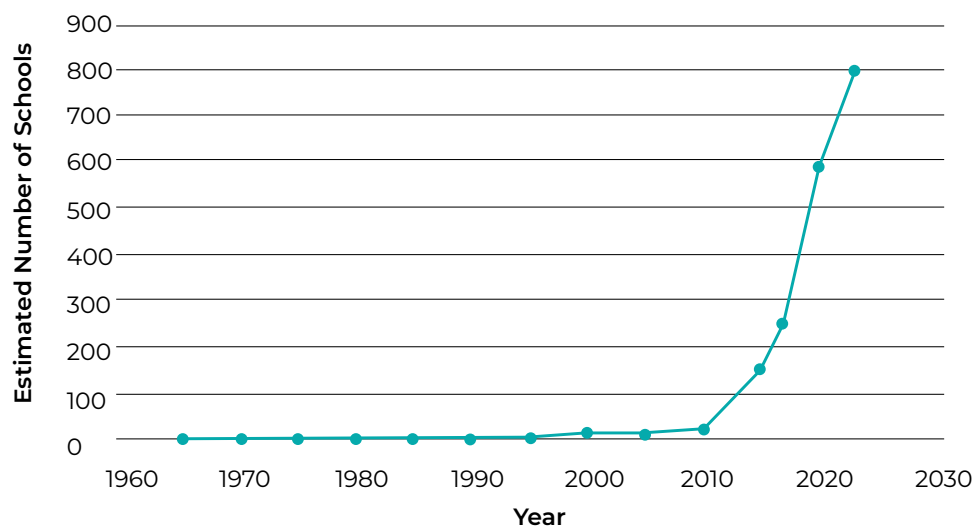
Some preschools have made nature the heart of their curriculum, providing educational experiences that not only promote healthy development, but also promote connection to and care for nature and the environment. These schools may be called nature-based preschools, place-based schools, outdoor preschools, nature kindergartens, forest kindergartens, or zoo and aquarium schools, among other terms. They can have both indoor and outdoor facilities, or can conduct the entire program outdoors (in which case, many are called outdoor preschools, forest preschools, or forest kindergartens). For the purposes of this report, all of these schools are collectively called “nature preschools.”

The Natural Start Alliance has been tracking the growth of nature preschools since 2017, when programs were counted and surveyed for the first time. In 2022, Natural Start surveyed programs in the United States again. This report provides updated and expanded information about the number, distribution, and operations of programs, along with basic characteristics of staff and children in nature preschools, after five more years of growth.

Expansion of Nature Preschools

Today, there are an estimated 800 nature preschools in the United States, up more than 200% from 2017, and more than 300% since the programs began rapidly expanding just after 2010. Collectively, an estimated 25,000 children enroll in nature preschools annually. Programs are located in almost every state, with the most total programs in California, Washington, and Minnesota, and the most per capita in Vermont, New Hampshire, and Maine.

**Estimated Number of Nature Preschools
in the United States, 1965-2022**



Key Findings: Programs

Nature preschools serve a core audience of 3-5 year-old children, but many also serve infants, toddlers, and school-age children. Key findings related to program operations include:

- **Increasing Time Outside:** Children in nature preschools spend most of their school day outdoors (70% of programs spend 70% or more of their school day outside). Nearly a third (30%) of programs spend the entire school day outside, up from about 22% of programs in 2017. This percentage represents an estimated 240 preschools operating entirely outdoors in the United States. In terms of absolute hours spent outside, on average, full-day programs spend 5 hours per day outside and half-day programs spend 3 hours outside.
- **Covid Boosts Demand and Moves Programs Outside, but Presents Challenges:** The Covid pandemic could be a factor in moving more programs outside for the entire school day. About half of programs report that the pandemic caused them to increase the amount of time they spend outdoors. A large majority (80%) indicate that the pandemic increased demand for outdoor programs (but this sample does not include programs that may have closed due to the pandemic). Programs also note that the pandemic strained children's mental health and brought financial and staffing challenges, particularly contributing to staff turnover.
- **Expanding Options for Program Length:** A small majority of nature preschools offer full-day options, up more than 10 percentage points from 2017, suggesting that program day length options for families have expanded. Many nature preschools, however, remain half-day-only programs.
- **Licensing is Critical for Equitable Access, but Challenging for All-Outdoor Programs:** America's child care licensing system was built for the indoors, so outdoor-only programs don't always fit, and as a result, can't always be licensed if they don't maintain indoor spaces that meet licensing standards. While the majority of nature preschools are licensed (58%), a sizable minority are not (42%). Instead, these programs often operate for fewer hours or with fewer children than required for licensing, or are otherwise exempt from licensing. Among programs that operate with 100% of their school time outside, just 15% are licensed, compared to an average of 58% of nature preschools overall. The overall rates for licensing in nature preschools have not changed substantially since 2017. Since licensing is a basic requirement for public funding of pre-K programs, the absence of public funding for nature preschools represents a significant barrier to equitable access to this approach to education.



Photo: Takoma Park Cooperative Nursery School

Key Findings: Children in Nature Preschools

The number of children attending nature preschools annually has increased from an estimated 10,000 children in 2017 to 25,000 in 2022. The following are key findings related to the characteristics of children in nature preschools:

- **More Multiple Language Learners in Programs:** The average percentage of multiple language learners in nature preschools in 2022 (13.7%) is up significantly from 2017 (6.6%), but is below the national average of preschool-aged children who are multilingual (23%).
- **More Children with Disabilities in Programs:** Nature preschools serve children with disabilities at similar rates as children are served by the Individuals with Disabilities in Education Act (IDEA) in public schools (7% of nature preschool students, and 6.7% of children ages 3-5 served by IDEA). The average percentage of children with disabilities in programs is up from 2017 (when it was 4.7%).
- **Racial Diversity Largely Unchanged:** Children who are White are more likely to attend nature preschools, while children who are Black or Latino* are less likely. Children who are American Indian and Asian are represented in programs at similar rates as they are in the overall population. The proportion of White children in nature preschools has decreased since 2017 (82% in 2017 and 78% in 2022), but much of this decrease may be related to a change in the wording of the question (now including a multi-racial option) because the rates at which other racial groups attend have not changed substantially.



Photo: Durham Community Preschool

Key Findings: Staff in Nature Preschools

In total, nature preschools employ an estimated 6,000 professionals in the United States. The following are key findings related to the characteristics of staff in nature preschools:

- **Racial Diversity of Staff Matches Children's Diversity:** The racial diversity of staff in nature preschools broadly matches the diversity of children in these programs, with White educators being over-represented relative to the early childhood workforce overall, and Latino and Black educators being under-represented relative to the overall workforce.
- **Men in the Workforce:** Although women make up an estimated 90.1% of the nature preschool workforce, this figure is below the rate at which women are represented in the overall early childhood workforce (97.4)%, meaning that men and gender nonconforming professionals are better represented in nature preschools than in preschools overall.
- **An Educated Workforce:** An estimated 71% of the total nature preschool workforce holds a bachelor's or more advanced degree, and an estimated 67% of teachers hold this degree. This rate is substantially above the estimated 35% of preschool teachers who hold a bachelor's degree in the early childhood workforce overall.
- **Wages Above Average Preschool Wages, But Well Below Overall Average Wages:** The median hourly wage for nature preschool teachers (\$18.00/hr) is about 24% above the median wage for all preschool teachers (\$14.52/hr), but well below the median wage of U.S. workers (\$33.02/hr).

*For this publication, we use the term Latino as in the U.S. Census, but respect preferences among members of the community to use other terms, including Latina, Latine, and Latinx.



Photo: Secret Forest Playschool - Meghan Morrow

Propelling Future Growth

Nature preschools are likely to continue to rapidly expand in the United States, as program growth remains in an upward trend without a plateau at this time. As the field continues to grow, training, professional support, and policy change are needed to support an expanding workforce and to ensure nature-based education is widely available and welcoming to all educators and families. The following are some of the elements that are needed to support growth and ensure that nature preschools are accessible and inclusive for families and the workforce as the movement expands:

- **Professional Training:** The outdoor, nature-based approach to early childhood education brings a unique set of practices and considerations that require training to implement. Pre-service and in-service training opportunities for nature-based education have developed with the field (including degree programs and certificates, certification programs, and short-term training such as workshops), but much more is needed to support the development of new nature preschools, to address disparities in participation in the workforce across racial and ethnic groups, and to encourage nature-based practices in all early childhood programs.
- **Professional Networks:** The growth in training in nature-based education has been accompanied by growth in opportunities for professional connection and support among nature-based early childhood educators. National professional networks have developed along with state and regional nature-based education groups. These organizations offer critical support at the state level, but limited capacity constrains most of these volunteer-run organizations. Investments to strengthen these interconnected networks will be essential in promoting the continued growth of state-level professional support of nature-based education.
- **Policy Change for Outdoor Learning:** As nature preschools have become more common, a handful of states have begun to examine their licensing regulations to make adjustments to allow for outdoor programs. Public pre-K funding can only flow to licensed programs, and the ability of families to use public funding to attend outdoor nature preschools is essential in addressing access and equity in nature-based education (though it is not the only strategy). In addition, licensing outdoor programs can add capacity to the early childhood education system, not only by adding new programs that couldn't be licensed previously, but also by increasing capacity at existing programs if they also can license their outdoor spaces.

Nature for Every Child

As nature preschools continue to expand in the United States, they not only offer tens of thousands of children each year the opportunity to build essential skills for school and life while they play and learn outside, but they also bring greater awareness of the possibilities of nature-based education to parents and the education community as a whole. This awareness can help expand possibilities for safe, effective, and inclusive outdoor learning in all programs, nature-based or not.

Ultimately, this diffusion of nature across the early childhood landscape is the promise of nature preschools. Nature preschools are very effective at promoting children's healthy development and preparing them for future learning, but they are not the only path to a high-quality, nature-rich education. Nature preschools are essential to America's early learning landscape because they are leading the way in showing how effective nature-based education is, and they are pushing the industry to reflect on how we can change our systems to bring the benefits of nature and nature-based education approaches into every program, for every child.



Photo: Takoma Park Cooperative
Nursery School



Photo: Secret Forest Playschool - Meghan Morrow





Photo: Imua Inclusion Preschool

Introduction

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, development, and overall well-being, 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

Recent broad analyses of research have confirmed these findings with large data sets. In 2021, a research team reviewed hundreds of studies and concluded that nature promotes children's health, particularly supporting physical activity and mental health¹¹. Likewise, a 2020 study analyzed over 50 studies of the impacts of early childhood environmental education programs and concluded that the programs support cognitive, social-emotional, physical, language and literacy, and environmental literacy development¹². And a 2019 paper reviewed the research literature to explore if, and how, nature promotes learning. The researchers conclude that nature both provides a rich setting for learning (for example, by plentiful opportunities for beneficial forms of play) and positively affects learners (for example, by lowering stress and promoting attention). As a result, they argue that "It is time to take nature seriously as a resource for learning—particularly for students not effectively reached by traditional instruction."¹³



Photo: University of Delaware Lab School

"It is time to take nature seriously as a resource for learning—particularly for students not effectively reached by traditional instruction."

—Ming Kuo, Michael Barnes, and Catherine Jordan¹³

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 often called forest preschools, forest kindergartens, or outdoor preschools).

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



Photo: Takoma Park Cooperative Nursery School

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.



Photo: Secret Forest Playschool - Meghan Morrow

Counting Nature Preschools

To monitor growth in this sector of early childhood education, the Natural Start Alliance maintains a database of nature preschools in the United States. While all of the different ways that programs bring nature into education are important, it is impossible to track all of the ways that schools across the United States incorporate nature into their programs. It is possible, however, to identify and track nature preschools in the United States, and these programs are important to track because they represent a distinct and effective approach to early childhood education.

The Natural Start database of programs almost certainly does not contain every single program in the country, but should represent nearly all programs. Programs are identified when they join the Alliance (there is an opportunity to indicate if the program is a nature preschool in the sign-up form), through searches of media announcing new program openings, through state-level partners informing the Alliance about programs in their states, among other strategies. Periodically, Natural Start staff review programs in the database to ensure that they likely are nature preschools (based on a quick review of publicly available information) and that they are operational.



Identifying Nature Preschools

Natural Start's database of nature preschools is distinct from Alliance membership. When considering programs for inclusion in the database, Natural Start staff can not conduct an in-depth assessment, but do review publicly available information (most often a program's website) to determine if the program is likely a nature preschool. Staff do not make determinations about program quality, and inclusion in the database is not a form of accreditation or endorsement. Likewise, the fact that staff may decide not to add a program to the database in no way reflects program quality. The database simply exists to track nature preschools for informational purposes.

When determining whether to consider a program a nature preschool, staff consider both parts of the term: is it a "preschool" and is it "nature-based?"

Is It a Preschool? There are many high-quality early childhood education programs that are part of the Alliance that provide nature-based experiences for children, but are not counted as "preschools. To be considered a "school," staff look most closely at time and supervision (in addition to confirming that the program serves young children). Schools typically operate over a school year (or are long-term programs), instead of operating over several weeks or on a drop-in basis. Preschools also are led by teachers who are responsible for supervising the children, instead of programs in which parents or caregivers provide supervision. Some refer to this distinction as formal programs (school-based) and non-formal programs (out of school). As an example, a program in which families meet in parks and other nature-rich areas for nature play experiences is not considered a nature preschool because it does not meet the time or supervision criteria.

Is It Nature-Based? If a program is determined to be a preschool, the next step is to determine if it is nature-based. Natural Start staff consider the stated curricular focus of the program and opportunities for outdoor learning. The most important determinant for inclusion is whether the program describes itself as nature-based, place-based, outdoor, or other related terms because of the program's nature-based curriculum. Staff also confirm that the program backs this curricular focus up with rich opportunities for nature-based learning, which usually means a significant portion of school time is spent outside in environments that provide opportunities for nature connection. As an example, consider two programs that might be pre-K classrooms within an elementary school. One class implements the district's standard curriculum and uses an outdoor classroom for learning as time permits. The second class implements a nature-based curriculum and learns primarily outdoors, using modified assessment tools to track student learning in the outdoor, play-based curriculum. The first program can be very effective, but would not be classified as a nature preschool program, while the second program would be added to the national count of nature preschools.

About the National Survey

In 2017, Natural Start surveyed nature preschools in its database to better understand basic characteristics of programs in this rapidly expanding sector of early childhood education. In 2020, Natural Start was set to administer the survey again, but widespread closures and disruptions because of the pandemic made that impossible, and the survey was delayed until 2022. In 2020, in lieu of a full report, Natural Start published the number of programs, since that information is derived from the database, not from the survey.

The 2022 survey is based broadly on the 2017 survey to enable comparisons over time, but questions were reviewed and updated, and new questions were added. Natural Start staff manage the survey process, with input and advice from a variety of advisors (see acknowledgments on the inside front cover). The survey was sent via email to all 800 programs in the Natural Start database in the fall of 2022, with a deadline to complete the survey by December 2022, so figures here represent programs during the 2022-23 school year. Three hundred completed surveys were received from programs in 45 states. This response rate allows for a high level of confidence in the results.

About Natural Start

The [Natural Start Alliance](#) is a project of the North American Association for Environmental Education ([NAAEE](#)). NAAEE supports environmental education in North America and around the world, and the Natural Start Alliance provides focus for this work in the early childhood years. In particular, the Natural Start Alliance supports early childhood educators in incorporating nature-based education into their teaching and programs, and advocates for nature-based education that is safe, effective, and inclusive. The Alliance includes over 1,000 organizational members and over 2,500 individual members. There is no cost to join the Alliance.

Natural Start and NAAEE host the annual [Nature-Based Early Learning Conference](#) (in addition to an [annual conference and research symposium](#) hosted by NAAEE in support of environmental education for all ages) and publish the [Nature-Based Preschool Professional Practice Guidebook](#), the [Early Childhood Environmental Education Programs: Guidelines for Excellence](#), and the [International Journal of Early Childhood Environmental Education](#).



Photo: University of Delaware Lab School



Number of Programs

Nature preschools have continued to rapidly expand across the United States. In total, there are an estimated **800 nature preschools in the United States today**, up 35% from an estimated 585 in 2020.

Nearly 70% of programs report that they are maintaining a wait list, suggesting that demand for nature-based programs remains high and continues to exceed supply in most areas where these programs are located. By comparison, 80% of programs reported that they were maintaining wait lists in 2017, suggesting that the growth in programs is helping to meet the strong demand, but future growth is expected with continued widespread demand.

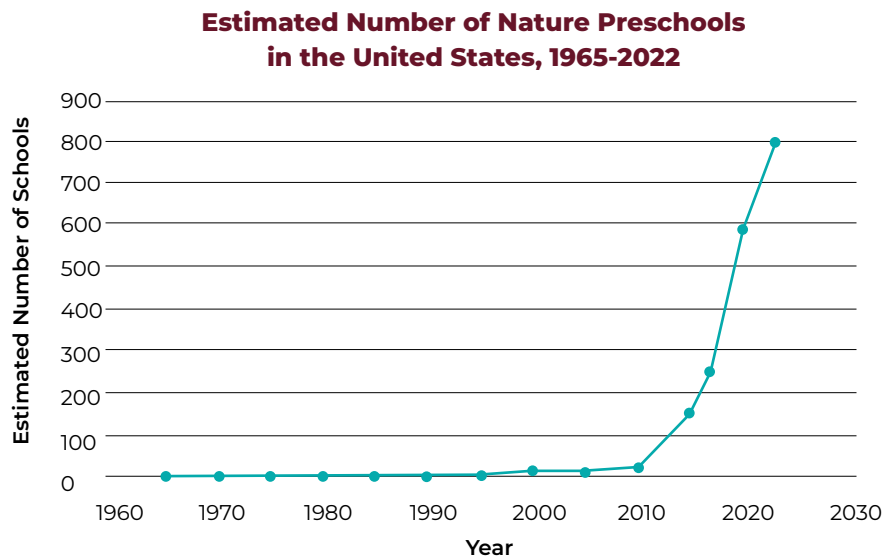


Photo: Appalachian Forest School

**Nearly 70% of programs
report that they are
maintaining a wait list.**



Distribution of Programs in the United States

Nature preschools are located in almost every state. Washington, California, and Minnesota have the most schools per state, with each state having more than 50 schools. When ranked by the number of schools per capita, however, the Northeast prevails, with Vermont, Maine, and New Hampshire topping the list. Washington and Minnesota are also represented in the top 10 states ranked per capita.

It is notable that many of the states with the most nature preschools, both in total number and per capita, are some of the northernmost states in the continental United States. Despite their cold—or in the case of Washington, wet—winters, programs in these states prioritize and safely offer year-round outdoor learning opportunities for young children.

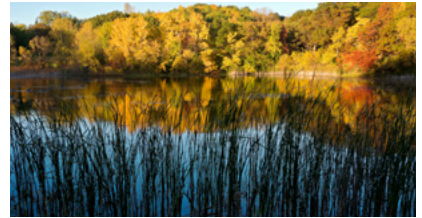
Highest Number of Nature Preschools by State



California



Washington

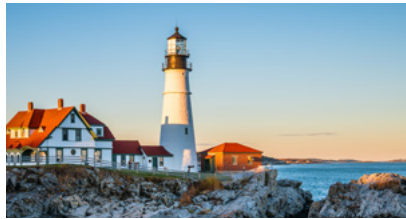


Minnesota

Highest Number of Nature Preschools Per Capita



Vermont

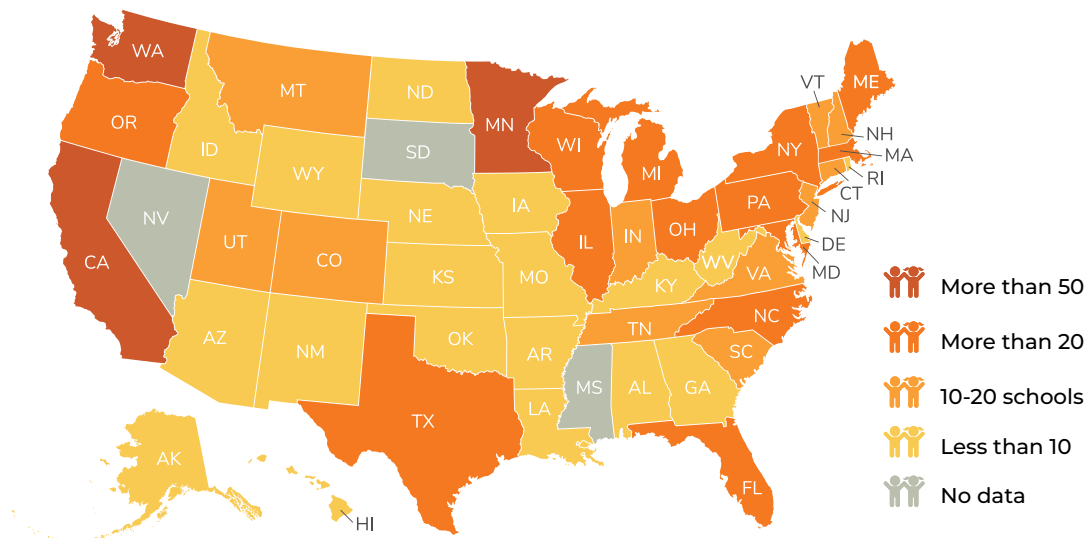


Maine



New Hampshire

Distribution of Nature Preschools Across the United States



Program Characteristics

Nature preschools primarily serve children ages 3 to 5. Nearly half of programs (46%) begin enrolling children at age 2. About a third of programs also serve children ages 6 to 8. Infants and toddlers are served at lower rates: Just 12% of programs report serving infants and 20% serve one-year-olds.

Time Outside

Nature preschools are often called “outdoor preschools” for a reason: Seventy percent of programs report spending 70% or more of their school day outdoors. The average percent of the school day that programs spend outside increased from about 75% in 2017 to about 80% in 2022. The share of schools reporting that they spend 100% of their school time outdoors has increased to 30%, up from about 22% in 2017. This percentage represents an estimated 240 preschools operating entirely outdoors in the United States.

The large percentage of the school day that is spent outside reflects the curricular focus of nature-based programs. In terms of absolute hours spent outside, on average, full-day programs spend 5 hours per day outside and half-day programs spend 3 hours outside.

Program Day Length

A majority of nature preschools (57%) offer full-day or both full-day and half-day programs. A sizable minority (43%) offer only a half-day. About one-third of nature preschools offer before- or after-care options to extend their hours, while about two-thirds do not. In 2017, 46% of programs offered a full-day program option, suggesting that program day length options have expanded. Information about before- and after-care options was not collected in 2017, however, about a quarter of programs reported a program day length of 8 hours or more (8-11 hours) in 2017.

Tuition Options

Virtually every nature preschool operates with tuition, but there are options for families to help cover costs. About 56% of programs offer scholarships, tuition assistance, or sliding scales based on income. About 25% of programs operate with some form of public funding (for example, vouchers, subsidies, Head Start, or county assistance).

Public Lands

Not every nature preschool has private land where they can conduct their program. As a result, public lands such as city or municipal parks, county parks, or national forests figure prominently in nature-based early childhood education: More than half of nature preschools (55%) report that they either operate on or visit public lands.



Seventy percent of programs report spending 70% or more of their school day outdoors.

Licensing

In most states, but not all, preschool programs are not required to be licensed unless they operate for a certain number of hours per day or serve a certain number of children. While programs operating below the specified levels are allowed to operate, they can not access public dollars that support pre-K access for children.

The majority (58%) of nature preschools in the United States are licensed. There are a variety of reasons that a large minority (42%) of nature preschools are not licensed. Some are part of larger private or independent schools and therefore are exempt from licensing. Others operate as camp or co-op programs. Some programs may not be eligible for licensing in their state if they operate entirely or primarily outdoors and do not have an indoor space that meets licensing requirements.

For many of these outdoor-based programs, indoor spaces are not primary learning spaces, and securing and outfitting indoor spaces that meet licensing standards may not be practical or even possible. In these cases, in order to operate a program but not be licensed, these programs may operate for fewer days or hours than required for licensing, or serve fewer children than required for licensing. The rate of licensing drops from an average of 58% for all programs to 15% among programs that operate 100% outdoors.

The overall proportion of nature preschools that are licensed has not changed since 2017, but this proportion could grow in coming years as states begin to develop new licensing options for outdoor and nature-based preschools. Currently, only Washington offers a licensing option for outdoor preschools. At the time of writing, Maryland's governor is set to sign legislation authorizing a pilot program to license outdoor preschools, a bill is pending in Oregon, and Colorado's Department of Early Childhood is developing a new half-day licensing option for outdoor preschools. The expansion of licensing options for programs operating entirely or almost entirely outdoors could increase capacity in the early care and education landscape by increasing the number of programs, and should also bring more public funding for outdoor learning.

Covid Impacts

Nature preschools report that the pandemic has affected the field in a variety of ways, some of which are positive and some more negative. The greatest consensus among programs is that the pandemic increased demand for their programs: 80% indicated that the pandemic boosted demand, while just 3% believed it decreased demand. (Although it should be noted that programs that may have closed because of pandemic-related impacts before 2022 were not surveyed.) About half of programs also indicate that the pandemic caused them to increase their time spent outdoors during the day, perhaps accounting for the overall increase in time spent outdoors compared to 2017. And almost a third of programs named the pandemic as a key factor in deciding to launch or expand their program. More negatively, more than half of programs believe that the pandemic increased mental health challenges among children. Programs also noted that the pandemic brought financial challenges and challenges in staffing, particularly contributing to staff turnover.



Photo: A Safe Place Childcare

The expansion of licensing options for programs operating entirely or almost entirely outdoors could increase capacity in the early care and education landscape by increasing the number of programs, and should also bring more public funding for outdoor learning.

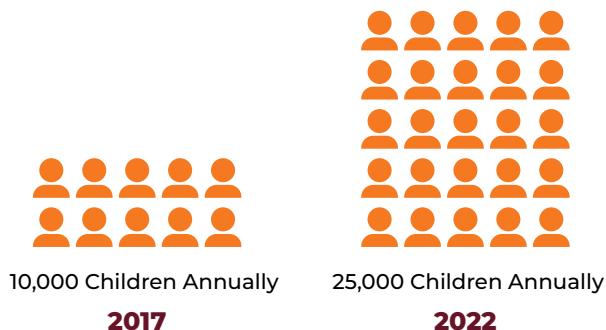


Children's Characteristics

Nature preschool programs serve a median of 32 children per program. With an estimated 800 programs nationally, an estimated 25,600 children are enrolled in nature preschools annually.

This figure is up significantly from 2017, when an estimated 10,000 children were served annually (with a median of 39 children per program).

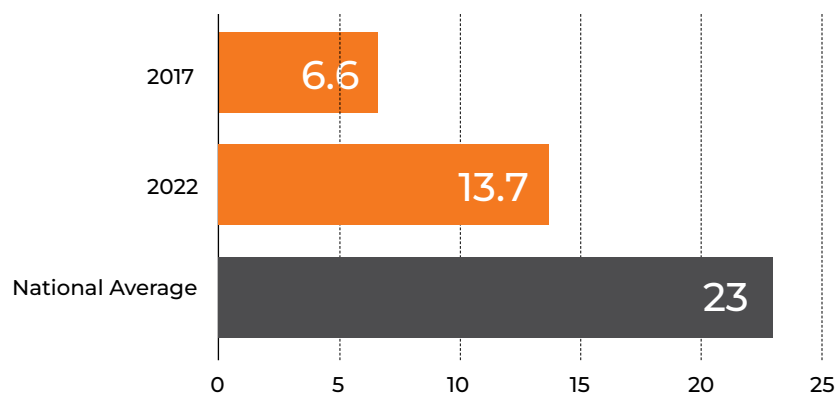
Total Number of Children Served



Multiple-Language Learners

The average percentage of multiple-language learners in nature preschools has increased since 2017. In 2022, 13.7% of children in nature preschools were multiple-language learners. This figure is below the estimated national rate of 23% of preschool-aged children,¹⁴ but is double the percentage reported by programs in 2017, when nature preschools reported that an average of 6.6% of children in programs were multiple-language learners.

Average Percent of Multiple-Language Learners in Nature Preschools (2017 and 2022) and the Overall U.S. Population



Children with Disabilities and Special Education Needs

About two thirds (68%) of nature preschools served children with disabilities in the 2022-23 school year. The average percentage of children with disabilities reported by each program is 8.3%, compared to an average of 4.7% in 2017, indicating that nature preschools are serving children with disabilities and special education needs at higher rates than they were five years ago.

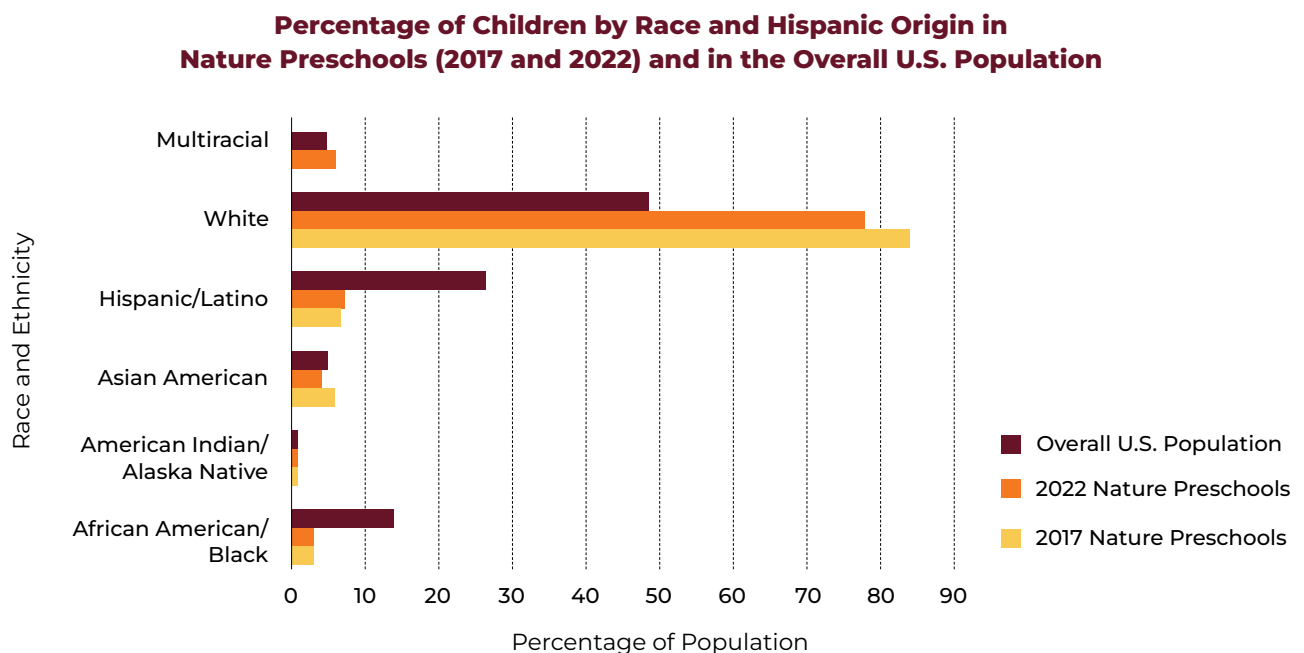
Calculated slightly differently, the number of children with disabilities in nature preschools in 2022 represents 7% of the total number of children enrolled in nature preschools. According to the U.S. Department of Education, approximately 6.7% of children ages 3-5 are served by the Individuals with Disabilities Education Act (IDEA),¹⁵ indicating that nature preschools are serving children at similar rates to the overall rate at which children with disabilities are served in public schools. In addition, the three most common disabilities represented in IDEA services—developmental delay, speech or language impairment, and autism—are also the most common disabilities represented in nature preschools.

Racial Diversity

Since data about the racial makeup of nature preschools became available in 2017, the high proportion of White children in these programs has been notable. In 2017, programs' student bodies were 82% White on average. In 2022, this percentage dropped five points to 78%, a notable decrease, but still well above the percentage of White children in the United States overall (47.3%).¹⁶ It's important to note that in the 2022 survey, programs were offered the opportunity to identify children as multiracial, but that option was not available in 2017; this change may account for some of the decrease in the proportion of White children in programs.

In addition to an over-representation of White children in nature preschools, there is an under-representation of Latino and Black children, and the percentages for both of these groups in programs has not increased substantially since 2017. Asian and American Indian children are represented in nature preschools at similar rates as they are represented in the overall population.

It should be noted that data on the racial demographics of children in nature preschools is an estimate based on the information provided by programs. Many programs do not collect information about the racial background of their students, and in those cases, programs either made their best guess about children's race and ethnicity, or declined to provide information. Nearly 90% of survey respondents responded to this question, either through direct knowledge or a best guess.



Staff Characteristics

Nature preschools are staffed (including positions for teachers, teacher assistants and aides, administrators, and support staff) by an average of 7.47 staff positions per program, including both full-time and part-time positions. This equates to a total estimated workforce of approximately 6,000 professionals working in some capacity in nature preschools.

This represents a significant increase from the estimated 1,500 professionals working in nature preschools in 2017, due largely to the increase in the number of programs. The average number of staff per program increased slightly from approximately 7.1 per program in 2017 to 7.5 per program in 2022.

Full-Time and Part-Time Staff

The proportion of staff that are working for nature preschools full time increased from 2017 to 2022. In 2017, approximately 42% of the nature preschool workforce was full time. By 2022, that portion increased to 50%. While part-time employment was more common than full-time employment in 2017, now staff are about equally likely to be full time or part time.

Racial Diversity of Staff

Like the children in nature preschools, staff in nature preschools skew White. In fact, the racial and ethnic makeup of the nature preschool workforce is broadly aligned with the racial and ethnic makeup of children in programs.

On average across all nature preschool programs, staff are 80.4% White, 9.2% Latino, 3.2% Black, 2.4% Asian, and less than 1% American Indian. By comparison, according to the U.S. Bureau of Labor Statistics, the overall preschool and kindergarten workforce is 74.6% White, 13.5% Latino, 16.7% Black, and 4.1% Asian.¹⁷ Among all non-White groups, the greatest disparity in representation in staff in nature preschools compared to the overall workforce is among Black educators, who represent 16.7% of the overall preschool and kindergarten workforce, but just 3.2% of the nature preschool workforce.

Data regarding the demographics of nature preschool staff were not collected in 2017, so changes in the racial demographics of staff over time are not available.

Photo: Appalachian Forest School



Nature Preschool and Overall Preschool and Kindergarten Workforce by Race/Ethnicity

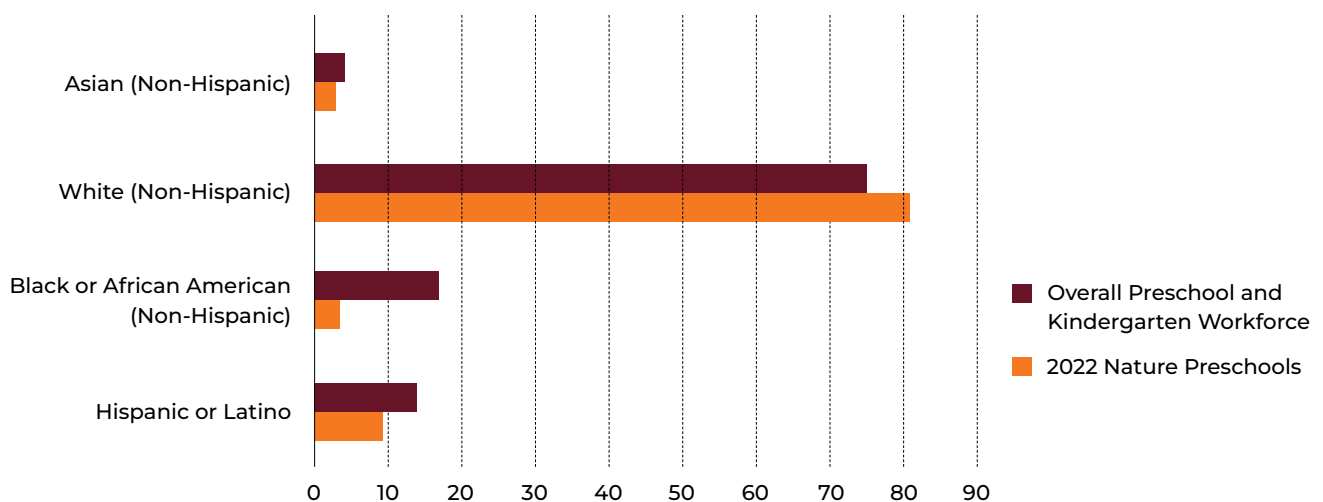


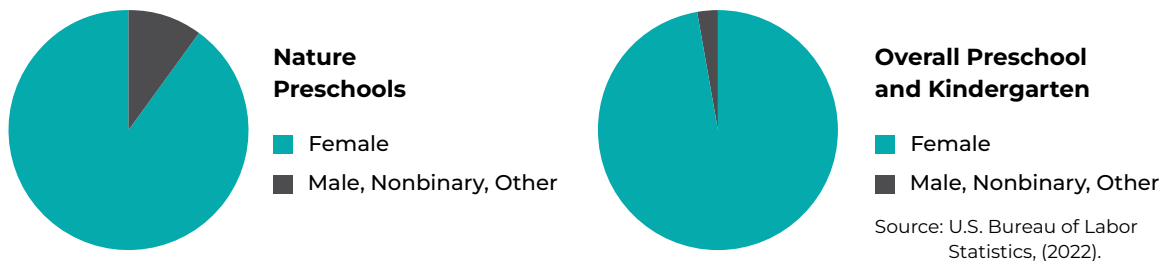


Photo: Secret Forest Playschool - Derek Montgomery

Gender of Staff

Women make up an estimated 90.1% of the nature preschool workforce. While women represent an overwhelming majority of staff in nature preschools, this percentage is less than the estimated proportion of women in the overall preschool and kindergarten workforce, at 97.4% according to the U.S. Bureau of Labor Statistics.¹⁸ Men and gender nonconforming professionals are better represented in nature preschools than in the overall early childhood workforce.

Gender in the Workforce



Staff Speaking Multiple Languages

Across all programs, approximately 18% of nature preschool staff speak a language other than English. This percentage aligns with the overall U.S. population, as the U.S. Census Bureau reports that in 2019 almost 20% of people living in the United States were multilingual.¹⁹ Rates at which multilingual staff are available in nature preschools vary widely. Nearly half of nature preschools (47%) report having no multilingual staff, and 15% report that half or more of their staff are multilingual.

Education Level of Staff

Taken all together, an estimated 71% of nature preschool staff hold a bachelor's or more advanced degree (including all staff including positions for teachers, teacher assistants and aides, administrators, and support staff). The survey did not ask respondents to distinguish between education levels of different staff positions. If we assume that one staff position at each program is a director and that the director is very likely to hold a bachelor's or higher degree, and remove that position from the calculations for each program, then an estimated 67% of remaining staff hold a bachelor's or higher degree. This figure is nearly double the rate of teachers with bachelor's degrees in the overall center-based early childhood workforce, estimated at 35% percent by the National Association for the Education of Young Children (NAEYC) in 2021.²⁰ This figure is slightly below the rate at which educators hold bachelor's or higher degrees in Head Start programs, which are required by law to ensure that at least half of teachers have a bachelor's degree or higher. In 2021, 72% of Head Start teachers held a bachelor's degree or higher.²¹

Staff Compensation

Reported as hourly wages, nature preschool teachers (lead and assistant teachers) earn a median of \$18.00 per hour. (Lead teachers earn a median of \$20.00 per hour, while assistant teachers earn a median of \$17.00 per hour.) When reported by programs as an annual salary instead of an hourly rate, lead teachers were reported to earn a median annual salary of \$38,748. Programs reported a median annual salary for assistant teachers of \$28,250 (though few programs reported assistant teachers' wage as annual salary, and didn't note whether this was full-time and/or year-round employment).

The U.S. Bureau of Labor Statistics reports that the median hourly wage for all preschool teachers is \$14.52 per hour,²² putting the median hourly wage in nature preschools about 24% above the median for all preschool teachers.

While it's notable that nature-based educators are likely to earn more than the average early childhood educator, it's important to consider that early childhood educators are among the lowest-paid professionals in the U.S. workforce. According to the Center for the Study of Child Care Employment, 98% of all other jobs in the United States pay more than early childhood education.²³ The median hourly wage for nature preschool teachers is above the average for all preschool teachers, but is still 45% percent below the average hourly wage for all U.S. non-farm workers in private industry in January 2023 (\$33.02).²⁴

Early childhood educators pay a steep price for working with young children in preschool. In 2019, preschool teachers earned a median of \$14.67 per hour, while their counterparts in kindergarten earned a median of \$32.80 per hour.²⁵

The median salary reported for nature preschool directors is \$50,000. When reported as an hourly wage, the median hourly rate for directors is \$25.00 per hour. Like the wages for teachers in nature preschools, the average compensation for nature preschool directors is above the median pay for all preschool directors, at \$47,310 for an annual salary and \$22.75 per hour for an hourly rate.²⁶ The median hourly rate for nature preschool directors is 10% above the median hourly rate for all preschool directors.



Median Wages for Preschool Teachers, Kindergarten Teachers, and the Average U.S. Worker

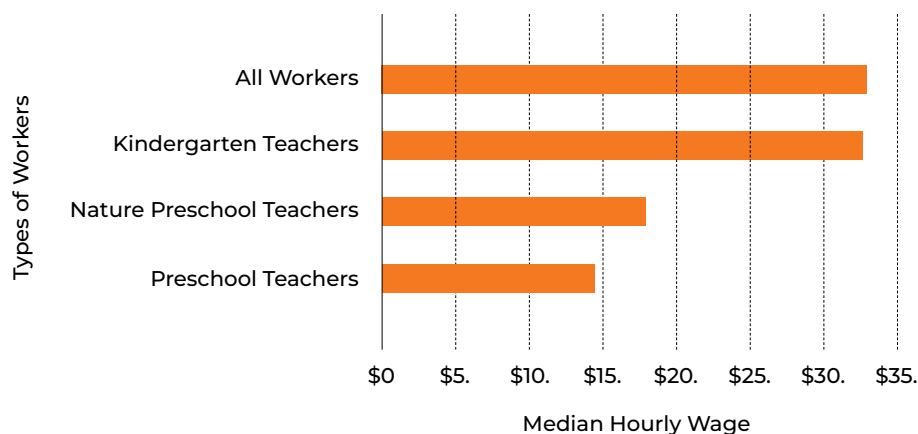




Photo: Squaxin Island Child Development Center

Propelling Future Growth

Nature-based early childhood education represents a relatively new and rapidly expanding approach to early childhood education. Nature preschools and the professionals that staff them need tailored policies and professional support as the field rapidly expands in the United States. In addition, thoughtfully planned policies, training, and professional support can promote equitable and affordable access to nature-based education, and address barriers to greater diversity in the workforce.

The nature-based education field is likely to continue to expand for several reasons. First, trends indicate that nature preschool program growth remains in an upward trend without a plateau at this time. Demand for programs remains high, and as more nature preschools open in communities, more educators and families become familiar with the benefits of the nature-based approach, creating more demand.

Second, research continues to confirm the many benefits of nature for children, and also confirms that nature-based education effectively prepares young children for future learning, transitioning the approach from theoretically beneficial to well established.

Lastly, a variety of structural elements to support the nature-based approach to education have been introduced, providing a framework to support future growth. These professional supports include professional training, professional networks, and policy shifts in support of outdoor learning. These new structural elements have begun to support the field in a variety of ways, but they need investment to expand along with the rapidly growing nature-based education field, and to help ensure that nature-based education is widely available, affordable, and welcoming to all.

Professional Training

The outdoor, nature-based approach to early childhood education brings a unique set of practices and considerations to the preschool classroom. (For more information, the *Nature-Based Preschool Professional Practice Guidebook* describes nature-based practices in the areas of teaching, environments, safety, and administration). Like Montessori, nature-based education represents a philosophy and approach that requires training to implement. Also like Montessori, teachers can decide how much or how little of the approach they adopt based on their own preferences and context. Not every preschool teacher will work in a nature preschool, but any teacher can incorporate nature-based principles to inform their own practices.

Opportunities for pre-service training (for students preparing for an education career) and in-service training (for educators already working) in nature-based early childhood education have expanded considerably over the past decade. Universities now offer bachelor's degrees and certificates in nature-based early childhood education (or closely related fields) in both in-person and online formats. A variety of organizations, and some preschools, offer certification programs in nature-based early childhood education. Requirements for certification vary by program. Shorter-term workshops, institutes, clinics, and related training designed primarily for in-service educators are widely available.

Nearly half of nature preschools host training opportunities for educators. An estimated 44% of nature preschools host interns or student teachers, providing opportunities for practical experience in nature preschools. And an estimated 46% host workshops, tours, clinics, institutes, or other short-term training.

Professional training opportunities must continue to grow with the field, and can help address the disparities in participation in the field across racial and ethnic groups. Greater coordination among training programs, and possibly a national accreditation for certification programs, could bring more alignment across training programs.

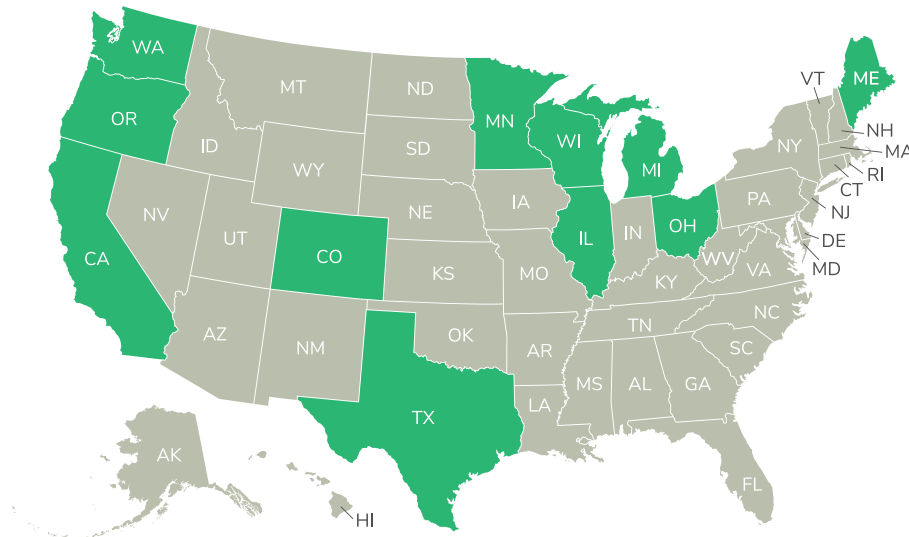
Professional Networks

The growth in training in nature-based education has been accompanied by growth in opportunities for professional connection and support among nature-based early childhood educators. While the Natural Start Alliance represents a national professional network, state and regional nature-based education groups now exist in many states. These groups encourage professional networking and may host or facilitate training programs and may advocate for policies that support outdoor and nature-based early learning. These organizations offer critical support at the state level, but most are volunteer operations, organized by professionals who are running programs of their own. Limited capacity constrains most of these organizations. Investments to strengthen this network and the backbone support it provides will be essential in promoting the continued growth of state-level professional support of nature-based education.



Photo: Appalachian Forest School

Natural Start Alliance Regional Network



The Natural Start Alliance maintains a Regional Network to connect and support organizations focused on advancing outdoor, nature-based early childhood education at regional levels, particularly at the state level. State-level organizations participating in this “Network of Networks” include:

- California • [California Association of Forest Schools](#)
- Colorado • [Colorado Collective for Nature-Based Early Education](#)
- Illinois • [Northern Illinois Nature Preschool Association \(NINPA\)](#)
- Maine • [Maine Early Childhood Outdoors \(MeECO\)](#)
- Michigan • [Michigan Teachers in Nature \(MiTIN\)](#)
- Minnesota • [Minnesota Early Childhood Outdoors \(MnECO\)](#)
- Ohio • [Ohio Nature Based Early Childhood Education](#)
- Oregon • [Outdoor Early Learning Alliance of Oregon \(OELAO\)](#)
- Texas • [Nature-Based Education Support in Texas \(NEST\)](#)
- Washington • [Washington Nature Preschool Association \(WaNPA\)](#)
- Wisconsin • [Wisconsin Nature-Based Early Childhood Association \(WinBECA\)](#)

The network also includes [Inside-Outside](#) and the [Eastern Region Association of Forest and Nature Schools](#), which both serve multiple states, and the [American Forest Kindergarten Association](#) serves a national audience.



Policy Change for Outdoor Learning

In most states, nature preschools that operate entirely outdoors can not be licensed unless they maintain indoor spaces that meet licensing requirements, even if these spaces are used only sparingly or for emergencies. Additionally, the number of children a program can serve is limited by the size of its indoor space. If a program's indoor space can be licensed for 10 children, for example, but the center has access to expansive outdoor spaces that are used as the primary learning space, the program still can only be licensed for 10 children.

The U.S. early care and education system has developed over decades on the broad premise that learning primarily happens indoors, with the outdoors being used for required breaks, especially providing opportunities for gross motor development. Nature preschools have flipped this model, with the outdoors as a primary learning space and the indoors as a secondary space, which in some cases is not used at all.

As nature preschools have become more common, states are beginning to examine their licensing regulations to make adjustments to allow for outdoor preschools. These changes in licensing are critical for several reasons. First, allowing for outdoor education can add capacity to the early childhood education system, not only by adding new programs that couldn't be licensed previously, but also by adding capacity at existing programs if they also can license their outdoor spaces. As states try to expand access to early childhood education programs, especially after the disruptions of the pandemic, increasing capacity has become a high priority.

Second, licensing is required for public funding of preschool programs. While nature preschools have made advances in serving children with disabilities and multiple-language learners, nature preschools are not as racially diverse as the overall population of children. Research demonstrates that Black and Latino children enroll in public preschool programs at significantly higher rates than White children.²⁷ Public funding to make nature preschools more accessible to families is a critical component in addressing access and equity in nature-based education, though it is not the only strategy.

And third, licensing regulations for outdoor-based programs can help increase the visibility and importance of outdoor programs, raising awareness about nature-based education among licensing agencies and early childhood education programs. Over time, greater awareness of the possibilities of nature in education, along with more familiarity with nature-based education practices, can help expand possibilities for safe, effective, and inclusive nature-based outdoor learning in all programs.



Photo: Imua Inclusion Preschool

Public funding to make nature preschools more accessible to families is a critical component in addressing access and equity in nature-based education, though it is not the only strategy.





Photo: Appalachian Forest School

Nature for Every Child

Ultimately, the diffusion of nature across the early childhood landscape is the promise of nature preschools. Nature preschools, which adopt a play-based curriculum that's grounded in the natural and cultural environment that surrounds children, are very effective at promoting children's healthy development and preparing them for future learning, but they are not the only path to a high-quality, nature-rich education.

Every child deserves equal access to high-quality early education, delivered by well-trained, well-resourced, and well-compensated educators. Every child should feel connected to the world around them, and should feel confident in their ability to care for nature and make their world better. Every child should be able to enjoy the myriad benefits of play and learning outside. Nature preschools are not the only schools that can offer this kind of education. But nature preschools are leading the way in showing how effective nature-based education is, and they are pushing the industry to reflect on how we can change our systems to bring the benefits of nature-based education into every program, for every child.



Photo: Aventuras Forest School



Endnotes

- 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/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://www.tandfonline.com/doi/full/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;
- 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 Fyfe-Johnson AL, Hazlehurst MF, Perrins SP, Bratman GN, Thomas R, Garrett KA, Hafferty KR, Cullaz TM, Marcuse EK, Tandon PS. Nature and Children's Health: A Systematic Review. *Pediatrics*. (2021) Oct;148(4):e2020049155. <https://pubmed.ncbi.nlm.nih.gov/34588297/>.
- ¹² Ardoin NM, Bowers AW. (2020) Early childhood environmental education: A systematic review of the research literature, *Educational Research Review*, Volume 31, 2020, 100353, ISSN 1747-938X, doi: <https://doi.org/10.1016/j.edurev.2020.100353>. <https://www.sciencedirect.com/science/article/pii/S1747938X19305561>

- ¹³ Kuo M, Barnes M, Jordan C. (2019) Do Experiences With Nature Promote Learning? Converging Evidence of a Cause-and-Effect Relationship. *Frontiers in Psychology*, Volume 10, doi: 10.3389/fpsyg.2019.00305. <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00305>
- ¹⁴ National Institute for Early Education Research. (2018) Supporting Dual Language Learners in State-Funded Preschool. https://nieer.org/wp-content/uploads/2018/04/YB2017_DLL-Special-Report.pdf
- ¹⁵ U.S. Department of Education. (2021) Annual Report to Congress on the Individuals with Disabilities Education Act (IDEA). <https://sites.ed.gov/idea/2021-individuals-with-disabilities-education-act-annual-report-to-congress/>
- ¹⁶ O'Hare W, Mayol-Garcia YH. (2023) The Changing Child Population of the United States: First Data from the 2020 Census. Annie E. Casey Foundation. <https://assets.aecf.org/m/resourcedoc/aecf-changingchildpop-2023.pdf>
- ¹⁷ U.S. Bureau of Labor Statistics. (2022) Labor Force Statistics from the Current Population Survey: Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity. <https://www.bls.gov/cps/cpsaat11.htm>
- ¹⁸ U.S. Bureau of Labor Statistics. (2022) Labor Force Statistics from the Current Population Survey: Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity. <https://www.bls.gov/cps/cpsaat11.htm>
- ¹⁹ United States Census Bureau. (2022) What Languages Do We Speak in the United States? <https://www.census.gov/library/stories/2022/12/languages-we-speak-in-united-states.html>
- ²⁰ National Association for the Education of Young Children. (2021) Preparing a Profession: Perspectives of Higher Education Leaders on the Future of the ECE Workforce. https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/our-work/higher-ed/final_higher_ed_leadership_report.pdf
- ²¹ Administration for Children and Families, US Department of Health and Human Services,. (2021) Head Start Program Facts: Fiscal Year 2021. <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/hs-program-fact-sheet-2021.pdf>
- ²² U.S. Bureau of Labor Statistics, U.S. Department of Labor. (2021) Occupational Outlook Handbook: Preschool Teachers. <https://www.bls.gov/ooh/education-training-and-library/preschool-teachers.htm>
- ²³ Dade, A and McLean C. (2023). The Early Educator Workforce Crisis: How Legislators Can Make a Difference for Kids, Families, and Educators. Center for the Study of Child Care Employment, University of California, Berkeley. <https://cscce.berkeley.edu/wp-content/uploads/2023/03/fact-sheet-The-Early-Educator-Workforce-Crisis-How-Legislators-Can-Make-a-Difference-for-Kids-Families-and-Educators-2023-03-13.pdf>
- ²⁴ U.S. Bureau of Labor Statistics, U.S. Department of Labor. (2023) Economic News Release: Table B-3. Average hourly and weekly earnings of all employees on private nonfarm payrolls by industry sector, seasonally adjusted. <https://www.bls.gov/news.release/empst19.htm>
- ²⁵ McLean C, Austin LJE, Whitebook M, and Olson KL. (2021). Early Childhood Workforce Index – 2020. Berkeley, CA: Center for the Study of Child Care Employment, University of California, Berkeley. <https://cscce.berkeley.edu/workforce-index-2020/report-pdf/>
- ²⁶ U.S. Bureau of Labor Statistics, U.S. Department of Labor. (2021) Occupational Outlook Handbook: Preschool and Child-care Directors. <https://www.bls.gov/ooh/management/preschool-and-childcare-center-directors.htm>
- ²⁷ Hardy E, Huber R. (2020) Neighborhood preschool enrollment patterns by race/ethnicity. diversitydatakids.org, Heller School for Social Policy and Management, Brandeis University. <https://www.diversitydatakids.org/research-library/data-visualization/neighborhood-preschool-enrollment-patterns-raceethnicity>





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