

CLIMATE RESILIENCE and NATURE IN EARLY CHILDHOOD



Photo credit: [San Francisco Children & Nature](#)

WHAT IS NATURE IN EARLY CHILDHOOD? *Nature in Early Childhood strategies work to improve regular access to nature for young children through early childhood infrastructure, programming and family engagement as well as workforce capacity and professional development. While this brief spotlights resilience overlays that complement ECNC tools and techniques, additional information on ECNC can be found in our toolkit [here](#).*

INTRODUCTION

Cities, towns and villages across the country are eager to bring nature's benefits to young children where they live, play and learn. They understand the research: providing young children, ages 0-5, with regular access to nature improves physical and mental health, develops social-emotional skills and better prepares children for school.

Climate change acts as a barrier to reaching early childhood nature connection goals as children are considered [a high-risk population](#) when exposed to climate events such as extreme heat, air pollution and flooding. Risks include, but are not limited to, respiratory illness, heat- and water-related illness, food systems impacts, insect- and tick-related diseases as well as contributing to negative mental health effects. Climate-related disasters also have the potential to disrupt early childhood education programs, impacting children's development and well-being.

Re-orienting policies, programs and infrastructure to get more young children playing and learning outside must occur in a context of reducing risks related to excessive heat, poor air

quality, sun exposure and flooding. These challenges present the unique opportunity to better align climate resilience and early childhood nature connection initiatives, allowing municipalities, their leaders and community members to “name and claim” mutual benefits. Such opportunities include, but are not limited to:

- Embedding resilience in infrastructure through (re)design of early childhood play and learning spaces to include nature, permeable surfaces, shade and more
- Engaging families and children in stewardship of early childhood play and learning spaces
- Training and supporting early childhood workers to introduce children to climate resilience
- Accounting for young children in climate resilience plans and policies

The design and policy recommendations below can help communities strengthen childhood resilience to climate change, bring nature closer to home and create lifelong environmental awareness as well as strengthen the bridge between children, family, residents and the environment. These recommendations are for communities new to such initiatives, and are not comprehensive to the broad scope of work being accomplished throughout the country. This brief can also be applicable to all aspects of early care and education.

CLIMATE RESILIENCE POLICIES & PLANS THAT PROTECT CHILDREN & CAREGIVERS

Creating a ***community-wide Shade Plan, Heat Action Plan and/or Climate Action Plan*** with specific targets regarding connecting young children to nature can help promote system-wide approaches to improving climate resilience at early childhood programs. Regarding shade infrastructure, municipalities can use action plans that implement standards to integrate shade into nature spaces when installing or renovating municipal early childhood programs. They can also create targets to ensure adequate shade at playgrounds is implemented throughout the municipality, including those managed by schools, churches, neighborhoods and multi-family properties in order to improve access to safe outdoor recreation and learning.

Municipalities can also integrate built and/or natural shade in new construction and renovation of publicly and privately owned sites targeted for children. Shade plans, such as seen in [the City of Phoenix](#), can also lead to the creation of youth-targeted tree planting programs at early childhood sites in ways that address heat vulnerable neighborhoods. Such plans, however, must take action to clearly outline goals that specifically impact early childhood programs and sites, as [early care homes and facilities](#) are largely unequipped to withstand climate impacts due to aged infrastructure and lack of funding for renovations.

Heat action and climate action plans can also help to ***enforce safe outdoor recreation and learning during heat events***. For example, in the [City of Boston](#), heat action plans provide guidance for scheduling outdoor learning activities during cooler times, in shaded areas with frequent hydration. Climate action plans can also promote the development of resilient infrastructure for childcare by investing in childcare centers within mixed-use developments and prioritizing site selection within transit accessible locations. Additionally, they can help to ***create***

financing mechanisms, such as for sustaining funding for climate-resilient childcare through capital funds. As seen in San Mateo County's [Early Childhood Climate Action Plan](#), such capital funds hope to subsidize high-cost upgrades such as solar installations, landscaping and maintenance, and energy and water storage systems. They can also fund piloting efforts and education campaigns, and support the development of community-led initiatives.

GREEN INFRASTRUCTURE & NATURE-BASED UPGRADES ON EARLY CARE SITES

[The City of Austin](#) discovered that the maximum heat index of playgrounds covered by trees and built shade structures were up to 10 degrees Fahrenheit cooler than when left uncovered. Green infrastructure and nature-based solutions provide several opportunities to improve climate resilience at sites where early childhood programming occurs. Such areas of opportunity are found below:

- Increasing **built** (e.g., pergolas, pavilions, shade sails) and **natural shade** (e.g., shade trees) can help reduce children's heat exposure in play areas.
- Implementing **trees and vegetation** (e.g., bushes, shrubs, tall grasses) on site can also [help to reduce](#) local heat islands, improve air quality, provide green stormwater management, improve human health and comfort, and reduce energy use.
- Prioritizing **planting native vegetation** can help strengthen the local ecosystem and support biodiversity and habitat restoration while providing climate benefits and creating interactive play and learning spaces for children. Native plants are also more drought-tolerant, which reduces watering costs for site operators.
- Incorporating **wildfire resistant landscaping** and gardening [can help reduce wildfire risk](#), thus increasing the resilience of early childhood programs.
- Integrating **green stormwater infrastructure** (e.g., rain gardens, green roofs, permeable paving, bioswales) with and around early childhood programs can help address flooding and reduce local heat islands. Such spaces can serve as nature-based, interactive learning spaces for children.

CLIMATE RESILIENCE STRATEGIES IN EARLY CARE AND EDUCATION

There are several ways in which embedding climate resilience interventions can strengthen early childhood learning curricula for children and their caretakers. Incorporating nature-based and climate-related learning into curriculum through implementation of **rain gardens and bioswales** creates interactive nature-play spaces while reducing flooding, decreasing heat islands and supporting native habitats. Planting **vegetable gardens and fruit trees** also provides an opportunity to cultivate and learn about local food systems, support native plants, improve food security and help to cool early childhood playspaces. [Fitch Mountain Preschool](#) in Healdsburg, California has been able to blend climate resilience with early care and education opportunities. The site replaced asphalt areas with an edible garden that supports a nutrition program and planted willow trees to create a shaded play area that can be up to 20 degrees cooler on a hot day.

Strengthening ties to climate resilience also provides an opportunity to ***train, educate and empower*** childcare providers and caretakers. Training and education should target all developmental ages and encourage family and community engagement through local campaigns and learning events. Municipalities and early childhood nature connection programs should also collaborate to ***enhance emergency preparedness*** by updating emergency plans so that they address smoke days, heat waves and power outages while ensuring that such plans are inclusive of infants, toddlers and children with disabilities.

TOOLS & RESOURCES

- [Early Childhood Nature Connection Toolkit](#), Children & Nature Network, National League of Cities (NLC), and KABOOM!
- [Tree Equity Score](#), American Forests
- [Climate Change & Early Childhood Resources](#), North American Association for Environmental Education
- [Heat Island Reduction Solutions](#), EPA
- [Designing Climate-Resilient Outdoor Spaces with Nature-Based Solutions](#), NLC
- [Smart Surfaces Policy Tracker](#), Smart Surfaces Coalition
- [Considerations for Leaders: Intersection of Early Childhood and Environmental Impacts](#), NLC
- [Early Childhood Disaster-Related Resources for Children and Families](#), U.S. Department of Health and Human Services
- [Connecting Early Childhood Development to Climate Change](#), FrameWorks Institute
- [Climate Action Playbook](#), Caretakers of Wonder
- [Resource Library](#), Center on the Developing Child at Harvard University
- [Building Child Care Resiliency in the Face of a Changing Climate](#), the National Association for the Education of Young Children & Low Income Investment Fund