

Nature-based Education for Planetary Health

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Prepared by the Commission on Education and Communication (CEC) of the International Union for the Conservation of Nature (IUCN)



Overview

As stated in the [IUCN's Position Paper UNFCCC COP28](#), IUCN encourages all stakeholders, including within the private sector and civil society, to do their utmost to effectively and ambitiously address the interlinked climate and biodiversity crises, and to support an equitable and just energy transition. This technical brief was prepared in November 2023 by experts of the [Commission on Education and Communication \(CEC\) of IUCN](#), to provide context and rationale for the **importance of climate and nature-based education in addressing the interlinked climate and biodiversity crises**.

Context and opportunity

The international community has acknowledged that tackling environmental challenges requires an interconnective and collaborative perspective - a systems thinking approach. [An IPBES and IPCC co-sponsored workshop report in 2021](#) explored how climate change drives biodiversity loss, and states that addressing these subjects in isolation leads to unsuccessful conservation strategies. **“Only by considering climate and biodiversity as parts of the same complex problem, which also include the actions and motivations and aspirations of people, can solutions be developed that avoid maladaptation and maximise the beneficial outcomes”** (p.5, IPBES & IPCC, 2021). Through this report, IPBES and IPCC highlighted the need to explore conservation strategies through a systems thinking approach, acknowledging the intrinsic linkages between our planet's cycles.

Governments, organisations, and individuals are increasingly aware of the **critical role education plays in the trajectory of the twin crises of climate change and biodiversity loss**. Article 6 of the UNFCCC and Article 12 of the Paris Agreement call on Parties to promote and facilitate climate change education, and at COP26 in Glasgow, world leaders launched a 10-year work programme on [Action for Climate Empowerment \(ACE\)](#). The historic [Kunming-Montreal Global Biodiversity Framework \(GBF\)](#) adopted in 2022 at CBD COP 15 acknowledges that our educational systems and approaches will be critical in bringing about the behavioural change needed for its effective implementation. **Section C states that “implementation of the framework requires transformative, innovative and transdisciplinary education, formal and informal, at all levels**, including science-policy interface studies and lifelong learning processes, recognizing diverse world views, values and knowledge systems of indigenous peoples and local communities”. Section K challenges Parties to enhance communication, education, and awareness on biodiversity to support uptake of the Framework. In addition to encouraging new partnerships and policies to support adaptive learning, Section K underscores the importance of “integrating transformative education on biodiversity into formal, non-formal and informal educational programmes, promoting curriculum on biodiversity conservation and sustainable use in educational institutions and promoting knowledge, attitudes, values, behaviours and lifestyles that are consistent with living in harmony with nature”. Target 16 highlights the opportunity of educational systems to inform sustainable consumption choices, and Target 21 calls on all stakeholders to strengthen education systems with the best available data and knowledge for effective and integrated management of biodiversity.

As education systems evolve to address the climate, water, and biodiversity crises, there is a complementary and growing recognition that **our connection to nature in the face of rapid urbanisation and environmental degradation needs to be restored**.

IUCN has long recognized the significance of this connection, presenting this position in [WCC-2012-Res-101-EN Child's right to connect with nature and to a healthy environment](#), which states that “connecting children to nature as part of their everyday lives in meaningful ways tends to be a precursor to their growing up as adults with passion and commitment to work actively in support of conservation of the environment and natural resources”. [WCC-2020-Res-062-EN Role of children and youth in nature conservation](#) also acknowledges **“the need for children and youth to be aware of environmental issues, to care about and understand them, and to take action”** and recognizes the **“central role that academic institutions, such as primary schools, secondary schools, colleges, universities and scientific facilities play in raising this awareness and engaging children and youth around environmental issues”**, encouraging Members to integrate environmental education into formal curricula and to “increase people's contact with nature and as a strategy to promote knowledge of biodiversity and the physical and mental health of city dwellers, particularly children and youth.” [WCC-2016-Res-084-EN Environmental education and how to naturalise the spaces in educational centres](#) urges Members to **promote curriculum development that brings learners as close as possible to natural environments, and to restore and create national settings as places for learning**.

We need to build bridges across cultures and geographies, using education to democratise nature conservation. This will mean working with formal education systems and civic institutions to ensure that the systemic connection between climate change, water extremes and biodiversity loss is made tangible in curricula, learning outcome requirements, pedagogy and andragogy. Simultaneously, we need to support greener school grounds, university campuses, training centres and infrastructure; incorporating co-learning and student leadership; building professional development and training strategies at all levels; urgently calling for political proactivity, legislation, and funding; and nurturing partnerships and synergies between various stakeholders.

In response to the climate crisis and other sustainability challenges, there is an urgent need to empower learners with knowledge, skills, values and attitudes to take informed decisions and responsible actions for environmental integrity. **Bringing nature into the centre of education and allowing learning through active exploration and discovery activates learners' creative capacities and sense of being part of, and not separate from, nature**. At a moment when our planetary boundaries are being crossed and planetary systems are changing, demonstrating less resilience (Stockholm Resilience Centre, 2023), it is imperative that education, at all levels, fosters planetary citizens who can think, visualise, and act in resonance with life.

Working Definitions of Nature-based Education (NbE) and Planetary Health

With leadership from the IUCN Commission on Education and Communication, global experts are **reimagining environmental education** and existing educational approaches. These are being expanded upon and re-envisioned **as an inclusive ecosystem of approaches to Nature-based Education (NbE)**.

Nature-based Education is an ecosystem of blended educational strategies encompassing [environmental education](#) (as first defined by the IUCN), [indigenous ways of knowing](#), climate and biodiversity education, [education for sustainable development](#), outdoor education and [experiential education](#), mindfulness, and socio-emotional learning, among others. Nature-based education expands upon and encompasses this Commission's past work on [Education for Conservation \(EfC\)](#). More than a one-way-fits-all, NbE aims to serve as an educational ecosystem encompassing various complementary initiatives that **bring nature to the core of learning**.

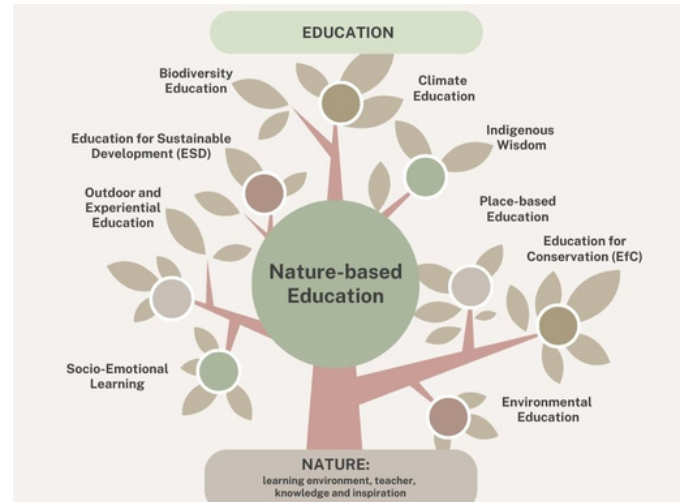
Nature-Based Education is an enabler that transforms educational practices into strategies that help individuals become aware of and understand the natural connections between significant challenges like climate change, food and water security, biodiversity loss, natural disasters, human well-being, and planetary health. **It is an educational approach towards Nature-based Solutions leading to and fostering a sense of interconnectedness with the natural world and an understanding of how human activities impact the environment.** It provides knowledge, skills, values, and attitudes to make informed decisions on pressing environmental and social issues while helping learners across fields and levels engage further in environmental protection efforts. It takes a systems perspective while encouraging students at all levels and in all areas to seek sustainable solutions and take responsible action. NbE nurtures a conservation ethic, as learners recognize that they are part of, not separate from, the natural world.

Nature-based Education is a holistic approach that integrates the living systems approach into all forms of education to inspire and re-establish a deep connection between humans and the rest of nature. Through nature-based learning, individuals learn about and from nature, including the environment, the climate and water systems, biodiversity, and humans as a key species on our planet. It can be incorporated in formal, non-formal, and informal education, training, and capacity building among others, and recognizes the importance of systems thinking, problem-solving learning, and cultural diversity. Place-based and project-based instructional approaches are a natural fit for this ecosystemic approach.

[The UN calls planetary health](#) “a new field, and one that needs ideas and solutions that span multiple sectors and disciplines to guide the creative stewardship of our planet to protect our own health”.

The widespread and growing references to planetary health defines it as “the achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems—political, economic, and social—that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity can flourish. Put simply, planetary health is the health of human civilization and the state of the natural systems on which it depends”.

Nature-Based Education (NbE) is an enabler that helps individuals understand planetary health. NbE makes tangible the ways in which climate change drives biodiversity loss.



NbE across fields and education levels

Nature-based Education can inform **formal, informal and non-formal education, at all levels and across geographies**. There is particular momentum and research around the benefits of NbE for early childhood care and development, and the benefits of NbE in primary and secondary schooling. Higher education systems around the world are also adopting NbE approaches, particularly expanding experiential, solution-based, and place-based learning. NbE can also be applied as a framework for approaching professional development, leadership training, and continuing education programs.

There is a window of opportunity to advance nature-based learning approaches in formal education systems around the world.

Research and [surveys by UNESCO](#) found that: 47% of national curricula of 100 countries surveyed made no reference to climate change. [Other UNESCO research](#) found that although 40% of teachers surveyed felt prepared to teach the cognitive dimensions of climate education, only 20% could explain well how to take action. As newly formed collaborations of education and environment leaders in 161 countries are preparing new ways to implement Education for Sustainable Development (ESD) following the [2021 World Conference on Sustainable Development in Berlin](#), there is a window of opportunity to advance an ecosystem of new educational approaches that place nature at the core of learning. Considering NbE encompasses and potentializes ESD and greening education initiatives as it nurtures learners' innate understanding of, and connection with, the natural world, **incorporating NbE into ESD, Climate Education, and Biodiversity Education strategies should become a priority of policymakers and educators**.

In informal and non-formal education settings, NbE has the potential to highlight nature's principles as frameworks for learning, leadership training, youth development, and other non-formal education programs.

Developing and implementing supportive policies and frameworks that ensure nature is at the core of formal, informal and non-formal education practices is necessary at a national education policy level and within curricula. Transforming our education system requires **adequate funding and support for planning and implementation**.

Emerging NbE Initiatives

Emerging initiatives are vital catalysts in the movement towards Nature-based Education. The Tbilisi Conference in 1977 was the first intergovernmental conference on environmental education. The Earth Summit 1992 in Rio de Janeiro led to the Education for Sustainable Development (ESD) conceptualization. The United Nations Conference on Sustainable Development 2012 highlighted governments' commitment to mainstreaming ESD. The UNESCO Global Action Program 2014 focused on promoting ESD actions at all levels and areas of education.

More recently, the Sustainable Development Goals (SDGs) positioned ESD as a critical tool in delivering on the 2030 Agenda.

The IPBES and IPCC report on climate change and biodiversity loss illustrates the need to join forces and tackle our environmental crises through systemic thinking and interconnected solutions. The [Oceans Plastics Charter](#), the [High Ambition Coalition for Nature and People](#), Abu Dhabi's ICE Principles, the [Global Partnership for Education](#), [IUCN's Commission on Education and Communication \(CEC\)](#), IUCN UK nature education strategies, [Greening School Grounds](#), [#NatureForAll](#), and several UN-type initiatives by UNESCO, UNFCCC, CBD, WEEC, and WCC are examples of seeking to bring nature into our education practices. Nature-based education approaches are supporting implementation of [Action for Climate Empowerment \(ACE\)](#) under the UNFCCC/Paris Agreement. Initiatives highlight the urgency of more integral and holistic education frameworks, the importance of greening school grounds and offering outdoor learning, the need for political proactivity, legislation, and funding, and the power of partnerships and alliances. **Political momentum is building for greener learning spaces.** For example in the United States, the [Living Schoolyards Act \(S-1538\)](#), introduced into the United States Senate by Senator Martin Heinrich (D-N.M.), would provide funding for schools across the country to design outdoor environments that strengthen local ecological systems.

Enablers of NbE

The CEC and its expert contributors have identified **six key enablers of Nature-based Education**: enhanced education frameworks, greener learning spaces, prepared educators, political commitment, partnerships, and connection to nature.



[Greening School Grounds and Outdoor Learning](#) is a project of the Children & Nature Network, in partnership with Salzburg Global Seminar, the International School Grounds Alliance, IUCN Commission on Communication and Education (CEC), #NatureForAll, National League of Cities Institute for Youth, Education and Families. The initiative engages global leaders to identify and disseminate successful approaches to school ground greening and outdoor learning from around the world.



Benefits of NbE

Nature-based Education has proven benefits for learning outcomes, human health, and planetary health ([C&NN](#)). Formal education systems that include nature-based education also benefit from increased graduation rates and improved academic outcomes. It is an approach that bridges climate and biodiversity education as well as a living systems and relational approach to learning with nature at the core.

[Connecting with Nature to Care for Ourselves and the Earth](#), a report published by IUCN's initiative #NatureForAll, illustrates how connecting with nature creates meaningful and positive experiences that develop a connection with and love for nature that, in turn, results in people caring and taking action for the Earth. Positive direct experiences outdoors and role models of care for nature during childhood are especially powerful ways to lead individuals and adults to take actions that benefit environmental well-being.

A review of 32 studies from multiple countries identified 98 outcomes of nature play and the most frequently reported outcomes related to connection and care for nature, self-confidence, and self-regulation (Ernst et al., 2021). **"We do not harm what we love. Creating opportunities for people to fall in love with the land imprints them with a natural desire to protect what they hold as special and meaningful, leading to an ethos of reciprocity and sustainability that can be enacted in various ways as forms of ecological regeneration and restoration"** (p.49, UNESCO, 2022).

Recommendations

1. **Advocate for the recognition of education as a conservation essential and as a strategic tool** to achieve conservation goals.
2. **Ensure that climate and biodiversity education are not treated as separate from each other**; understanding these interconnections is fundamental to addressing climate change and biodiversity loss.
3. **Promote and invest in nature-based education** as an integral and multi-beneficial way to address climate change, biodiversity loss, and social inequities. Bring nature to the centre of learning and introduce a living systems approach to education.
4. **Integrate nature-based education into formal, non-formal and informal learning** to foster environmental awareness and stewardship, leading to positive action among children and adults. Nature-based education helps develop critical thinking, creativity, and problem-solving skills, as well as enhances well-being and social cohesion fundamental for cultural mitigation, adaptation and mindset shifts facing climate change.
5. **Strengthen the scientific evidence and policy frameworks for nature-based education.** More research, data, and guidance are needed to demonstrate the effectiveness of nature-based education and nature-based solutions, and to inform decision-making and governance at all levels.
6. **Enhance collaboration and coordination among stakeholders and sectors involved in nature-based education and nature-based solutions.** Nature-based education requires cross-sectoral and multi-level approaches that foster dialogue, learning, and innovation among diverse actors to help shift education. Stronger commitment from governments and other stakeholders is needed to support the further scaling up of education and learning for sustainable development.

The views expressed in this publication do not necessarily reflect those of IUCN or other participating organisations.

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