



Youth4Biodiversity

Youth4Biodiversity, part of the Planet4B Horizon project, explores how a **learning community of urban youth** takes ownership of **biodiversity prioritization and conservation efforts**.

This **package intervention** provided an **immersive learning experience** in a natural reserve in Germany, using **experiential learning** to strengthen **ecological empathy** and foster **long-term engagement in sustainability**.

Where?

A secluded site in the heart of the **Leutratal Nature Reserve**, in Thuringia, Germany, surrounded by nature and distanced from urban conveniences.

At the heart of the reserve stands the **Leutratal Nature Adventure House**, managed by NAJU Thuringia



The Adventure House not only offers a model for **biodiversity preservation** but also embodies **community-driven conservation in action**.

It is a **living classroom**, making the location ideal for a **transformative learning experience**.



Who?

10 young adults residing across Germany (ages 18–30), and from **10 different nationalities**, promoting diversity and gender balance.

Most participants lived in **urban or suburban areas**, and in terms of education, the majority held a bachelor's or master's degree.

Planned, organized and runned by **three elements of the learning community**. **Taking ownership** over the project and **being active** in sustainability efforts.





Theories & Frameworks

This is a **transformative learning framework**, in which meaningful experiences in nature can foster pro-environmental values and behaviors that may be absent in urban contexts. It answers to:

- **GreenComp** (European Commission): the European sustainability competence framework, posits lifelong learning processes, equipping young people with systems-thinking and collective-action competences.

- **Nature-Based Solutions** (European Commission): Which highlights that effective conservation requires not only ecological intervention but also **social interventions with impact in community values, social cohesion, and personal well-being**.
- Theoretical frameworks supporting the design of the intervention: **Three Spheres of Transformation** (O'Brien and Sygna, 2013); **Value-Belief-Norm Theory** (Stern et al., 1999); and **Attitude-Behavior-Context Theory** (Guagnano et al., 1995).
- **Experiential learning**: A process where participants learn by doing, engaging in hands-on activities and reflecting on their experiences
- **Outdoor education**: Learning that takes place in nature, using direct interaction with the environment to foster ecological awareness.



- **Non-formal education**: A structured yet flexible learning approach outside traditional classrooms, focusing on participatory, learner-centered methods. This approach highlights discussions, peer-led activities, and intercultural exchanges.

How?

The plan was informed by previous research from Planet4B's learning community, where **a set of interventions and result indicators** had already been brainstormed and decided previously as a result of **multiple workshops** on the topic of interventions for biodiversity awareness. The result was a **package intervention** that would include:

- **Outdoor cinema**
- **Mindfulness**
- **Hiking**



Program

Day 1: Arrival – Setting the stage

- **Journey to the natural reserve** – The experience began with a hike to the house. Upon arrival, participants collectively organized their living space, fostering teamwork.
- **Community guidelines** – After introducing learning goals, participants collaboratively established shared living agreements, encouraging respectful cohabitation and collective accountability.
- **Team-building** – Through cooperative challenges, participants built trust and familiarity.
- **Collective sustainable living** – Participants shared responsibilities over preparing dinner. Boiling water for drinking, became a collaborative effort, requiring coordination and sustainable consumption habits.

Day 2: Arrival – Connection with nature

- **Hike** – The group navigated the **forest trails** and walked through a **former highway, now gradually reclaimed by nature**. Along the way, they paused to observe natural elements, reflecting on the **balance of ecosystems**. The hike culminated in a **picnic**, where participants engaged in a **silent reflection exercise**, tuning into the subtle sounds of the forest and embracing stillness. Participants then ventured into a nearby **ice-cold creek**, providing a moment of **sensory immersion**, reinforcing the importance of direct, embodied experiences in nature.



- **Nature-based exploration** – Next, an interactive **scavenger hunt-style environmental challenge**. Participants, in teams, set out to complete **nature-inspired tasks**, such as identifying traces of human presence, capturing images of vibrant flowers, and staging role-playing sketches among the trees. This activity fostered creativity and engagement with the natural surroundings.



- **Mindfulness** – Under a large tree, participants were guided through a mindfulness session incorporating **progressive muscular relaxation** and **grounding exercises**. The session encouraged participants to heighten their awareness of nature's presence, reflecting on how their **physical and mental states** shifted through deep listening, breathwork, and full-body relaxation in the forest setting.
- **Outdoor cinema** – After sharing responsibilities and engaging in communal dinner, an outdoor cinema setup emerged to project a documentary “Virunga” on mountain gorillas in Congo, exploring the **intersection of biodiversity conservation, armed conflict, and human-wildlife coexistence**. The film provoked a powerful discussion, linking distant conservation struggles with local and global biodiversity concerns. The day closed with participants **stargazing** and reflecting on the urgency of **local and global action**, and the sense of **shared responsibility over sustainability efforts**.



Day 3: Departure – Carrying sustainability forward

- **Restoring the space** – Together, participants cleaned the house and outdoor space, ensuring **the area was left as undisturbed as possible**, honoring the principle of **leaving no trace**.
- **Hiking back to civilization** – With their belongings packed and trash carefully sorted into separated **recycling bags**, participants hiked out of the reserve, carrying not just their backpacks but a renewed sense of **ecological responsibility**.

- **A challenge to urban sustainability** – Upon reaching the nearby town, participants encountered a **complete absence of recycling bins**. As they moved from the town to the bus station and later the train station, they **searched for a way to dispose of their waste sustainably**, yet found no options available. This stark contrast between their immersive sustainability experience in nature and the **lack of basic recycling infrastructure in urban spaces** prompted critical reflection on **systemic environmental gaps**. The group made the collective decision to **carry the bags all the way back to the original point** – Erfurt – ensuring that the waste was properly disposed. This simple but powerful action embodied the principles of **accountability, environmental integrity**, and sustained **commitment to conservation** beyond the experience itself.

- **Final reflections** – As participants parted ways, their reflections extended beyond what they had learned—they now questioned how they could **apply these lessons in their daily lives and communities**.



Indicators for evaluation

General evaluation: We used a pre and post survey collecting sociodemographic information; measuring general attitudes and engagement in biodiversity conservation; and using the Connectedness to Nature Scale (Mayer & Frantz, 2004).

Hike: After the hike, participants completed the Extended Inclusion of Nature in Self Scale (Martin & Czellar, 2016).

Mindfulness: After the session, a focus group.

Outdoor movie: pre and post survey





Impact & Results:

Hike

The hike fostered a **moderate-to-high sense of ecological integration**, with an average score of 4.89/7, indicating a **positive connection to nature**. These results reinforce the **effectiveness of outdoor experiential methods** in enhancing environmental awareness and biodiversity engagement.

Mindfulness

The session had profound **physical and emotional impacts**, fostering deep calm and emotional release. The natural setting enhanced the experience, shifting perceptions **from discomfort to peaceful coexistence with nature**. Participants expressed a strong desire for future nature-based mindfulness, highlighting its role in **ecological empathy and well-being**.

Outdoor cinema

The session significantly increased participants' awareness of biodiversity conservation. **100% of participants acknowledged the importance of conservation efforts**, highlighting biodiversity's global significance. It reshaped perceptions of conservation threats, with **corporate influence emerging as a major concern**. Post-film, 50% rated individual actions as highly impactful, demonstrating **increased personal responsibility**. 83.3% expressed **willingness to join local conservation efforts**, showcasing the film's power in fostering **awareness, engagement, and action**.



Package intervention

The experience significantly **enhanced participants' biodiversity knowledge, conservation commitment, and ecological connection**. Self-assessed **knowledge of biodiversity increased**, while more participants rated conservation as "Crucial" post-test. **Willingness to engage in conservation actions** broadened beyond recycling and waste reduction to **active participation in biodiversity programs**.

Participants reported an **increased sense of oneness with nature**, a stronger **feeling of belonging** to the natural world, and a greater **appreciation for the intelligence of other organisms**. Disconnection from nature decreased, while **kinship with animals and plants**, awareness of **ecological cycles**, and recognition of **shared life forces** strengthened.

The intervention shifted perceptions of nature's hierarchy, with participants moving towards a **less anthropocentric view**.

The results suggest **that immersive, nature-based experiences foster ecological empathy, engagement, and a deeper sense of environmental responsibility**.



Key Takeaways

The power of outdoor immersion:

The natural reserve setting played a crucial role in shaping participants' attitudes, behaviors, and values toward biodiversity. Immersive experiences enable participants to connect emotionally and intellectually with conservation challenges.

Recommendation: Future biodiversity education programs should integrate multi-sensory outdoor experiences to strengthen ecological awareness and emotional attachment to nature.

Community living as a tool:

Adapting to minimalistic shared living conditions challenged participants to collaborate, problem-solve, and develop resourcefulness, fostering a stronger connection between sustainability and daily life and reinforcing the importance of collective action.

Recommendation: Sustainable education programs should emphasize community-driven, hands-on sustainability practices to reinforce learning.

Context Matters:

By placing participants in a structured, immersive setting, the program facilitated pro-environmental behaviors that would be harder to adopt in urban settings.

Recommendation: Environments that make sustainable actions necessary—rather than optional—can help bridge the gap between knowledge and real-world behavior.

Ownership & collective responsibility:

Giving participants ownership over their experience—from setting community norms to leading tasks and reflection circles—strengthened their sense of agency. This contributed to sustained motivation to take action beyond the weekend.

Recommendation: Environmental education programs should empower youth to take ownership of learning processes, fostering long-term commitment to sustainability.

The power of package interventions:

Participants connected with nature practically, socially, and emotionally, reinforcing sustainability as a lived experience rather than abstract knowledge. Immersing participants in nature heightens ecological empathy and promotes lasting pro-environmental behaviors.

Recommendation: Future environmental education programs should prioritize immersive, multi-sensory experiences that combine experiential learning and nature-based interventions.



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Recommendations

Scalability & Replication:

Future initiatives should focus on replicating nature-based interventions in different ecosystems, ensuring accessibility for youth from urban and rural backgrounds alike.

Educational reform:

Schools and youth programs should incorporate outdoor experiential learning into formal education to deepen ecological empathy and bridge the gap between theoretical knowledge and real-world conservation.

Policy integration:

Nature-based education should be embedded in youth policy frameworks and environmental strategies at local, national, and EU levels. Strengthening the connection between youth work, biodiversity action, and public policy will enable young people to engage in conservation efforts as active stakeholders.

Increased funding:

More investment in immersive, nature-based education is needed to expand access, enhance program design, and support long-term engagement. Funding opportunities, should prioritize projects that foster youth-led biodiversity action.

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The power of immersive interventions and experiential learning