THE UNIVERSITY of EDINBURGH

PRIORITISING *DÙTHCHAS*

HOW MIGHT WE ENSURE THAT BIODIVERSITY INTERVENTIONS ARE EFFECTIVE AND EQUITABLE FOR ALL, BOTH NOW AND IN THE FUTURE?

GROUP A-12

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INTRODUCTION

Presented with this strategic challenge by the University of Edinburgh's Department for Social Responsibility and Sustainability (SRS), our group explored how biodiversity interventions can be designed to be socially impactful as well as environmentally.

The realisation that biodiversity interventions frequently fail to benefit marginalised or vulnerable communities influenced our research. Prioritising Dùthchas (Dabiri 2021) therefore aims to reach wide participation and enhance biodiversity through fostering connection between people and nature. We were inspired by the word Dùthchas– "an ancient Scottish Gaelic ecological principle of interconnectedness between people, land and non-human beings." (Dabiri 2021). This emphasises the project's core value: urging people to examine their responsibility in looking after their community and land.

Our findings are presented in this report along with two concrete suggestions that prioritise intersectional, tangible approaches to biodiversity planning in the future.

BACKGROUND

To answer the challenge question, we chose to prioritise a creative response, to inspire connection and education between people and biodiversity. Our research included analysing the SRS' existing biodiversity interventions, an on-site visit, attending a community meeting, and reviewing relevant case studies and initiatives. During our research we realised that for any "biodiversity intervention" to be "effective and equitable", community engagement would have to be at the centre of the initiative.

Our initial ideas focused on enhancing biodiversity measures like introducing wetlands or joining forestry initiatives. However, after we received feedback and re-examined the challenge question, it emphasised how psychological and physical disconnection from nature can lead to its devaluation (Gladys Barragan-Jason et al. 2022). Shifting our focus, we began thinking about initiatives that would have an end goal of restoring nature through restoring people's emotional connection to it.

This reflection led us to draw from our own creative practices. Many of us already connect with nature through drawing, painting, and storytelling—using nature both as the subject and location. That shared experience inspired the idea of an Artist-in-Residence (AiR): someone who could facilitate engaging, educational participatory workshops that would help foster this connection for others.

We had also found there was an absence of presence on campus about the Forest and Peatland Programme's (FPP) (The University of Edinburgh 2024) on-site developments and information on the land's history and its biodiversity. This is what inspired developing the second aspect of our pitch, the showcase space. The space would aim to showcase the AiR work as well as hold educational and engaging installations centring around enhancing biodiversity.

THE PITCH

We propose a dual-approach strategy that blends education, community engagement, and creative practice. By pairing an AiR program and Exhibition Space, our vision was to initiate long-term ecological awareness rooted in local heritage, inclusive participation, and collective action.

Artist in Residence

We want to propose an AiR programme to be implemented by the SRS. The AiR would be expected to lead and deliver on-site artistic workshops to a wide audience: school pupils, students, university staff as well as local residents from both Edinburgh and the surrounding site communities. To help inspire the participants' emotional connection to nature, the artistic workshops would raise the participants' awareness in prioritising, identifying and enhancing biodiversity. The artistic activities the AiR might offer could be drawing, painting, sculpture making, creative writing, performance, experimenting with natural sound and photography. Each workshop would be curated and facilitated by the artist.

Exhibition Space

In partnership with the team from the Edinburgh Futures Institute (EFI), we suggest creating a semi-permanent Exhibition Space on the University of Edinburgh campus to go along with the AiR programme. This space will highlight local biodiversity, historical land usage, on-site developments, and the artist's and the community's evolving work.

The area will hold immersive technologies, such as augmented and virtual reality (AR/VR), to communicate multi-layered tales of geography, nature, and culture, drawing inspiration from museum-based education. Digital tools make learning more dynamic and inclusive while also increasing access.

RELEVANCE

Biodiversity loss is a globally urgent issue, tied closely to accelerating climate change, habitat destruction, and the erosion of cultural and ecological knowledge. According to a recent report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), over one million species are currently at risk of extinction due to human activity. Yet these losses are not only biological—they are also cultural, social, and emotional. As biodiversity declines, human connection to land, heritage, and place erode.

This project responds directly to those overlapping crises of ecological loss and social disconnection. Our proposal was developed in part through insights gathered at a recent community meeting in Penicuik, held specifically to gather community feedback on the Rullion Green Wood site as part of the FPP. The meeting brought together local stakeholders, Penicuik residents, and programme organisers to discuss priorities, concerns, and hopes for the site's future. One of the FPP organisers shared:

"Yes, it's a carbon project. Yes, it's a biodiversity project, but it's also to get people out on site learning, and that's just another benefit of doing it, you know."

This emphasis on learning through place strongly aligns with our proposal for an artist-in-residence programme and semi-permanent Exhibition Space. As she noted,

"I remember my first day on the job, a student came up to me and she said, 'How can I got to the Peatlands? I've never been to the Peatlands.' And she was studying natural habitats. I mean, there's nothing like learning on the site."

A key theme in the town meeting feedback was the widespread desire for place-based education, not only for university students but also for the broader community, including schoolchildren, older adults, and those with limited access to natural spaces (see Figure 1). Participants requested 'education on habitat management,' 'climate education,' and 'internship opportunities,' all of which informed our project's focus on creativity, inclusion, and connection to place.

Relevance

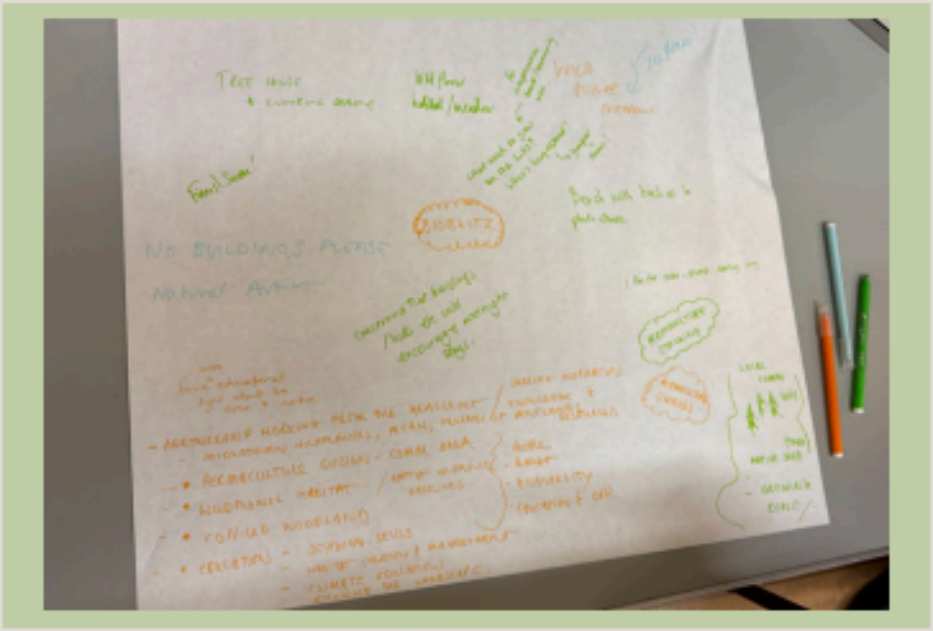


Figure 1. Community feedback on brainstorm sheets.
Image by the author.

In reviewing the University's Biodiversity Plan (Anon. 2024), we found that many current strategies—while ecologically important—lack cultural relevance and local connection. These strategies often feel surface-level, disconnected from the lived experiences of those inhabiting these landscapes. To be truly effective and equitable, biodiversity initiatives must integrate local knowledge, values, and participation—not just ecological science. Our proposal addresses this gap by incorporating creative engagement, place-based learning, and cultural storytelling into biodiversity efforts.

Concerns about ecological and cultural harm from new developments were also raised at the meeting. Several participants expressed resistance to new buildings on peatland sites (see Figure 1). As the FPP organiser affirmed:

"We don't want to increase our carbon by building a new building, right, but there's existing old buildings, and we want to develop those into community centers."

This concern is one our group takes seriously. To respect the values and concerns of the local community, our proposed Exhibition Space would initially be hosted within the university. Any future site-based expansion would focus on repurposing existing structures, not building anew. This ensures we avoid contributing to environmental degradation while respecting the deep community care for the land.

Finally, community enthusiasm for the arts as a tool for engagement came through in small but meaningful ways. One site's neighbour, we were told, is a local artist who has expressed interest in having a community-facing creative project. This simple observation reinforces the potential of our artist-in-residence programme—a way to make biodiversity and stewardship not just visible, but shared and celebrated through art.

Relevance

This proposal responds directly to the challenge question, "How might we ensure that biodiversity interventions are effective and equitable for all, both now and in the future?" by grounding biodiversity awareness in accessibility, education, and lived experience. Through participatory programming, the intervention becomes not only informative, but emotionally and culturally resonant—a key condition for long-term engagement and collective stewardship. Equitable interventions must be shaped with communities, not merely for them, and our pitch revolves around that principle.

The artist-in-residence programme and the community-facing showcase are designed to be co-creative and collaborative, turning locals from passive observers into active participants and storytellers. This approach also avoids the ecological harm of new infrastructure, favouring low-carbon, education-focused initiatives with lasting impact. In doing so, it supports biodiversity without reproducing environmental or social inequities. Students, too, benefit from this model—gaining access to place-based learning opportunities. This multiscale strategy ensures that the intervention is not only locally meaningful, but scalable and sustainable for future generations.

ASPECT 1: ARTIST IN RESIDENCE

One of the core ideas we're proposing is a year-long AiR programme hosted on FPP land—Rullion Green Wood, Barvick Burn Wood, and Drumbrae. The artist would be based on-site, running creative workshops with local communities and developing their own responses to the land over time. The aim isn't to produce polished art objects; it's about using art as a way to connect people with nature and to foster curiosity, care, and emotional investment in protecting biodiversity (Kester 2011).

Outdoor art-based activities have been shown to heighten ecological awareness by encouraging participants to engage creatively and emotionally with the environment (Renowden et al. 2022). The workshops will promote awareness by inviting people to explore their surroundings, collect natural materials like leaves or twigs, and reflect on the environmental and cultural history of the land through creative making.

A key inspiration is the Living Pavilion at the University of Melbourne, a temporary outdoor space that uses creative practices to communicate Indigenous knowledge and ecological science (Kevey 2024). One activity involved composing music using recorded frog calls and found objects—illustrating how artistic engagement can foster understanding and joy in nature.

Similarly, our workshops might include sculpture making from foraged twigs, soundscapes made from birdsong and breath (White et al. 2018), or stories about favourite trees—small acts of noticing that help build bonds between people and place (Bungay and Vella-Burrows 2013). The artworks created could be displayed either on-site or in a dedicated Exhibition Space, integrating artistic expression with the physical and cultural landscape. The process is as important as the outcome: these sessions invite others to participate and deepen public interest in biodiversity.

Importantly, workshops would be open and welcoming to all—schoolchildren, older adults, students, and community members who might not usually attend events like this. We'd offer sessions with varied sensory input and activity levels: some quiet and reflective, others hands-on and energetic. From the outset, we would plan for access needs, including transport options, rest stops, and sensory-friendly formats, to ensure meaningful inclusion (Curtis 2009).

This approach is supported by participatory ArtScience research that combines artistic methods like drawing and sculpting with ecological field study (Renowden et al. 2022). In these models, participants engage in sensory observation, storytelling, and collaborative creation using natural materials and recycled media. Such hands-on, multisensory methods promote an embodied understanding of ecological systems and stronger emotional ties to place (Thomson and Chatterjee 2016).

Working with children holds particular long-term value. Research shows that early experiences with nature—especially those rooted in joy, wonder, and creativity—can shape how people relate to the environment for life (Wells and Lekies 2006). By creating these early emotional connections, we support a future generation more likely to care deeply about biodiversity (Wonowidjoyo 2022).

The programme also draws on Arts-Based Environmental Education (ABEE), which integrates art-making with environmental learning in natural settings. ABEE emphasises experiential, reflective, and emotional ways of learning that encourage participants to process and express their environmental experiences. This often begins with personal perception and evolves into shared visual expressions and insights, reinforcing both individual and collective responsibility for nature (Wonowidjoyo 2022).

One of the most exciting aspects of the residency is the way it allows multiple perspectives to emerge. Younger participants might view nature as magical and fun; older people might write poems about a changing landscape or share memories of lost places (Curtis 2009). These personal, poetic, and playful contributions would feed into the artist's final body of work—installed outdoors or in the exhibition hub—and together form a collective portrait of the land. It's a way to help others see biodiversity not just as a concept, but as something lived, felt, and worth protecting.

ASPECT 2: EXHIBITION SPACE

Our proposal includes the creation of a semi-permanent Exhibition Space housed within the EFI, serving as a central hub to communicate the work being done through the FPP. This showcase space will provide an accessible, interdisciplinary environment where university students, staff, and the broader public can engage with the ecological, cultural, and historical richness of the FPP sites.

A key aspect of the exhibition will be its focus on educational and immersive experiences. Museums and cultural centres are powerful spaces for bridging the gap between theoretical knowledge and real-world engagement. Building on this concept, we aim to create a semi-permanent Exhibition Space and educational hub that serves both the wider community in Edinburgh and locations with existing buildings, such as Barvick Burn Wood. This initiative will create an inclusive space for learning, collaboration, and cultural exchange, ensuring that biodiversity and heritage remain relevant and accessible to all.

The exhibition will:

- **Make biodiversity visible:** Through digital displays and physical signage, the space will share regular updates on biodiversity metrics, habitat restoration efforts, and site developments.
- **Celebrate place and heritage:** Storytelling elements will highlight the cultural and historical narratives connected to the land.
- **Feature creative contributions:** Installations, artwork, and media from the artist-in-residence programme will be a key part of the exhibition. These works will bring lived experience and emotion into biodiversity discourse, encouraging deeper connection and reflection.
- **Offer immersive experiences:** VR and AR tools will allow visitors to explore the sites remotely, deepening their spatial and emotional understanding of landscapes that are difficult to visit. As Nguyen et al. highlight, Information and Communication Technology (ICT), such as AR and VR, expands accessibility by creating dynamic, digital experiences (Nam and Thanh 2024). Virtual reconstructions, interactive exhibits, and digital archives can engage diverse audiences while preserving and interpreting heritage in innovative ways.
- **Create space for co-creation:** The exhibition will invite ongoing interaction through workshops, student-led installations, and community storytelling events. This participatory approach recognises biodiversity not only as a scientific concern but as a social and cultural one.

Reference Aesthetic & Layout

In conceptualising this Exhibition Space, we've drawn inspiration from leading cultural centres and museums that emphasise immersive, technology-driven learning environments. Below are images from a few spaces whose aesthetics, layouts, and use of technology we take inspiration from:

- **Thingvellir Visitor Centre, Iceland:** This space utilises VR, AR, touch screens, and storyboard halls (see Figure 2 and Figure 3) that allow visitors to walk through a gallery of images and history. We appreciate how Thingvellir integrates these elements and technologies to present information in an easily consumable and engaging way, making complex content more accessible. The experience offers an interactive and multi-sensory approach to storytelling, which is something we aim to replicate in our exhibition by allowing users to interact with digital displays and experience the land in innovative ways.

- **Window on Wild Lindisfarne, England:** This small architecturally sensitive building blends seamlessly, with the surrounding historical structures, making it a perfect example of a space that doesn't disturb local heritage but adds educational value (see Figure 4). The minimalist structure features a small entrance, a narrative hallway that teaches about the site's history, and a room with a large glass window that frames views of the surrounding land (see Figure 5). Inside there are interactive elements such as animal footprints in the floor for children and species identification pictures to help visitors recognise endemic wildlife. This approach is highly applicable to the Barvick Burn Wood site, as it is also a small, sensitive location where the Exhibition Space should fit harmoniously with the environment while providing an engaging and accessible learning experience.

- **Dynamic Earth, Edinburgh:** Known for its use of AR, VR, projection mapping, and short films, Dynamic Earth excels at engaging visitors with highly interactive and educational experiences (see Figure 6). The space is fun and dynamic, especially for younger audiences, yet it tackles important global issues like climate change and biodiversity. We admire Dynamic Earth's commitment to making complex topics both fun and deeply informative, and we plan to incorporate similar immersive, hands-on experiences that will engage all age groups and deepen their understanding of ecological topics and the importance of preserving biodiversity.

Figure 2. Exhibition layout concept inspired by Thingvellir Visitor Centre, Iceland. (Thingvellir National Park 2025)

Figure 3. Exhibition layout concept inspired by Thingvellir Visitor Centre, Iceland. (Thingvellir National Park 2025)

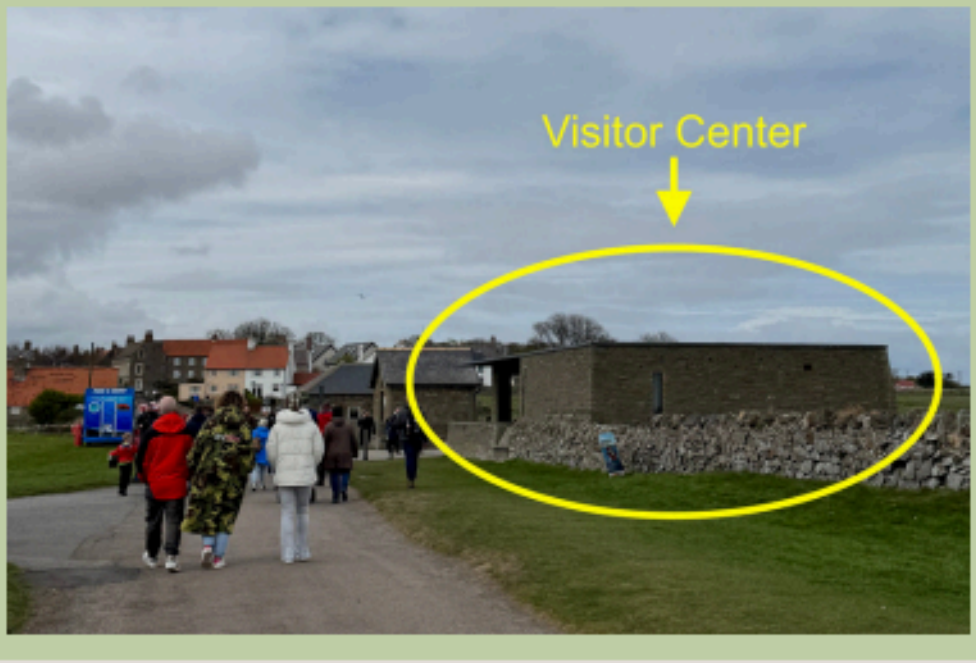


Figure 4. Exhibition layout concept inspired by Window on Wild Lindisfarne, England. (Chiddo n.d.)
Image by the author.

Figure 5. Exhibition layout concept inspired by Window on Wild Lindisfarne, England. (TellTale 2013)

Figure 6. Exhibition layout concept inspired by Dynamic Earth, Scotland. (Anon. 2025)

These examples will influence the design and layout of the Exhibition Space at EFI and potential cultural space on the Barvick Burn Wood site. For instance, the small, interactive and aesthetically fitting architecture of Window on Wild Lindisfarne aligns with our vision for an approachable, non-intrusive Exhibition Space. Meanwhile the advanced technology of Thingvellir and Dynamic Earth will help create an immersive, digitally engaging experience that encourages learning and exploration.

The following rendering showcases our vision for the Exhibition Space within the EFI (see Figure 7). This conceptual design reflects our aim to create an immersive, interactive, and accessible environment that bridges the gap between digital and physical realms.

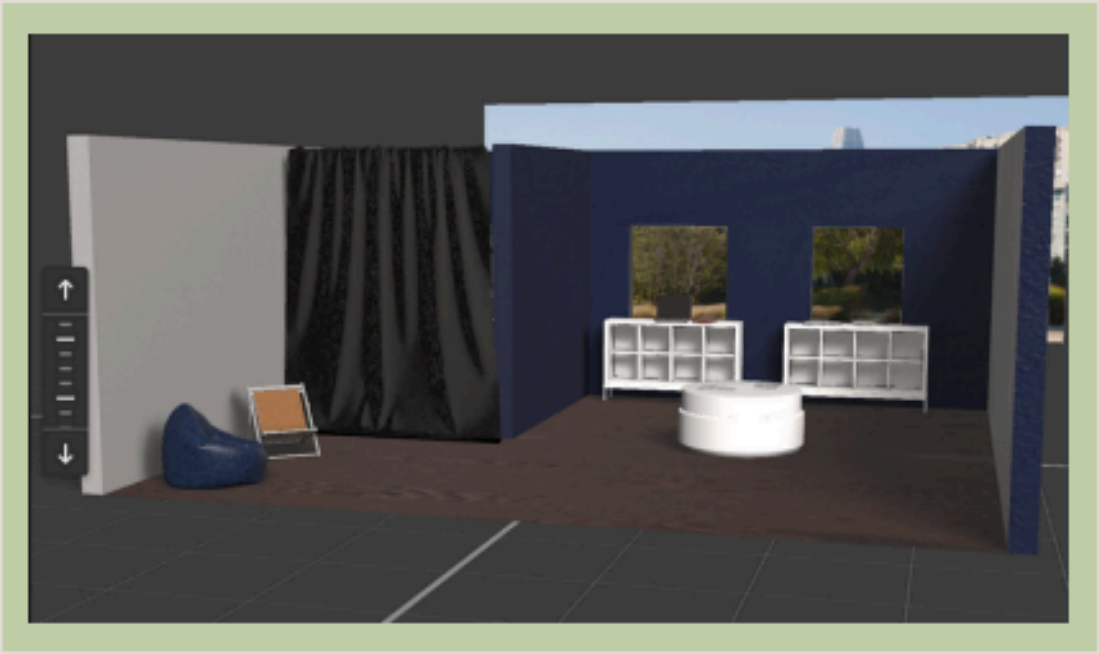


Figure 7. Rendered image of EFI Exhibition Space.
Image by the author.

Internship and Educational Potential

The space will also function as a learning site. Students studying curation, heritage, digital media, and sustainability will be able to contribute through internships and academic modules. This provides meaningful opportunities for interdisciplinary, practice-based learning while building capacity for long-term engagement with ecological issues. Evidence from cultural sustainability research supports the idea that student involvement in community-driven projects can enhance ecological awareness and foster long-term stewardship (Kester 2011).

Looking Ahead: The Possibility of a Site-Based Cultural Center

While the exhibition will initially be based at EFI, we also wish to acknowledge a future goal: establishing a community-led cultural space at one of the existing buildings on the Barvick Burn Wood site. This would not involve any new construction, in keeping with community concerns about ecological impact and carbon emissions. Instead, an existing structure could be repurposed to host a smaller satellite version of the exhibition—offering a localized space for learning, storytelling and intergenerational exchange.

A physical presence at Barvick Burn Wood would allow for:

- **Local access and ownership** of the stories and practices tied to the land.
- **Employment and involvement** of community members in curatorial and educational roles.
- **Place-based learning** for students in disciplines like archaeology, environmental science, and art.

This future-facing vision aligns with global scholarship emphasising the importance of decentralised, culturally grounded centres for ecological heritage preservation. When cultural institutions are rooted in the communities they represent, they are more likely to support resilience, inclusion, and place-based knowledge systems.

Ultimately, the showcase space—beginning at the university and hopefully expanding on site—serves as a bridge between science, art and community, making biodiversity not only seen but felt. It transforms passive awareness into active connection, inviting all stakeholders to become co-stewards of these critical landscapes.

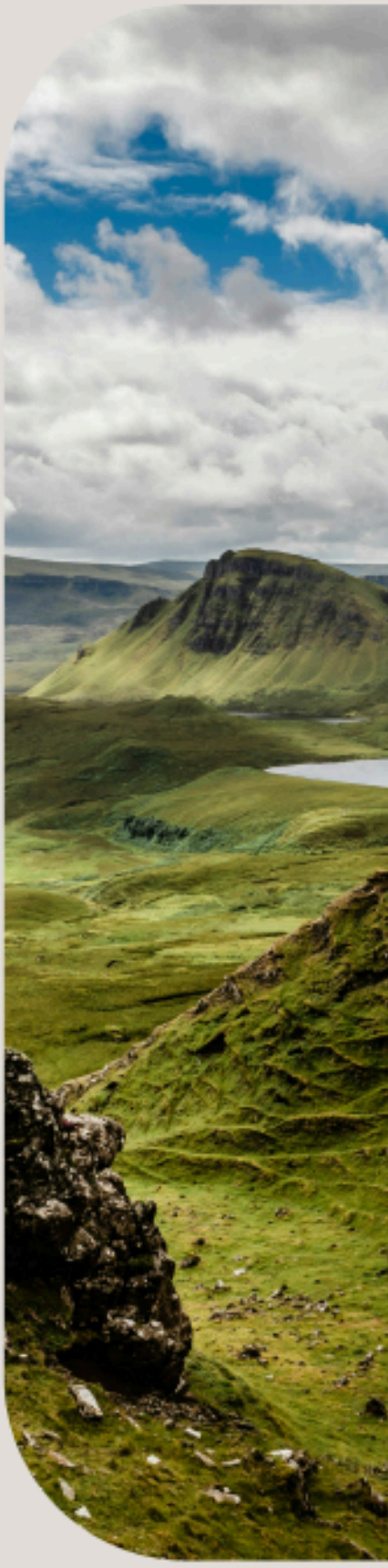
CONCLUSION

To ensure biodiversity interventions are effective and equitable for all, now and in the future, they must be rooted in connection: to the land, culture, and community. We propose a dual approach that places creative engagement and accessibility at its core, through an AiR programme and an Exhibition Space.

Together, these interventions move beyond surface-level conservation. They invite participation, emotional connection, and imagination into biodiversity work, fostering a sense of care and responsibility that's essential for longevity. The AiR facilitates hands-on, inclusive workshops that help people build personal, meaningful relationships with nature. The Exhibition Space reinforces this by making biodiversity and heritage visible, interactive, and relevant to daily life.

By prioritising Dùthchas, the Scottish Gaelic principle of interconnection between people, land, and life, we're centring equity and sustainability not as add-ons, but as starting points. Our approach avoids ecological harm by repurposing existing infrastructure, while amplifying community voices and supporting place-based learning for students and locals alike.

Ultimately, this proposal reframes biodiversity as something shared and lived, not distant or abstract. And that, we believe, is the foundations needed in order to make change.



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