

Nature-based Integration: Connecting Communities with/in Nature (2022-24)

Outputs, reflections, and recommendations

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Comhairle nan Eilean Siar
Ag Obair Còmhla Airson nan Eilean

Executive Summary

Nature-based integration is an innovative concept that leverages the restorative and inclusive potential of natural environments—parks, rivers, woodlands—to facilitate the process of social integration of migrants and new arrivals. By fostering connections through community bonding and resilience-building activities, nature-based integration seeks to enhance migrants' relationships with their new environments.

This report synthesises the empirical research and data collected as part of the Nuffield and British-Academy-funded project 'Nature-based integration: connecting people with/in nature'. The project was aimed at investigating how natural settings can be harnessed to cultivate inclusive, cohesive communities. Our approach to exploring nature-based integration engaged with both and long-standing community members and recognised the vital role that natural spaces play in promoting community cohesion and resilience.

The project was rooted in the urgent need for effective, inclusive integration strategies, a need made more acute by socio-political tensions, the impacts of the COVID-19 pandemic, and deepening inequalities. Traditional integration policies often neglect the potential of natural environments. This study addresses this oversight by linking robust empirical findings with existing research to explain the role of natural settings in fostering inclusive communities.

Project Methods

The methodology was distinctly community-centric, directly engaging with local communities and authorities from our three case studies (i.e. London Borough of Haringey, Blackburn with Darwen and Isle of Lewis) through innovative participatory methods. The study used a combination of spatio-temporal, aesthetic, reflexive, and conceptual methodological approaches to collect and analyse data:

- *Spatio-temporal methods* included surveys and participatory mapping to understand the geographical and temporal dimensions of nature-based integration.
- *Aesthetic methods* were used to capture the sensory and emotional responses of participants to natural settings, involving artistic expressions and workshops.
- *Reflexive methods* involved continuous reflection on the research processes and outcomes, facilitating adaptive learning and insights.
- *Conceptual methods* helped in framing nature-based integration within broader theoretical and policy contexts.

Key Findings

Key findings from the project include:

Social Connections and Nature Engagement

Natural environments foster meaningful social interactions that are critical for both community cohesion and individual well-being.

Barriers and Facilitators to Nature Engagement

Financial constraints and safety concerns were common barriers, while the aesthetic appeal of natural settings and the availability of community spaces that encouraged gatherings and social interaction acted as major facilitators.

Cultural and Emotional Connections

Financial constraints and safety concerns were common barriers, while the aesthetic appeal of natural settings and the availability of community spaces that encouraged gatherings and social interaction acted as major facilitators.

Conclusions and Recommendations

The research finds that nature-based integration is a sustainable strategy to build resilient, interconnected communities. The recommendations for policymakers, charities and voluntary organisations, and communities themselves to enhance this approach include:

Enhancing Access and Safety

Strategies should focus on improving infrastructure to make natural spaces more accessible and safe for all community members, especially vulnerable groups.

Cultural Congruence and Engagement

Programs should be developed to encourage intercultural exchange and understanding within natural settings, using nature as a neutral ground to bridge cultural divides.

Community-Centered Design

It is vital to involve diverse community members in the planning and management of natural spaces, ensuring these environments meet the varied needs of all groups, reflecting their cultural practices and preferences.

Policy Implications

This study advocates for the integration of nature-based strategies within broader policy frameworks to enhance the integration process of migrants and the overall cohesion of communities. Specific policy recommendations include:

- *Policy Development*

Develop and implement policies that recognise the role of natural environments in integration strategies.

- *Resource Allocation*

Allocate resources to support the establishment and maintenance of natural spaces designed for integration activities.

- *Stakeholder Engagement*

Engage a broad range of stakeholders in the development of nature-based integration programs to ensure they are inclusive and effective.

1. Introduction

Migrants constitute a significant portion of the UK's population, with approximately 14% being born overseas. This demographic fact highlights the importance of integration as a critical policy priority, especially given the socio-political tensions arising from Brexit and the 'Hostile Environment' policy (Vargas-Silva & Rienzo, 2020). The COVID-19 pandemic has further highlighted significant inequalities faced by communities of migrant background, particularly in terms of access to green spaces (Geary et al., 2021). These challenges, coupled with rising anti-immigrant sentiments and austerity-driven reductions in public service funding, highlight the urgent need for innovative, inclusive, and effective integration strategies.

However, the integration of natural environments into policy frameworks remains largely overlooked, despite their significant potential to support integration (Rishbeth et al., 2017). Our project combined a synthesis of existing research with new empirical findings to better understand and leverage the natural environment in fostering inclusive communities.

This report operationalises the concept of 'nature-based integration', which involves natural environments like parks, rivers, and woodlands to aid the integration process. This approach facilitates community bonding and resilience while enhancing migrants' connections to their new environment through structured activities like community gardening and informal engagements like walking (Phillimore, 2020). Our project is the first to extend the focus of nature-based

integration beyond migrants to include long-standing community members. This inclusive approach acknowledges the vital role that natural spaces play in fostering community cohesion.

Employing an interdisciplinary and cross-sectoral approach, our project used deep mapping and co-production methodologies to capture the complex interactions between migrants and their environments. The findings advocate for acknowledging and incorporating the multifaceted roles of natural settings in migration studies and integration policies, and highlight nature's potential to enhance community well-being (Gardens of Sanctuary, 2021).

The subsequent sections detail the project's aims and objectives (Section 2), describe the methodologies employed (Section 3), and present findings, including those from case studies in the Isle of Lewis, Blackburn with Darwen and London Borough of Haringey in Section 4. We introduce the Nature-Based Integration Framework, developed through this project (Section 5), followed by the conclusions including practical recommendations for both national and local UK policymakers, community planners, and other stakeholders involved in migration and integration in Section 6.

By embracing nature-based integration, this project contributes to a growing body of research that recognises the significant, yet untapped, role of the natural environment in the integration process. It addresses the pressing needs highlighted by contemporary challenges and offers a sustainable path towards building resilient, interconnected communities.

2. Project Aim and Objectives

This project examined a critical yet often overlooked aspect of migration—the deep connection between integration and the natural environment. Despite UK integration policy's recent shift towards local perspectives, there has been a disproportionate emphasis on social and structural aspects, often overlooking the physical environment's crucial role.

Our research aimed to bridge this gap by bringing together existing knowledge with new findings from urban, peri-urban, and rural settings to understand how different natural settings can play a role in facilitating migrant integration in the UK. We explored various integration practices within these natural settings, assessed outcomes, and examined differences across demographic groups, to identify facilitators of and barriers to nature-based integration.

Through collaboration with local communities in three diverse case study areas, we co-created 'deep maps' that combined social, scientific, and artistic methods, to enhance our understanding of nature's role in multi-directional integration. In collaboration with researchers, policymakers, and practitioners we developed policy- and practice-focused resources to bolster the implementation of nature-based integration initiatives.

The project's ultimate goal was to provide evidence about the role of the natural environment in integration and identify potential indicators that would incorporate environmental considerations into the Home Office's Indicators of Integration framework, aligning

with government objectives to foster inclusive communities supported by shared rights, responsibilities, and opportunities.

To respond to the evolving focus on local integration policies, our project selected three



Figure 1 Locations and characteristics of the three case study areas

diverse areas within the UK (see Figure 1) to examine the role of local natural settings in migrant integration across various geographic and demographic contexts:

- The Isle of Lewis, a predominantly White Scottish island in the Outer Hebrides, hosts a community deeply connected to Scottish heritage and practices like crofting, with religion playing a central role in local identity. It has undergone significant demographic shifts due to refugee resettlement schemes.
- Blackburn with Darwen in Northwest England, identified as one of five Integration Area local authorities in England (GOV.UK, 2019) is a diverse peri-urban centre surrounded by natural amenities. It is home to a substantial South Asian community, asylum seekers, and refugees, where nature-based integration is being explored despite high multiculturalism and deprivation.
- London's Haringey borough, known for its young and ethnically diverse population, faces social challenges like crime but has strong community ties and extensive green spaces.

3.

Methodology

Our methodology took a community-centric approach, engaging directly with local communities and authorities through innovative, participatory methods such as engaging community researchers and applying the Art of Hosting methodologies like Long Tables (Split Britches, n.d.). In each location, we selected two local Community Researchers who contributed knowledge on the dynamics of their communities, while gaining insights into academic practices.

A Policy and Practice Team and an Advisory Board, including local advisors (one representative from each case studies' local authority, a national advisor (one individual from a relevant government department), and artists with migrant backgrounds, supported the project's development and its relevance for policy and practice. The methods for data collection and analysis spanned four dimensions: spatio-temporal, aesthetic, reflexive, and conceptual, and realised the project's commitment to flexibility, inclusivity, and respect. This multi-perspective approach helped develop the Nature-Based Integration Framework which is presented in Section 6.

3.1 Spatio-temporal methods

To bridge the gap between research and practice in nature-based integration, we undertook surveys at two different geographical levels: a

national survey to analyse the scope and impact of nature-engaged integration initiatives and three participatory mapping surveys (one per case study area), to better understand the local communities' connection with the local natural environment. These methods explored the formal and informal engagement processes with natural environments. Results from the surveys helped us better understand the interaction between communities and their natural settings, and the practical applications of nature-based integration strategies.

3.1.1 Survey of nature-engaged integration initiatives

Our first survey aimed to identify nature-engaged integration initiatives across the UK, involving charities, government entities, and community groups, and to understand their role in migrant integration. Conducted in two rounds via the Online Surveys platform, the survey collected data on the geographical locations, objectives, and impacts of these initiatives on the communities involved, as expressed by the respondents who were individuals involved in the initiatives (e.g. project lead or volunteer). The first round, completed at the end of 2022, included 32 initiatives primarily in England, offering a broad view of the landscape. The second round, concluded at the end of 2023, collected data for 34 initiatives identified with Friends Groups linked to Parks Community UK.

This survey allowed us to capture a wide

array of activities, challenges, and opportunities, enriching our database with detailed insights into how integration was affected in the diverse nature-based initiatives that we captured from across the UK. Analysis was performed using both quantitative and qualitative methods, including thematic analysis, to delineate the operational scope and challenges faced by these initiatives. The results fed into our conceptual framework and informed the policy and practice resources we developed. Our open-access database of UK nature-engaged integration initiatives is available [here](#).

3.1.2. Participatory mapping survey

Our second survey used participatory mapping techniques (Brown & Kyttä, 2018) to directly involve residents from our case study sites. This allowed us to gather detailed insights into the community's connection with the natural environment. Participants identified and discussed their attachments or aversions to specific outdoor areas, revealing the underlying

reasons related to their activities, transportation means, and other lifestyle aspects. The survey also collected comprehensive demographic information to identify patterns of environmental engagement across various dimensions, such as age, gender, ethnic background, and migrant status.

Using both online platforms and in-person methods, we secured 119 responses in Haringey, 105 responses in Blackburn and 76 in Lewis, with representation across all demographics (see details in [Annexes](#)). Data collection was conducted using a participatory mapping platform, Map-me, which is an open-source tool. The platform was promoted through various local communication channels, using direct contacts and snowball sampling techniques, including through community researchers and local councils. Dissemination methods included digital media such as WhatsApp groups, as well as traditional approaches like community meetings and printed flyers.

Field data collection was undertaken during community events, using electronic



©Michał Iwanowski from *Go home Polish* series (2018)

devices to facilitate survey completion. This occurred at diverse venues such as workshops, fairs, and other public gatherings. To address technological or linguistic barriers, especially prevalent among older individuals and refugee populations, physical printed maps were used where necessary these groups. These maps were subsequently scanned and digitised using the Map-me system by our research team.

The recruitment strategy extended beyond nature-centric events to include local festivals and arts and crafts workshops. This approach, coupled with the engagement of community researchers who are intrinsic members of these communities, helped ensure a comprehensive representation of viewpoints. However, we acknowledge the potential for some self-selection bias among our participants, towards those with a pre-existing affinity for nature.

Data analysis involved both quantitative and qualitative methods, including thematic analysis and the use of Python, MySQL, and QGIS to interpret spatial patterns and demographic variations. This approach helped us understand the complex interplay between community members and their natural surroundings. GIS maps were created that visually represent the connection patterns identified in the survey, enhancing our overall findings with a detailed geographic dimension.

3.2. Aesthetic methods

The aesthetic dimension of our study included workshops, artist interviews, and artwork reviews, exploring the emotional and sensory aspects of nature-based integration. Across four workshops per case study site, we engaged a total of 42 participants from diverse backgrounds. Activities such as collage-making, cyanotype painting, zine production, stone painting, photography, terrarium creation, and audio recordings utilized visual and sensory ethnographic approaches to deepen our understanding of nature's role in integration. Designed with input from local advisors and community researchers, these sessions enabled robust data collection and revealed significant themes, such as the impact of nature on health, well-being, and social

connections, analysed using thematic analysis techniques (Braun & Clarke, 2006).

To recruit participants, we printed posters in collaboration with our community researchers and translated them into four different languages: English, Arabic, Urdu, and Galician, among others. These posters were promoted through various local communication channels, using direct contacts and community researchers, as well as local councils. Dissemination methods included digital media, such as WhatsApp groups, and traditional approaches like community meetings. Our host community centres in each case study site (Living Under One Sun, Bureau of the Art and The Bridge Centre) were instrumental in inviting members of the local communities to our sessions.

For the artist interviews and artwork reviews, our study analysed a selection of artworks created by artists of migrant backgrounds in the UK produced from 2011 to 2022. We initially identified 78 artworks, from which we selected 48 pieces that demonstrated diverse mediums, localities, and approaches to nature and artistic intervention. We followed a structured process including group consultations, a detailed briefing for reviewers, and an in-depth thematic analysis using NVivo, to identify and organise key themes. Details of these selected artworks are available in our [Annexes](#).

We interviewed 9 artists including Joseph Walsh, Uriel Orlow, Jessica El Mal, Shiraz Bayjoo, Michal Iwanowski, Asuf Ishaq, Désirée Coral, Yan Preston and Roei Greenberg these interviews yielded profound insights into the artists' creative processes, their artistic approaches, and the various ways. These insights showed that art plays a critical role in reshaping societal narratives and practices related to identity and culture. This nuanced approach reveals the intricate and diverse nature of identities, the environment, and artistic expression in the UK, enhancing our understanding of their interconnections and the significant societal implications they hold.

3.3. Reflexive methods

Throughout the project, we employed reflexive methods to understand how nature is perceived

1. Joseph Walsh, Uriel Orlow, Jessica El Mal, Shiraz Bayjoo, Michal Iwanowski, Asuf Ishaq, Désirée Coral, Yan Preston and Roei Greenberg

and its role in integration. We organized three reflexive sessions using platforms like Miro, involving our Policy and Practice Team, Advisory Board, and our research team. These discussions were crucial in guiding our research direction, leveraging an interdisciplinary, multilingual, and intercultural approach.

Further, reflexive observations were conducted at various sites across our case studies, with both lead and community researchers analysing the engagement of communities with their natural surroundings. These observations included external evaluations of integration activities and internal reflections on personal experiences with nature. We used fieldnotes and visual methods like drawing and photography to document interactions within natural environments. These were analysed using thematic and axial coding. Results from implementing this approach highlighted the intricate dynamics between individuals, communities, and the natural world, deepening our understanding of nature-based integration and helped refine our Conceptual Framework.

significant contributions from decolonial theory and examined integration practices in key refugee-hosting countries like Turkey.

By integrating emerging themes from our literature review with primary data using an iterative framework (Srivastava & Hopwood, 2009), we developed a nuanced understanding of integration and nature's roles across different contexts. This foundational work informed the development of our nature-based integration framework, linking theoretical insights with practical integration strategies.

3.4. Conceptual methods

In our study, the conceptual dimension was dedicated to deciphering the meanings of nature and integration, primarily using a scoping review to navigate the expansive and fragmented body of research spanning the past two decades. The conceptual dimension also involved the development of our conceptual framework.

The scoping review, designed according to the methodologies established by Arksey & O'Malley (2005) and refined by Levac, Colquhoun, & O'Brien (2010), allowed us to explore a broad array of interdisciplinary and intercultural theoretical considerations. We examined 138 peer-reviewed publications, focusing on those that offer significant insights into the natural environment's impact on refugee and migrant integration. 58 were found to be directly relevant. The full list of papers identified by the review is available in [Annexes](#). The review covered diverse academic fields and considered various conceptualizations of nature and how these influence migrant community engagement and integration. Notably, the review included

4. Findings from the Nature-Based Integration project

This chapter presents the findings from across our project. The project collected a huge amount of different types of data. Findings by methodological approach are presented in Section 4.1. Thematic findings are presented in Section 4.2. All findings fed into the nature-based integration conceptual framework presented in Section 5.

Figure 2 shows which methods fed into the different themes and the different parts of the conceptual framework. Readers may also note that, despite having produced a large number of maps on different themes from the participatory mapping exercise, we have only included a selected few to showcase key findings in different case studies. Our maps are available on our online *Deep Map*.

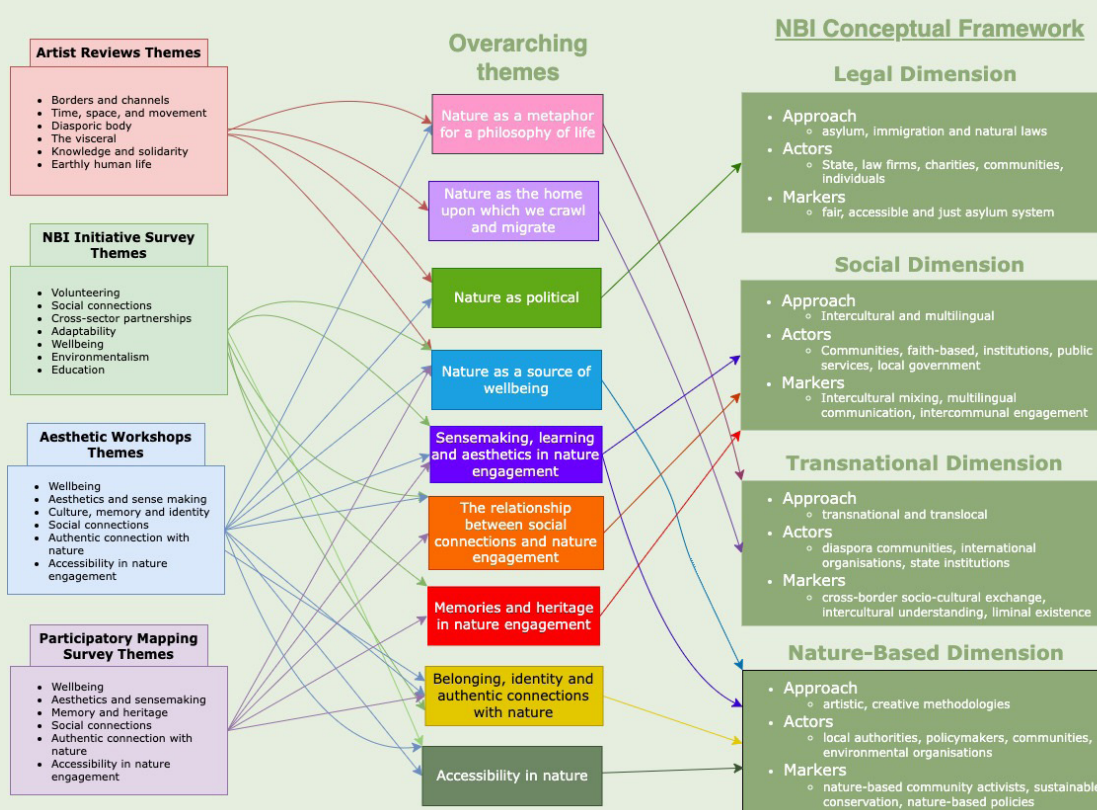


Figure 2: A conceptual map showing how the different methods contributed to which themes listed in the findings section and to which dimensions of the conceptual framework

4.1. Surveying the Field: Initiatives and artworks

4.1.1. Results from our survey of Nature Engaged Integration Initiatives

Our survey of Nature-Engaged Integration Initiatives unveiled a wide array of projects primarily led by grassroots organizations. Activities included nature conservation, community integration, and ecotherapy, amongst others. These initiatives, detailed in [Annexes](#) operated across diverse geographic settings—from urban gardens to rural parks—and heavily relied on community involvement and local support.

The projects showcase significant volunteer engagement and the creation of communal and green spaces, but various challenges such as funding constraints and the need for more migrant leadership were noted. Despite these hurdles, the projects promoted socialization, empowerment, and environmental stewardship, emphasizing the importance of strategic partnerships and accessible funding to enhance the scalability and impact of nature-based integration efforts across the UK.

The surveyed nature-based initiatives promoted socialization through regular group activities like gardening, cooking, picnicking, and festivals that facilitated social interaction and community building. These initiatives aimed to create human connections with the natural environment, fostering socialisation in outdoor settings. Empowerment was a critical aspect, with some initiatives paying participants for organising events, supporting accessibility through travel expenses, and giving participants autonomy in decision-making or co-development processes related to the initiatives. Socialising and empowerment of participants was in many ways inherent in initiatives due to a reliance on volunteering to provide resources or labour to sustain many of the projects. New social connections and the numbers of volunteers trained were frequently cited as evidence of success by the respondents who described the initiatives. They also described, in many cases, how the work of projects transformed previously neglected or threatened environments into accessible, productive or ecologically diverse nature spaces.

Environmental stewardship was a core focus, demonstrated through activities like tree planting, creating new green spaces, developing beehives, and improving habitats. Sustainable practices, such as organic gardening, were incorporated. The importance of strategic partnerships was highlighted by the diverse range of stakeholders involved, including local authorities, communities, volunteer organisations, and other groups. Several respondents also attributed the success of their initiatives to referrals and knowledge-exchange. Partnerships with local organisations that support under-served groups (e.g. people in the asylum system or those suffering from health issues) were particularly mentioned. Partnerships with the latter demographics sometimes could take the form of a social prescription model. Many initiatives, especially Friends of Parks groups, were documented as benefiting greatly from in-kind support received from local councils, often in the form of allowing use of buildings for storage or equipment for environmental restoration and gardening. Respondents noted a need for closer partnerships and accessible funding to scale up nature-based integration efforts across the UK.

4.1.2. Results from the reviews of visual arts and films

Our review of visual arts and films within the project highlighted the intricate relationships between migration, nature, and integration. A full list of the artworks reviewed is available in [Annexes](#). Films explored the dual role of borders as spatial boundaries and conduits for human-nature interactions. They challenged existing narratives and introduced new dimensions of time and space influenced by Deleuze's theories of the Time-Image and Movement-Image. Artworks depicted the "Diasporic body," capturing the complex interplay of memory, exile, language, culture, identity, and nature. These artistic expressions vividly portrayed the emotional and physical experiences of migrants—pain, fear, dignity—while emphasising nature's healing capabilities and its role in fostering integrative spaces. The artworks and films highlight acts of solidarity and the personification of natural elements like water. They emphasise nature's capacity to challenge societal norms and foster

profound integration. They urge a re-evaluation of how borders and human interactions with nature are conceived and enacted.

**4.2. Conceptualising “Nature”
— Findings from Across the Methods
Implemented in the Project**

The following sections bring together key findings and themes from the aesthetic workshops, participatory mapping, and reflexive observations from the case study sites: Haringey, Blackburn with Darwen, and Isle of Lewis. The participatory mapping survey and aesthetic workshops involved participants with migrant and non-migrant backgrounds. The findings discussed therefore apply to both migrant-background communities and to non-migrant-background communities. They highlight how nature influences various socio-cultural aspects of community life, synthesising themes from diverse methods used throughout the project.

4.2.1. Nature as a metaphor for philosophy of life

Our findings reveal the symbolic role of nature, particularly in aesthetic contexts, that help us understand connections between different states of existence. Nature conjures imagery of ancestral connections through enduring elements like trees and forests, suggesting a symbiotic relationship between humans and the natural world. Participants shared narratives about how trees might communicate in ways beyond human comprehension, and recounted personal experiences that highlighted nature's ability to transcend perceived barriers between humanity and the natural realm. A poignant anecdote from a workshop in Blackburn with Darwen depicted the release of a condor from captivity as a symbol of liberation from societal constraints and the

embrace of freedom. Even in urban settings, we found that individuals maintained a connection with nature, drawing motivation and inspiration from its essence.

Additionally, soil was explored as a metaphor for life cycles, encapsulating birth, growth, and decay—reminding us of our intrinsic connection with the earth. This philosophical engagement with nature not only enhances wellbeing but also fosters a sense of belonging and cultural integration by connecting individuals more closely with the cycles of nature.²

These insights, which demonstrate the transformative potential of nature in enriching human lives, provide support for the integration of nature-based practices into frameworks like the Home Office Indicators of Integration. Our findings on nature show particular synergy with the domains Stability, Culture, and Health and Social Care, included in the framework (Ndofor-Tah, et al., 2019).

4.2.2. Nature as the home upon which we crawl and migrate

Through discussions and art analysis, we explored how crawling epitomizes the deep connection between humans and the natural world, symbolising life's emergence from the earth. An artist encapsulated this by noting, ‘In crawling, we experience the awakening of the earth.’ Reflecting our nomadic nature, human movement reshapes and transports natural elements, evolving nature itself (Lévinas, 2011).

This interaction between humans and the natural world highlights that it is important to understand how both settled and diasporic communities perceive and connect with nature. For instance, a migrant participant in Haringey shared their journey of attempting to cultivate familiar plants from their homeland, eventually embracing local flora.

These findings highlight that humans’ relationship with nature is fundamental, serving

1. ‘Can I show a story that I saw last night? It was really interesting. It was four years ago and they were letting a condor, the big bird go. Oh yeah. And it had been in a cage in a zoo, but most of its life. And it was teetering on the edge of this thing where they were letting it go and it was just flapping its wings. And you watched it and you thought, is it going to go or is it not? And like you say, sometimes we put constraints that had been constrained in a zoo and it didn't know if it could do it. And then suddenly it jumped off and it flew. And it was absolutely amazing. And I just thought we put those constraints of society and sometimes we've just gotta jump, just do it and do it, haven't we? You know, it was just amazing watching it. Beautiful woman. Because I ride my bike and people laugh at me, but I'm just ignore. But that's good. That's really good.’ BwD W2, 753.

2. A quote from one of our participants in support of this statement: ‘They couldn't access services, they couldn't. And when we got together at Eat, couldn't eat in Adventure Playground, the mystery unfolds because we started walking around our neighborhood with all push chairs and thing and they hit to marshals. And I think there were about 20, 30 women from different cultures. Most of them sat down and all they did was crying. They lived around the corner and they never saw marshes. So because if God wanted for the community not to have access to nature, couldn't do better job than the planners <laugh>. Um, to have great big roads, to separate people who lived for years in a place, they had total isolation and it was to do with traffic lights, the way it changed for the lorries and things. So that's the first thing, the campaign to change, to have access. And these mothers were full of medicine, medicine, knowledge of medicine, knowledge of herbs, knowledge of season, food, picking, all of that. So through that process we set up, uh, <inaudible> community allotment. And that became a multi award-winning, um, campaign to encourage nature in the cities. And I think for me, I have the same feeling as Chloe. I don't think people could take me out of London.’ LDN W1 720

as the backdrop of our existence and a critical factor in integration. As we delved into concepts of Belonging, Identity, and Authentic Connections with Nature, it became clear that nature is intrinsic to forming connections with new places, facilitating integration processes (Zisakou et al, 2024).

4.2.3. Nature as political

Nature, depicted as inherently political, connects society across various temporal, spatial, and historical dimensions. The way society politically interprets nature often reveals fragmented relationships that are influenced by economic and biopolitical factors. This perspective highlights how borders and various classification systems have historically deepened disparities (Everill and Burnell, 2022). For instance, the division of land into territories or the categorization of natural resources for economic gain reflects these fragmentations.

Our analysis, based on comparative studies of historical land use and policy impacts, supports these observations. The legacies of colonization, the Atlantic Slave Trade, and forced displacements demonstrate the transformation of natural landscapes into contested spaces—such as 'gardens' and 'forests'—which have become symbols of inequality, vulnerability, and exploitation. These areas, once communal and unclaimed, were appropriated and commodified, illustrating how power dynamics reshape nature. This commodification often perpetuated cycles of social and economic disparities, as these spaces were used to benefit colonizers at the expense of indigenous and local communities.

Reflecting on rivers as natural and political entities, one participant described growing up on a border, viewing the surrounding nations from a position of perceived safety. This perspective fosters 'abolitionist poetry' and decolonial 'border thinking' (Mignolo, 2011), which challenges conventional knowledge and invites reimagining histories and relationships.

These concepts underscore the urgent need to repair society's fractured relationships with nature and each other, suggesting that reintegration into nature's emergent processes is essential for healing and understanding.

4.2.4. Nature as a source of wellbeing

Our study found that nature engagement is a fundamental source of well-being, linking human existence with the wild and untouched aspects of nature. This supports literature evidencing the same links for migrant people and other demographics (Biglin 2020; Rishbeth et al 2019; Coughlan & Hermes 2016). Through aesthetic approaches, participants reflected on how nature enhances life's essence. They gave examples of experiences, like the scent of flowers and the tranquillity of green spaces, that are profoundly soothing and grounding. This connection extends to physical activities. Our participatory survey mapping explored the activities of respondents at their favoured nature locations. It highlighted the popularity of walking, alongside other physical exercises like water sports, running, or cycling.

In the aesthetic workshops, participants said that physical activities in nature contribute significantly to their mental and general health. They emphasised the multi-sensory experiences that go beyond physical exertion to include psychological and spiritual dimensions. This engagement is particularly impactful for children, with outdoor play and exploration deemed essential by aesthetic workshop, participatory mapping and reflexive observation participants for healthy development. Additionally, the knowledge-sharing of foraging and the use of natural ingredients for nutrition and medicine highlight nature's role in community well-being. Foraging was an activity undertaken in all case study locales, and a prominent feature of discussion within our aesthetic workshops. In our workshops across the regions, participants voiced a desire to learn more about horticulture and foraging, to increase access to health-benefiting produce in a sustainable and nature-engaged way.

Participants also viewed nature as a refuge from modern life's complexities, providing a mental and physical escape that fosters tranquillity and psychological balance. Interactions with nature were seen as vital for maintaining well-being and promoting integration, particularly for migrants and asylum seekers, whose access to natural spaces can significantly aid their settlement and mental health. This holistic view of nature's role

underscores its importance in fostering health, well-being, and integration, aligning with the objectives outlined in the Home Office Indicators of Integration (Ndofor-Tah, et al.,2019).

4.2.5. Sensemaking, learning and Aesthetics in Nature Engagement

Our study showed insights into how people make sense of, learn from, and appreciate nature. Although we often view nature as pristine and untouched, the categories and labels we commonly use to describe the relationship between humans and nature don't fully capture the complex ways humans and nature interact. These simplified views overlook the intricate ecologies and relationships, as we struggle to express nature's essential qualities with our limited human senses.

Participants in our three case studies appreciated the aesthetic qualities of nature, observing how its visual, tactile, olfactory, and auditory elements greatly enhanced their well-being. For instance, the case studies from Blackburn and Lewis pointed out the sensory joys derived from natural sounds and sights, which deepened connection to the outdoors. We discovered that nature serves not only as a source of beauty but also as a vibrant classroom with endless possibilities for creativity, learning, and personal growth. These experiences are vital for understanding ecological systems and promoting environmental stewardship.

Our study found that interacting with nature provides individuals, especially migrants and newcomers, with solace and inspiration. This connection is transformative because it helps them engage with their new surroundings. These experiences foster a deeper appreciation for natural diversity and contribute to a holistic sense of well-being. As a result, engaging with nature becomes a vital element in community integration and personal fulfilment, offering both emotional support and a sense of belonging in new environments.

4.2.6. The Relationship Between Social Connections and Nature Engagement

Our research across Blackburn with Darwen, Lewis, and Haringey illuminated the crucial role

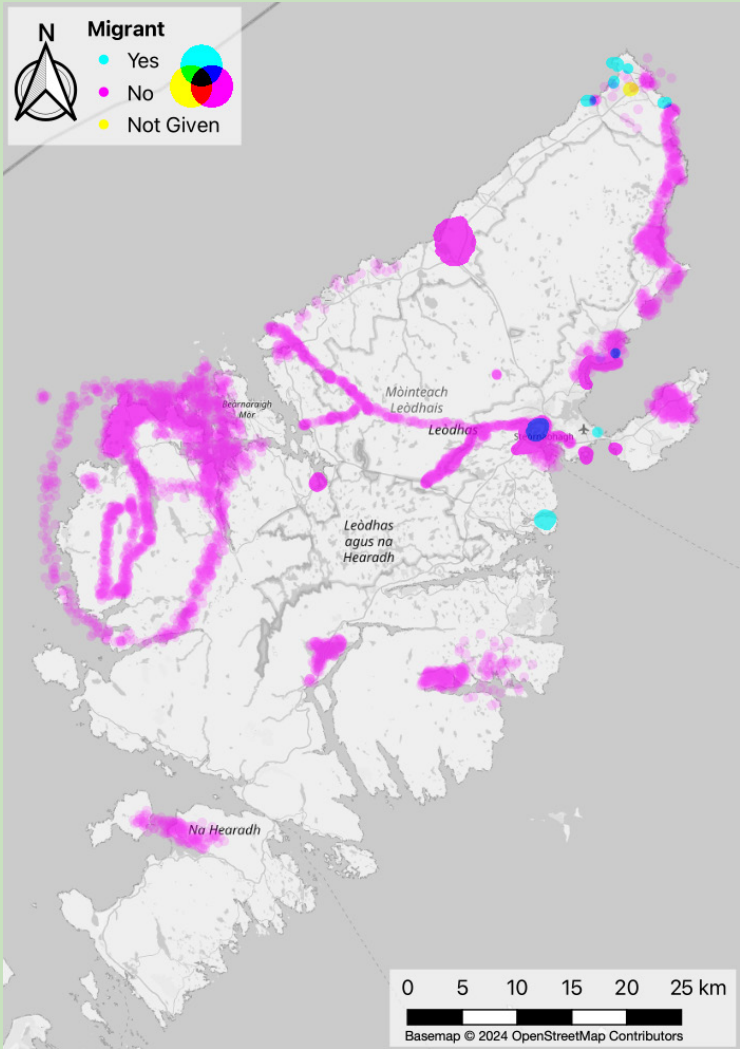


Figure 3: Participatory map of sites in nature that people in Lewis connected to while citing factors associated with aesthetics, learning and psychological wellbeing, by migrant and non-migrant background

of social connections in nature engagement. It revealed how natural spaces serve as communal assets amid dwindling public infrastructure. Participants emphasised that activities like group walks and playground meetups not only foster community bonds but also enhance mental well-being. For example, participants noted the importance of simple outdoor activities in building social and mental health, particularly in communities affected by service cuts.

The workshops and surveys highlighted that family and friends play a pivotal role in encouraging participation in nature-based activities. They enrich the experience through shared enjoyment and the creation of lasting memories. In Blackburn with Darwen, a notable majority of respondents frequently visited natural sites with companions, underscoring the social nature of such engagements. Furthermore,

natural settings like parks were lauded for their ability to bring together diverse groups, fostering inclusivity and community cohesion.

Figure 4 showcases evidence for this theme in the Blackburn participatory map. The figure shows a diverse set of locations where people in Blackburn, who identify either as migrant or non-migrant, connect to nature with family playing an important role. These results contribute to our

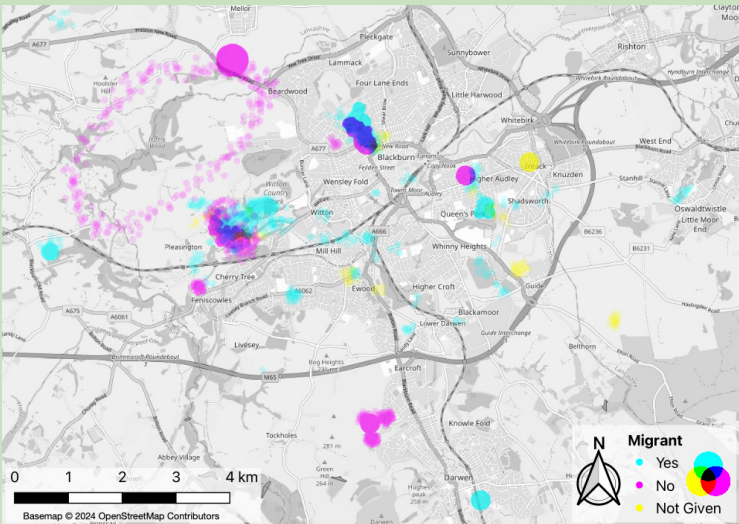


Figure 4: Participatory map of sites in nature that people in Blackburn with Darwen connected to while citing factors associated with family. The group is divided into migrant and non-migrant background.

understanding of how connecting with nature, in forging stronger connections between families, contributes to greater stability and social bonds as recognised as crucial in the Home Office Indicators of Integration (Ndofor-Tah., et al., 2019).

Indeed, this connection between social dynamics and nature engagement is particularly vital for migrants and new arrivals because it offers them valuable opportunities to integrate into their new communities (Stodolska, et al., 2016). Our findings advocate for policies that ensure natural spaces are accessible and welcoming to all, to support a fabric of community life that weaves together social interactions and nature engagement into the broader tapestry of community health and integration.

4.2.7. Memories and Heritage in Nature Engagement

Our exploration into the role of memories and heritage in nature engagement highlights

profound connections between individual identity and interactions with natural environments. Aesthetic workshops across Blackburn with Darwen, Lewis, and Haringey revealed that memories, especially from childhood, act as powerful conduits connecting past experiences with present motivation. They provide comfort, and inspiration for both migrant and non-migrant participants. Participants shared recollections of nature from their formative years, noting how these experiences shaped their identities and sense of belonging.

Discussions revealed that memory engagement with nature is multisensory. It involves touch, smell, and sound, which enhances the connection individuals have with natural environments. It makes experiences more vivid and emotionally impactful. For instance, participants described how the smell of a forest could evoke memories of childhood activities with family.

We discovered that nature acts as a communal space where people can share experiences, celebrate cultural heritage, and build new memories. This contributes to community cohesion and integration. The participatory mapping survey responses further emphasise the role of heritage in strengthening individuals' connections to specific natural areas, enhancing their sense of belonging. For instance, Figure 5 indicates that both migrant- and non-migrant respondents to the participatory mapping in Haringey when highlighting what nature locations they connected to most wrote about the role of memory and heritage as reason. These insights underscore the need to preserve natural spaces and promote accessible, inclusive opportunities for nature engagement to support cultural continuity and integration across diverse communities. .

4.2.8. When nature challenges integration

While nature engagement was found to be fundamental in assisting integration in the ways indicated above, we found that the natural environment can also challenge processes associated with establishing a sense of belonging and integration.

Physical realities and harsh climate or weather conditions can be a challenge for

newcomers adapting to a new area. This was evident in discussions about winter darkness and lack of daylight on the Isle of Lewis, as well as comments in the other two case study locales about struggling to get used to very acute changes in weather between seasons in the UK for a period after relocation. However, there was little evidence to suggest that migrant people struggled to connect with the UK natural environment because they were different to their country of origin or other countries previously lived in.

Nature engagement in public spaces such as parks along with other communities may also present challenges such as a risk of people feeling

establish a sense of belonging and attachment to place. While these dynamics merit further investigation, they do show the potential value of nature planning and design strategies geared towards re-wilding as well as accessibility - this would also sync with our broader findings on how people connect with and build connections in nature in diverse ways, thus influencing integration.

4.2.9. Belonging, Identity, and Authentic Connections with Nature

Our exploration across the various case study areas highlights how nature profoundly influences identity and belonging. The aesthetic workshops revealed an innate need to reconnect with nature, often seen as lost over generations. This connection manifests in diverse ways, such as living in harmony with natural cycles or engaging deeply in horticulture, and is perceived as essential for balance and meaning in modern life. Participants, including those from urban environments, shared how nature acts as a critical element of their community and personal identity, helping them forge strong connections in new settings.

Particularly poignant was the shared nostalgia for traditional, community-oriented ways of life that closely interacted with nature, like the ways described by a participant from the Isle of Lewis. These stories underline the possibly innate need to engage with nature, regardless of one's geographic or environmental context, and highlight nature's role in the integration process and in fostering a sense of belonging.

We found that this connection with nature is not only therapeutic for individuals but also builds the foundation for community integration and community wellbeing. It offers a pathway to well-being and reinforcing social bonds. We recommend that accessible, and inclusive natural spaces are essential for nurturing identity and community cohesion and well-being.

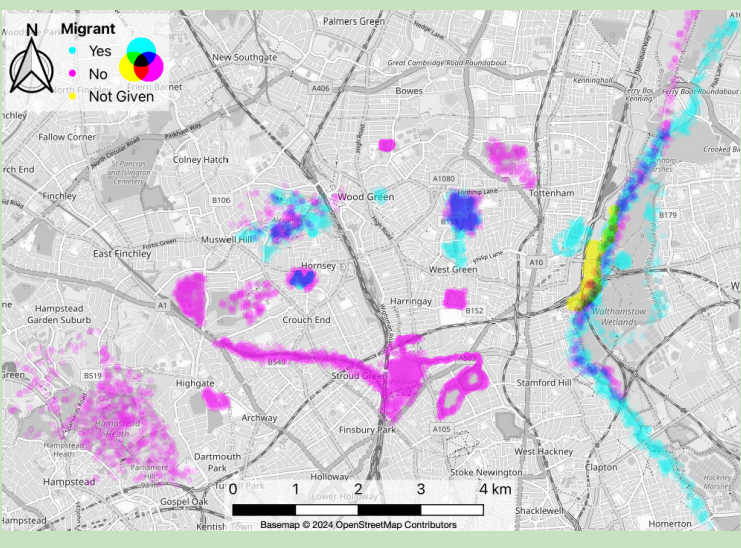


Figure 5: Participatory map of sites in nature that people in Haringey connected to while citing factors associated with memory and heritage. The group is divided into migrant and non-migrant background.

alienated culturally by activities undertaken by others. For instance, participants highlighted that cultural habits such as walking dogs and public displays of affection could inadvertently create some unease. While cultural differences in diverse areas may be expected, these findings do demonstrate the value in designing public nature spaces in a way that accommodates people with varied cultural backgrounds.

Finally, while human design of nature spaces can improve accessibility, some participants in our study did highlight how human interference with nature could disrupt a sense of authenticity. Participants claimed this negatively influenced their ability to connect with nature and thus

4.3. Accessibility in Nature: Insights and Impediments

Our analysis from aesthetic workshops and participatory mapping surveys evidences significant barriers to accessing nature, shaped by demographic, geographic, and socio-economic factors. Accessibility issues extend beyond physical barriers to include time constraints, socio-economic status, and informational gaps. Work schedules and financial pressures, particularly noted among working-class and migrant populations, limit opportunities for nature engagement.

Participants also discussed the dual role of family and social connections in accessing nature; for some, these relationships motivate engagement, while for others, the lack of such connections serves as a deterrent. The physical barriers emphasized by respondents included urban planning issues that exacerbate access inequalities, especially for marginalized communities. For instance, a participant from Haringey described how urban infrastructure³ can act as physical barriers isolating communities from natural spaces. On the other hand, initiatives like community allotments reconnect people with nature.

Walking emerged as a popular way to access nature, particularly in Haringey, where proximity to green space played a crucial role in facilitating connections with the natural environment. However, transport options and safety concerns were significant impediments, especially for female and migrant-identifying respondents. This indicates a need for sustainable and affordable transport solutions to enable people to access nature.

These findings underline the need for tailored approaches to enhance nature accessibility, that consider diverse needs and circumstances. Local authorities, community organizations, and policymakers must collaborate to implement inclusive, culturally sensitive strategies that enable all community members to benefit from nature engagement, fostering well-being, social connections, and integration.

4.4. Case-study Specific Findings

This section examines the factors influencing nature engagement in Blackburn with Darwen, London Borough of Haringey, and the Isle of Lewis. It assesses how these factors affect nature-based integration, integrating findings from aesthetic workshops and participatory mapping surveys. The section first identifies common facilitators and barriers across the regions, then details those unique to each location.

4.4.1. Common facilitators of nature-based integration across case study locales

Across the case study areas, shared experiences of natural settings significantly motivate nature engagement. Participatory mapping surveys show that most visits to favourite natural spaces often involve family or friends. This was especially pronounced among 26–50-year-olds in Haringey, and reflected parents' desire to connect their children with nature. These spaces act as communal commons, vital in urban contexts. Social connections also enable people to share knowledge about nature. Digital tools can also enhance nature engagement. For instance, workshops participants referenced online searches to find out more about horticulture and foraging, showing that digital connectivity can support learning about nature.

Financial accessibility to nature, with no entry fees, is particularly valued in the current economic climate. It offers affordable recreation and socialising options. This was particularly pronounced in our aesthetic workshop discussions. The proximity of natural spaces to homes is crucial. It enables regular and easy access which strengthens people's connection with the landscape. Walking was selected by participatory mapping respondents as the most popular mode of transit to favoured nature locations across all three case study areas, but especially so in Haringey - in which it featured in 94 of 119 responses. Many respondents also cited proximity as a reason for their meaningful connection to a nature area.

Physical activity in nature, such as walking,

3. A quote from one of our participants in support of this statement: 'They couldn't access services, they couldn't. And when we got together at Eat, couldn't eat in Adventure Playground, the mystery unfolds because we started walking around our neighborhood with all push chairs and thing and they hit to marshals. And I think there were about 20, 30 women from different cultures. Most of them sat down and all they did was crying. They lived around the corner and they never saw marshes. So because if God wanted for the community not to have access to nature, couldn't do better job than the planners <laugh>. Um, to have great big

roads, to separate people who lived for years in a place, they had total isolation and it was to do with traffic lights, the way it changed for the lorries and things. So that's the first thing, the campaign to change, to have access. And these mothers were full of medicine, medicine, knowledge of medicine, knowledge of herbs, knowledge of season, food, picking, all of that. So through that process we set up, uh, <inaudible> community allotment. And that became a multi award-winning, um, campaign to encourage nature in the cities. And I think for me, I have the same feeling as Chloe. I don't think people could take me out of London.' LDN W1 720

cycling, or sports, is a strong motivator. Sports like running and cricket are common in Haringey and Blackburn with Darwen, while water sports are popular in Lewis due to its island geography.

On a different note, participants highlighted the psychological benefits of nature engagement—peace, calm, and reflection—which provide a refuge from daily stresses.

Personal history and memories also play a critical role, with many citing childhood experiences and family traditions as influential. In Blackburn with Darwen, Haringey, and Lewis, 20-30% of participatory mapping respondents in each locale connected their engagement with nature to heritage, underscoring the importance of memories in fostering a sense of belonging in nature.

The diversity and beauty of natural environments are crucial for building connections with nature. Scenic beauty and tranquility away from urban chaos are highly valued, enhancing engagement with nature. This appreciation for aesthetic value was evident throughout aesthetic workshop discussions across all case study sites and was mentioned in around 60% of participatory mapping responses in each site. It highlights the role of natural settings in promoting well-being and integration.

Furthermore, organised nature-based activities in our case studies stood out as particularly effective. Participants valued local initiatives that facilitated community involvement in natural settings, especially those that were inclusive and accommodated diverse backgrounds. These activities often included support like transport expenses and childcare, that addressed systematic inequalities and enhanced access. The integration of intercultural exchange within these initiatives was also seen as beneficial. This aligned with best practices observed in other nature-based integration projects surveyed across the UK.

4.4.2. Common barriers to nature-based integration across case study locales

Common barriers to nature-based integration identified across our case study locations include financial limitations, societal norms, safety concerns, transport and time constraints. Although access to natural spaces is free, associated costs like recreational activities and

visiting cafes can exclude those on tighter budgets. Moreover, the expense of traveling outside urban areas to reach natural spaces or the unavailability of public transport highlights the need for more accessible natural experiences within cities or better connections.

Participants also expressed a sense of alienation in natural spaces based on their personal and social backgrounds. Single individuals or those without families often feel out of place in areas seen as family-oriented, underscoring societal expectations about who should engage with nature. Ethnic minorities may feel unwelcome due to visible lack of diversity or safety concerns, which exacerbate feelings of exclusion. Incidents of racism in natural settings, shared by participants during workshops, emphasise the urgent need for culturally congruent, welcoming public nature spaces.

Safety and security concerns, particularly expressed by female and migrant participatory mapping respondents, deter visits to certain natural areas. This highlights a need for initiatives to enhance safety of those areas.

Geospatial data also indicated that people with migrant backgrounds often have restricted access to nature, limited to built-up urban areas due to housing and transport options.

The challenge of balancing personal, social, or professional responsibilities with nature engagement was also raised as a significant barrier. Participants, especially migrants, noted severe time constraints due to the demands of integrating into a new life in the UK. They called for solutions that accommodate these diverse life circumstances to promote broader access to nature.

4.4.3. Insights from the London Borough of Haringey

4.4.3.1. *Facilitators of nature engagement in Haringey*

In Haringey, and going beyond the common facilitators of nature engagement identified above, organised activities such as volunteer initiatives play a crucial role in building social connections and fostering a sense of responsibility towards natural spaces. These activities enhance community engagement with

nature and deepen residents' sense of belonging to their local environment.

This was highlighted in our aesthetic workshops. Participants shared experiences of benefitting from organising services that address cultural, transport, and psychological barriers to accessing nature. These services often employ inclusive peer support and volunteering community models. A number of these services have been successfully implemented by several nature-based integration initiatives in the UK, including three projects within Haringey itself.

4.4.3.2. Barriers to nature engagement in Haringey

Barriers to nature engagement in Haringey mirror those identified across all study sites. They reflect broader social and structural issues that impede community integration and well-being. Financial constraints, stigma related to personal, social, and ethnic backgrounds, and structural challenges such as racism, housing inequality, and urban planning issues are significant. Antisocial behaviour and safety concerns are particularly pronounced. The participatory mapping highlighted areas residents prefer to avoid due to negative associations. These areas often overlap with spaces otherwise positively viewed. In the participatory survey 27 respondents highlighted areas they avoid due to antisocial behaviour, with a notable proportion of female respondents (75%) citing safety concerns compared to male respondents (47%).

Young adults aged 16-25 were more likely to report negative associations with areas. This group had heightened safety and security concerns. They were also the least likely to have company when visiting favoured nature spots. Additionally, responses to a specific question on places that participants would like to access but cannot highlighted safety issues, predominantly from females. This emphasises the need for targeted interventions to enhance safety and inclusivity in local natural spaces. These findings underscore the importance of addressing both physical and perceived barriers to ensure equitable access to nature, to facilitate broader community engagement and enhance the well-being of all residents.

4.4.4. Insights from Blackburn with Darwen

4.4.4.1. Facilitators of nature engagement in Blackburn with Darwen

In Blackburn with Darwen, social interactions and community formation in natural settings significantly facilitate nature engagement. Our participatory mapping survey revealed that 93 out of 105 respondents often visit favoured natural locations with other people. Additionally, 31 respondents cited socialising with family, friends, or acquaintances as their primary connection to these places. Workshops reflected similar sentiments, emphasising nature's role as a communal space and how social interactions motivate people to venture into nature.

Financial accessibility and proximity were also crucial facilitators in Blackburn with Darwen. Discussions and testimonials during workshops highlighted that the absence of costs associated with accessing natural spaces was vital for community members engaging with nature. Proximity played a significant role, with 72 respondents walking to their destinations, and 14 citing close distance as a key factor in their choice of locale.

4.4.4.2. Barriers to nature engagement in Blackburn with Darwen

In Blackburn with Darwen, common barriers to nature engagement include time constraints and safety concerns, similar to issues identified in the other case study areas. Participants noted difficulties in balancing personal, social, or professional responsibilities with time for nature. Safety concerns, particularly noted by female and migrant respondents in our mapping survey, emphasise the need for targeted support for these groups.

Geographical location, transportation options, financial constraints, and accessibility also pose significant barriers. Although proximity to natural spaces is valued, transportation and financial issues hinder access to desired locations. Our participatory mapping survey highlighted that 16 out of 119 respondents were unable to visit preferred natural areas due to transportation issues or financial constraints, with female and migrant respondents

disproportionately affected. Feedback from our workshops further illuminated these accessibility challenges, especially for those unable to drive or living with disabilities. These findings point to a need for improved infrastructure and inclusive urban planning to ensure that all community members can access natural spaces.

Addressing these barriers in Blackburn with Darwen requires a comprehensive approach that considers the interplay of personal, social, and structural factors. By reducing these obstacles, it is possible to create a more inclusive environment that encourages widespread engagement with nature. This would enhance community well-being, foster senses of belonging, and strengthen social bonds.

4.4.5. Insights from the Isle of Lewis

4.4.5.1. *Facilitators of nature engagement in Isle of Lewis*

The exploration of nature engagement in Lewis highlights several key factors that influence individuals' connection with the natural environment. Social interactions are a primary motivator, with migrant-identified respondents and those aged 26 to 70 often emphasizing the value of companionship during their nature outings. However, many respondents, particularly migrants, also value solitude, with 26 out of 75 indicating they visit their favoured locations alone to find peace and escape daily stresses. 79% of migrant-identified respondents reported often visiting nature spots alone, compared to 37% of non-migrant respondents. Female respondents were less likely to visit locations alone.

Another demographic difference in the data worth noting is that none of the 12 migrant respondents reported doing sport, unlike many non-migrant respondents, who described participating in water sports and other types of physical exercise. This suggests that action could be taken to extend engagement in sports to diverse groups and facilitate nature-based integration, as highlighted previously.

Close proximity to natural spaces is another crucial factor facilitating regular nature engagement in Lewis. The proximity, combined with the links made to personal histories and childhood experiences, physical activity, and the

aesthetic diversity and beauty of natural spaces, enhances this connection. These factors were particularly highlighted in workshop discussions and participatory mapping responses, where respondents frequently cited aesthetic diversity or beauty as reasons for their affinity or aversion to certain areas.

Overall, considering also the common facilitators of nature engagement, promoting nature-based integration in Lewis involves a blend of social, physical, psychological, and aesthetic elements, which contributes to a rich, multifaceted relationship with the natural environment. These insights underscore how individuals and communities can be encouraged to deepen their connection with nature, enhancing their overall well-being and community cohesion.

4.4.5.2. *Barriers to nature engagement in Isle of Lewis*

In Lewis, despite the abundance of natural landscapes, geographical and transportation challenges significantly hinder nature engagement. Our findings from the various methodologies indicate that while many respondents walk to their favourite natural spots, a substantial number rely on cars or other private motor vehicles to access more distant or remote areas. Public transport options and infrastructure are limited, as only a small fraction of respondents use bikes or public transport to reach natural spaces.

The participatory mapping survey revealed that lack of transportation options and time constraints are major barriers preventing residents from visiting desired places. This suggests a keen interest in exploring a broader range of natural settings, but practical obstacles such as inadequate transport facilities and limited time availability often hinder these pursuits.

Notably, transportation barriers are more pronounced among female and migrant-identifying respondents. These issues may reflect broader social and logistical factors that impact the ability of these groups to engage freely with natural environments. They point to the need for improved accessibility and inclusive planning to enhance nature engagement for all community members in Lewis.

5.

Developing our Nature-Based Integration framework

Findings from all our methods, and insights from the themes identified, fed into our conceptual framework for Nature-Based Integration, which we present here (and are diagrammatically represented in Figure 2).

Understanding nature-based integration requires a nuanced grasp of the notions of "integration" and "nature." In migration and refugee studies, "integration" broadly signifies the process by which migrants and refugees become part of society in their new countries. This concept is used by the United Nations High Commissioner for Refugees (UNHCR) and implemented at various levels of UK government policy and practice. Traditionally, integration is seen as a 'two-way process' involving adaptation and engagement across multiple domains such as employment, housing, and leisure (Ager and Strang, 2008). However, it is highly dependent on the local context and is mediated by the 'opportunity structures' that are available in host societies, including discourses, relationships, and support systems (Phillimore 2021).

Critically, integration has been challenged as perpetuating colonial power dynamics, emphasising assimilation and framing the migrant as needing to conform to a static, coherent society (Favell, 2022). This approach has been politically weaponized, creating the notion of the 'good migrant' while undermining the 'right to opacity'—the right to resist being fully defined or assimilated (Glissant, 2009).

New approaches to integration, viewed as a form of resistance to these colonial logics,

suggest that integration could be a 'destituent force' that fosters new forms of intra-human, intercultural, and inter-epistemic connections, which do not enforce exclusion or seek homogenisation (Walsh, 2021). From a decolonial perspective, integration is reimagined as a dynamic process of cultivating life-affirming connections in an era marked by violence and conflict, promoting relational ontologies and epistemologies beyond Western norms (Maldonado-Torres, 2016).

Our project engages with these critical perspectives by incorporating nature into the discourse on integration. It emphasizes the deep and essential links between humans and the natural world, and challenges the colonial dichotomy of human/non-human.

Our findings brought us to conceptualise nature-based integration as a form of engagement between people, cultures and learning that fosters a collective sense of connection, coexistence, and belonging. Yet, this conceptualisation also presents challenges in translating such approaches into policy. It raises questions about what data are considered valid and how we might transform or work within existing policy frameworks.

For example, the heavy reliance on statistical information that focuses on measurements often fails to acknowledge the human dignity of people seeking refuge. This approach reduces them to mere statistics, such as asylum quotas (Squire, 2008). Similarly, the use of dehumanising language, as exemplified

by successive Home Secretaries in the UK, normalises the dehumanisation and racialised othering people seeking refuge are forced to endure. Thus, we remain cautious about imposing national or cultural values on nature and strive to counteract perceptions of migrants as outsiders to both nature and culture.

Based on our findings, we have developed a Conceptual Framework for Nature-Based Integration. Jabareen (2009) defines a framework as a 'network' of concepts that linked together help to understand a phenomenon. We developed our conceptual framework by drafting our understanding of nature-based integration and reviewing it with different actors and bringing in our findings at different stages of the project, in an iterative process.

The Nature-Based Integration framework is designed with three primary objectives: to unpack the complexity of 'integration' as a multifaceted phenomenon encompassing legal, political, socio-cultural, transnational, and

environmental dimensions; to provide a practical structure to guide policy and decision-making in integration practices; and to identify and address intersectional barriers to integration such as juridical, socio-cultural, and environmental factors. This framework relies on intercultural, inter-epistemic, and multilingual approaches that incorporate diverse perspectives and expertise across disciplines and sectors.

Integrating theory with data, our framework envisages integration through intercultural, inter-epistemic, relational, and multilateral dimensions that transcend time and space. It aims to foster enhanced integration by leveraging multidimensional strategies that engage a wide range of stakeholders, thus supporting a holistic approach to understanding and facilitating integration processes. This multidisciplinary framework is illustrated in Figure 6, showcasing how it can dynamically support and improve integration practices.

Dimension	Approaches	Actors	Markers
Legal	Asylum, immigration & naturalisation laws	State, law firms, charities, communities & individuals	Fair, accessible & just asylum system
Social	Intercultural & multilingual	Communities, charities, faith-based institutions, public services and local government	Intercultural mixing, multilingual communication, intercommunal engagement
Transnational	Transnational & Translocal	Diasporic communities, international organisations, state institutions	Cross-border sociocultural exchange, intercultural understanding & liminal existence
Nature-based	Transnational & Translocal	Local authorities, policymakers, communities, environmental organisations	Nature-based community activities, sustainable conservation, nature-based policies

Figure 6: The Nature-Based Integration framework that was developed as part of the project

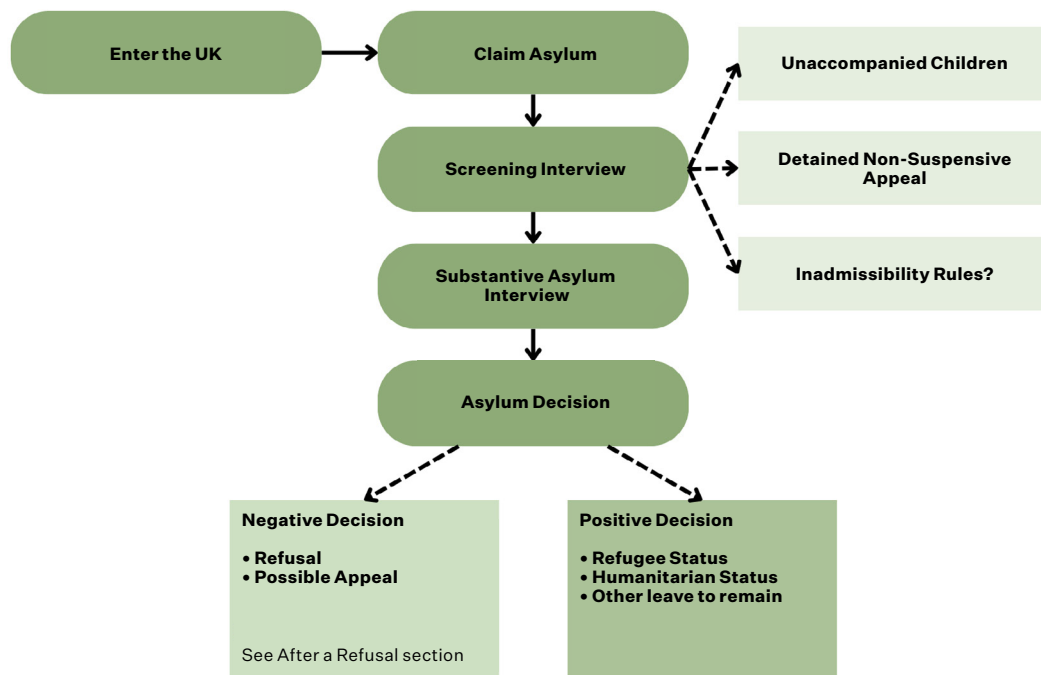


Figure 7: The Asylum Process in the UK (Source adapted from: Right to Remain Ltd)

5.1. Legal dimension

The legal dimension of nature-based integration is crucial for understanding the relationship between individuals and the state. The 1951 UN Refugee Convention and its 1967 Protocol outline the asylum framework. They define refugee status, legal protections, and social entitlements, which the UK has incorporated into national law. Recently, the UK has also introduced significant changes to its immigration policies with recent legislation such as the Border and Nationality Act and the Rwanda Deal.

The legal aspect of integration is inherently political, influenced by the political will of states and shaped by national and international legal frameworks. According to Picozza (2021), asylum is viewed as a socio-legal relationship with the state, involving processes that mark the transitions into and out of refugee status. This process is complex and varies globally. For instance, in regions like Jordan and Egypt, the UNHCR collaborates closely with local governments for asylum registration and status determination. In contrast, European

countries, including the UK, manage their asylum procedures with the UNHCR playing an advisory role.

In the UK, the asylum process is lengthy and bureaucratic, involving multiple interviews and a high likelihood of rejection, as depicted in the Right to Remain Ltd's asylum process diagram in Figure 7. This process can render integration unattainable, with recent legislation threatening to further restrict asylum rights. People denied the right to remain face limited access to essential services compared to those with recognised legal status.

Recent UK immigration policies have increasingly restricted avenues for regular immigration, raising income thresholds for family reunion visas, limiting international students from bringing families, and increasing the Immigration Health Charge. These changes contribute to family separation, labour shortages, and reduce integration opportunities.

The UK's approach to asylum has been critiqued as deliberately hostile, designed to discourage integration during the asylum process. The legal framework for integration thus becomes a complex issue, deeply intertwined with national and international policies that often have dehumanizing effects on asylum seekers.

Our findings suggest significant opposition from various stakeholders to the UK government's stringent immigration laws and offshore externalisation policies, such as the Rwanda Deal. Despite legal challenges and criticisms from entities like the UNHCR, which argues that these policies contravene the spirit of the Refugee Convention, the UK government continues to enforce these policies.

This context raises profound questions about the feasibility of legal integration in an increasingly hostile environment. Our analysis suggests that legal integration needs a radical rethinking towards openness, fairness, and hospitality. The current policy landscape in the UK poses significant challenges to this goal, raising critical concerns about the future of legal and political integration for those seeking refuge.

5.2. Social dimension

The social dimension of nature-based integration encompasses relationships between established communities and newcomers. Ager and Strang (2008) identify three key forms of social connections: social bonds within family or affinity groups, social bridges with other communities, and social links with governmental structures. These connections require cross-cultural interaction, language exchange, and the sharing

of knowledge and experiences. Social integration progresses alongside legal integration, with individuals navigating various stages while establishing their right to remain in a host country. As illustrated in Figure 8, individuals move through these stages while simultaneously forging social connections. While legal integration culminates in naturalisation, social integration is an ongoing, dynamic process characterized by continuous cultural exchange and adaptation within a changing socio-cultural landscape.

5.3. Transnational dimension

In this conceptual framework, transnational integration refers to the socio-economic, intercultural, and political engagements beyond any one sovereign jurisdiction. It is intended to conceptualise multiple modes of ‘integrating’ and existence in spaces often stretching between homeland, transit countries and destination-land. This is particularly relevant to settled diasporic communities and regular migrants. Within the wider context of migrant belongings, the local and the national contexts to which transnational integration is applied are just a part of wider, multiscale networks of belonging that include transnationalism and other spheres of translocal belonging (Al-Ali et al., 2001).

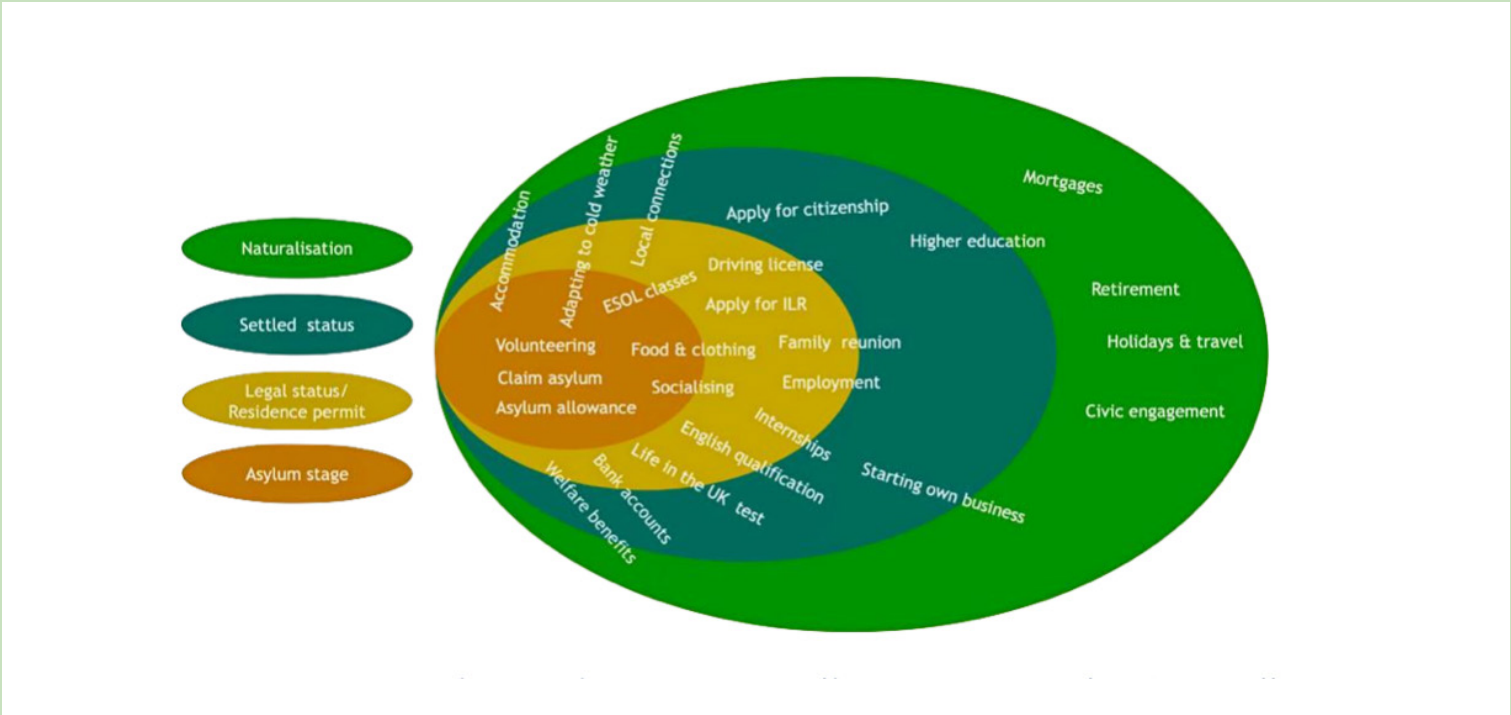


Figure 8: Steps to Social Integration from asylum to naturalisation (Source: Yohannes 2021, p. 223)

5.4. Nature-based dimension

The nature-based dimension of integration encompasses the reconnection between humans and the natural world. It offers a fresh perspective on the integration process often overlooked in traditional frameworks. Our survey of nature-based integration initiatives revealed that nature serves as a facilitator for integration. It offers inclusive spaces where individuals can connect without fear of judgment or exclusion. Participants emphasised the freedom and universality of nature. It provides a platform for migrants to detach from dehumanising discourses and develop a sense of place attachment and belonging.

This approach to integration that puts nature at its core allows for the emergence of new ways to develop diverse societies that are not assimilation. It fosters the sharing of cultural knowledge, language, and a sense of identity, while promoting intercultural dialogue and understanding. Moreover, nature-based integration encourages the development of participatory and creative methods that bridge socio-cultural and language barriers. Methods that facilitate community engagement and knowledge sharing.

Inspired by the resilience of ruderal plants thriving in neglected spaces, we introduce the concept of "ruderal sociologies" to underscore the interconnectedness of human-nature-culture relationships. This concept highlights

the adaptability and resourcefulness inherent in nature-based solutions to integration challenges. It promotes collaborative efforts between incoming and longstanding communities. Despite institutional obstacles, communities can cultivate coexistence through intra-human, inter-communal, and intercultural collaboration.

Drawing from our fieldwork on the Isle of Lewis, we reflect on the story of driftwood that migrated with the tides to Stornoway, where it was used to build black houses. The durability and adaptability of driftwood became integral to the construction of homes, symbolizing the evolving nature of integration. Even as black houses disappear, driftwood continues to find purpose, integrating into the "ruderal sociologies" of Stornoway.

Ultimately, the evolving nature of human-nature relationships underscores the need for mutual responsibility and solidarity in overcoming integration challenges. Rather than succumbing to colonial tendencies of othering and domination, both longstanding and incoming communities must embrace inclusivity and collaboration to build a non-exclusive humanity. These principles resonate with the voices of refugees we encountered. They emphasize the importance of collective resilience and support in navigating integration journeys.

6.

Conclusions and Policy Recommendations on the Role of Nature in Integration

6.1. Conclusions

In our project, we have gathered and analysed key findings, to significantly advance the understanding of nature's role in fostering integration and social inclusion, particularly between migrant and non-migrant communities.

Our survey of nature-engaged integration initiatives highlighted nature's positive impact on community cohesion and individual well-being, laying the groundwork for further research and policy development in this area.

Our review of artworks by UK-based migrant artists engaging with nature explored the multifaceted nature of human-nature relations, that challenge conventional boundaries and identities. This analysis underscored the sensory and emotional aspects of nature-based integration, often overlooked in policy discourse. It demonstrates the potential of aesthetic methodologies to inform policymaking.

Key themes revealed by thematic analysis across the various methods, include the role of nature in promoting health and well-being, in shaping identity and culture, facilitating social connections, and the importance of addressing barriers to accessing nature. Findings also showed that certain physical, cultural and historical realities around human engagement with nature spaces can also pose integration challenges. However, nature generally emerged as a platform for fostering a sense of belonging and facilitating intercultural dialogue. The analysis highlights nature's integral role in

promoting community cohesion and individual integration.

We found the aesthetic workshops to be an effective research integration tool. They provided a creative platform for participants to engage in nature, in which connections were fostered and participants' understanding of integration dynamics was deepened. Overall this enriched data collection, and facilitated intercultural exchange. The aesthetic workshops were nature-based integration in action.

Our cross-case study analysis makes clear nature's role in enhancing migrant integration, emphasizing its potential to foster inclusive, cohesive communities. By bringing nature engagement into the indicators of integration, it would recognise the role of environmental factors to promote social inclusion and well-being.

We developed the concept of "ruderal sociologies". It highlights the adaptability and resilience inherent in human-nature-culture relationships, and offers insights into nature-based solutions to integration challenges. Despite institutional barriers, collaborative efforts between incoming and longstanding communities can cultivate coexistence and promote intercultural dialogue. Drawing inspiration from the story of driftwood on the Isle of Lewis, we reflected on the evolving nature of integration, and the importance of mutual responsibility and solidarity in overcoming challenges. The 'relational eco-social praxes', i.e. people's practices to connect with each other and

with nature, transcend borders and identities, fostering a sense of belonging in natural spaces and promoting intercultural exchange.

Our findings align with Glissant's concept of Relation, they invite the reader to embrace openness and curiosity towards the unknown. By considering nature as a fundamental resource, our project identified the potential of a comprehensive approach to integration that brings environmental factors together with social and structural dimensions.

In conclusion, our research draws attention to the transformative potential of nature-based integration initiatives in fostering social cohesion, well-being, and cultural enrichment among diverse communities. Our findings provide evidence for the necessity of a *three-way integration*, between migrant-background communities, longer-term residents and, importantly, nature (see Figure 9). Indeed, our findings show that:

- experiencing nature (e.g. by growing plants, herbs or flowers connected to one's heritage) is intrinsic to forming connections with new places
- rebuilding a connection to nature is a fundamental element of healing, which is important for migrants

- natural environments are key places for activities that bring people together, including families and friends, and for forging new connections within and across communities, including migrant and non-migrant background.

By leveraging cultural practices and embracing the therapeutic benefits of nature engagement, society can create inclusive spaces that facilitate meaningful connections and enhance the integration experience.

Future research might build on our findings by experimenting with nature-based integration activities in different social contexts and natural settings, measuring the effects on integration, with a view to better understanding what works where and with who.

Policymakers and practitioners should consider these insights to design and implement effective policy interventions that harness the full potential of nature-based integration, following the recommendations we provide in the following sections.

6.2. Policy Recommendations

The findings from the research lead us to recommend a holistic approach to integration policy that incorporates the power of nature. Our policy recommendations emphasise the importance of community-centred design and the incorporation of cultural practices. By implementing these recommendations, policymakers can foster inclusive spaces that promote social cohesion, well-being, and cultural enrichment among diverse communities to maximize the benefits of nature-based integration for all.

6.2.1. UK Home Office policy recommendations

Our research on nature-based integration strategies has demonstrated significant potential for enhancing the integration of migrants within the UK. The unique benefits of engaging with nature—increasing physical health, psychological well-being, and fostering a sense of community—align well with the Home Office's Indicators of Integration Framework. It is a tool to help plan

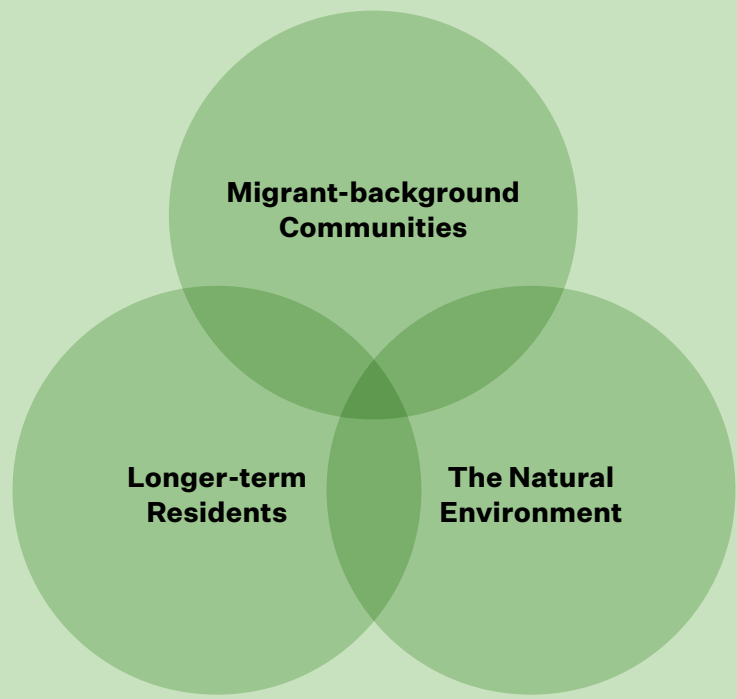


Figure 9: The three-way integration between migrant-background communities, longer-term residents and the natural environment

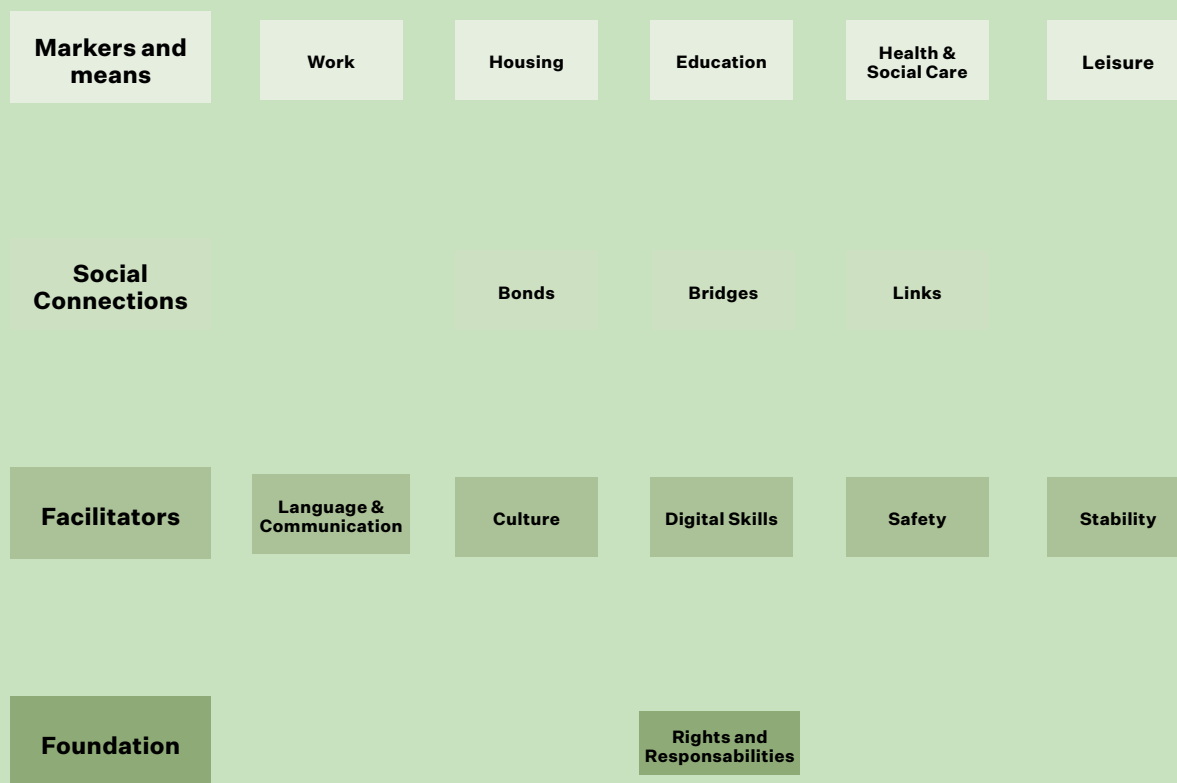


Figure 10: Indicators of Integration Framework
(Adapted from: Ndofor-Tah, et al., 2019)

integration interventions at local or national levels, and to promote and measure integration in a broad range of diverse contexts. Figure 10 shows the headings and domains currently included in the framework.

Our findings contribute to the following headings and domains:

1. Markers and Means

Our findings directly contribute to the 'Health and Social Care' and 'Leisure' domains. We showed that access to nature and activities taking place in a natural setting such as sports have a range of benefits for local communities, including migrants. By promoting activities in natural settings, the framework could support improving mental health and reducing stress among migrants.

2. Social Connections

Our findings enrich the 'Bonds' and 'Bridges' domains. They show how activities (or even just spending time) in nature facilitate interactions among diverse groups, fostering integration through shared experiences and respect for natural spaces. By promoting nature-based activities that support social connections, such as meditation groups or group hikes, the framework would support the development of new *social bonds and bridges* between people belonging to different communities.

3. Facilitators

Our findings also contribute to the 'Culture' domain as nature-based activities, such as the aesthetic workshops we undertook with our participants, can support cultural exchange between diverse communities (e.g., different names of flowers and traditions related to them). By promoting this type of activity, the framework would support intercultural exchanges between

migrants and longstanding communities, sparking reciprocal curiosity.

In addition to contributing to the current framework, we also identified the following actions to further its development:

1. New Nature-Based Indicator

We propose development of a new indicator within the 'Bridges' and/or 'Leisure' domains that captures the contribution of nature to integration efforts. The indicator could, for instance, measure the 'percentage of migrants participating in locally-organised nature activities, such as visits to country parks' or 'number of migrant-background led nature activities'. This indicator would not only track engagement but also highlight the role of natural environments in supporting migrant integration.

2. Pilot Study

To validate and refine this new indicator, we recommend a pilot study. The study should aim to identify the most effective nature-based activities that promote integration and determine optimal ways to encourage migrant participation.

Should the framework be revised, incorporating these nature-based indicators will provide a more holistic view of integration processes, recognizing the role of environmental engagement in enhancing the quality of life and community cohesion among migrants.

By embedding these nature-based approaches into the Indicators of Integration Framework, the UK government, and in particular the Home Office can ensure a more inclusive and effective integration strategy that recognizes the multifaceted benefits of connecting with nature. This approach not only supports migrants but also enriches local communities. It fosters a shared sense of belonging and mutual respect for the environment, embodying a three-way integration between new arrivals, longstanding local community and the natural environment (see Figure 9).

6.2.2. UK policy recommendations

6.2.2.1. Enhance Access to Natural Spaces

Our research demonstrates the importance of

proximity, transport, and security in fostering meaningful connections with nature. The participatory mapping and aesthetic workshops highlighted the role children play in forming connections to natural areas. Based on our findings, we recommend:

- Improvements to public transportation and pedestrian pathways for easy access to natural spaces, ensuring inclusivity for migrants and those with mobility challenges.
- Spaces for families and for children’s play, to help children connect with other children, and with nature and to strengthen bonds within and between families.

6.2.2.2. Safety and Inclusivity

All our methods, and the particularly the participatory mapping survey responses, highlighted safety and security as important issues, with challenges related to antisocial behaviour, particularly affecting women people from ethnically diverse backgrounds. Based on our findings we recommend:

- Increasing safety measures in natural spaces, such as improved lighting, and neighbourhood watches or safety patrols.
- Designing inclusive spaces that cater to diverse cultural practices and preferences. Spaces might include areas for quiet contemplation alongside more active zones.
- Well-maintained and aesthetically appealing children’s play areas that provide greater incentive for families to spend time in nature.
- Some spaces free from pets. While many people connect to nature with their pets, others - sometimes with specific cultural backgrounds - may prefer areas free from pets.

These considerations of safety and inclusivity are especially pertinent to community safety agencies, parks and recreation departments and community organisations carrying out nature-based activities.

6.2.2.3. Cultural Congruence and Engagement

Data from our surveys and workshops indicated

the need for tailored strategies to ensure that people from a variety of backgrounds feel inspired and welcome to engage in public nature spaces. Based on our findings we recommend:

- Developing programmes that encourage intercultural exchange and understanding in natural settings, such as multicultural festivals, community gardens, and nature-based education programs.
- Using both targeted and general advertising to ensure people with diverse working, family, health, ethnic and other backgrounds are informed and encouraged to take part.
- Programmes be made accessible for people with diverse backgrounds. Organisers should consider, for example, the need for childcare, support with travel expenses and interpretation.
- Developing initiatives in partnership with groups with a history of tailored support for target participants, to support best practice in engagement and facilitate shared learning.
- Park staff and volunteers could be trained in cultural sensitivity to foster a welcoming environment for people from diverse backgrounds.

These recommendations are relevant to parks and environment departments and community organisations working on nature-based initiatives, as well as cultural affairs organisations who have interest in supporting work in this area.

6.2.2.4. Community-Centered Design

Our research highlights disparities in accessing nature spaces. It points to the importance of involving marginalised groups, like female migrants, to foster trust and ensure inclusivity and responsiveness to different needs. Based on our findings we recommend:

- Engaging diverse local communities, including migrant groups, in the planning and design of natural spaces.

- The incorporation of cultural elements, such as significant plants or designs, that reflect the community's heritage.

- Monetary or in-kind assistance for those who participate in co-development processes to ensure accessibility and fairness, and to promote genuine inclusivity and community ownership.

Parks authorities and urban planners should collaborate with community organisations, especially those with lived-experience expertise, that can support for equitable consultation and development activities. For instance, this could take the form of partnerships models between policy and practice organisations with lived-experience of the local communities.

6.2.2.5. Integration Through Nature-Based Activities

Our research, including the survey of existing initiatives, shows the positive impact of nature-based activities on integration. They enhance physical and mental well-being while fostering social connections among diverse populations. They also contribute to environmental restoration and biodiversity conservation efforts. Based on our findings we recommend:

- Nature-based programs that foster social interaction and cultural exchange, such as community gardening projects, nature walks, and outdoor education programs.
- Initiatives that use nature for language learning and cultural orientation for newcomers.
- Support for volunteer networks and community organisations that are essential in promoting engagement with natural sites.
- Supplementing core activities with additional services like playgrounds or homework clubs to address diverse community needs and encourage participation.

These recommendations are particularly pertinent for parks and recreation departments, community organizations, educational institutions, and language learning programs.

6.2.2.6. *Cultural Practices Inform Integration Strategies*

Our research showed how sensory experiences in nature can evoke memories and cultural expression and celebration of heritage can nurture connections to place. They foster belonging, a vital aspect of resettlement and integration. Our workshops and the integration initiatives also demonstrate an appetite for nature-based cultural learning. Based on our findings we recommend:

- Incorporating nature-related rituals and traditions from various cultures into integration programs. Events like traditional harvest festivals or nature-related holidays offer opportunities for cultural exchange and mutual understanding.
- Using storytelling and folklore in natural settings, enabling individuals to share stories, legends, and personal experiences, to deepen connections between diverse community members and with the natural world.
- Integrating therapeutic aspects of cultural practices related to nature, such as healing gardens or communal singing spaces, into healthcare and recreational initiatives.
- Promoting education about diverse cultural perspectives on nature through workshops, exhibitions, and guided tours, enriching cross-community engagement with natural spaces.
- Financial and logistical support for these groups to ensure diverse participation and volunteer representation.

These recommendations are for cultural organisations, parks and recreation departments, and community groups.

By integrating these recommendations and insights into policy and practice, policymakers can harness the full potential of nature-based integration to support the well-being, inclusion, and cultural enrichment of diverse communities.

6.2.3. *Case Study Recommendations: London Borough of Haringey*

The research conducted in Haringey illuminates the intricate relationship between community members and their interaction with natural environments. It has revealed facilitators that support access to nature and barriers that impede it. It demonstrates there is more that Haringey could do to augment the role of natural spaces in fostering community integration, well-being, and a sense of belonging among residents. The following recommendations build on the recommendations above and outline specific interventions tailored to the findings from Haringey.

- **Strengthening Community Ties Through Nature:** The significance of social connections, child welfare, and physical activity in motivating individuals to engage with nature is vividly demonstrated in Haringey. This underscores the importance of maintaining and investing in parks and other public natural environments as vital spaces for families, friends, and children to play, exercise, and socialize comfortably. Given the impact of austerity policies on access to free public community infrastructure, there's a pressing need to design financially inclusive parks and nature-based initiatives. Collaboration with organisations experienced in supporting target communities is essential to ensure public nature spaces are accessible and welcoming for all.
- **Enhancing Safety and Inclusivity:** The research highlights the need to create safe and inclusive natural areas accessible to all community members, particularly addressing concerns voiced by diverse women. Initiatives offering group activities and policies aimed at tackling antisocial behavior are crucial steps toward improving nature access. They, require collaboration among community safety agencies, parks and recreation departments, and community organizations.
- **Promoting Quietness and Reflection:** The value of finding peace and tranquility in natural settings underscores the importance of increasing the accessibility of sites supporting quietness and reflection. Collaborative efforts among parks and recreation departments, urban planning departments, and civil society are necessary to cater to those seeking solace amidst the urban



©Michał Iwanowski from *Go home Polish* series (2018)

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- **Promoting Quietness and Reflection:** The value of finding peace and tranquility in natural settings underscores the importance of increasing the accessibility of sites supporting quietness and reflection. Collaborative efforts among parks and recreation departments, urban planning departments, and civil society are necessary to cater to those seeking solace amidst the urban hustle.

- **Addressing Socioeconomic and Planning Challenges:** Tackling financial and urban planning obstacles that disproportionately affect socioeconomically disadvantaged groups, including many from ethnically diverse backgrounds, requires substantial resources and strategic commitment. National and local governments should prioritize planning and delivering solutions to ensure equitable access to nature, promoting inclusivity, and enriching community quality of life.

Through these interventions, the potential of natural spaces as catalysts for community cohesion, personal well-being, and ecological stewardship can be realized.

6.2.4. Case Study Recommendations: Blackburn with Darwen

In Blackburn with Darwen, our research reveals the interplay of enablers and barriers shaping people's engagement with nature. It points to the potential for tailored interventions to enhance accessibility and foster well-being. Specific recommendations drawn from our findings are:

- **Proximity and Transportation:** Access to beautiful natural areas in close proximity is valued by participants, yet challenges related to transportation, particularly the cost and availability of public transport, hinder access for many. Joined-up urban, transport, and park strategies are essential to address these issues and ensure equitable access to nature, especially for vulnerable groups such as female and migrant populations. Collaboration among relevant stakeholders, including local government, urban planners, and community organizations, is critical to implement inclusive solutions.

- **Lack of Time and Need for Self-Care:** Time constraints underscore the importance of promoting nature engagement as a form of self-care and stress relief, particularly for individuals with caregiving responsibilities. Supportive policies and initiatives are needed to encourage individuals to prioritize their well-being, with collaboration across sectors such as healthcare, corporate wellness programs, and community organizations essential to address these needs effectively.

- **Supportive Infrastructure:** Culturally congruent infrastructure that acknowledges diverse challenges faced by community members is crucial for ensuring a welcoming nature engagement experience for all. Expansion of community infrastructure, co-designed with representative groups, is essential to address financial and cultural barriers, foster social connections, and promote inclusivity in natural spaces. Parks and recreation authorities, alongside local government planning departments, can play a key role in implementing culturally inclusive design strategies.

- **Wellbeing and Horticulture:** Policies and initiatives should address mental health concerns and promote the therapeutic benefits of horticulture and foraging, as highlighted by research participants. Collaboration between parks and recreation departments and community organizations can facilitate initiatives in this space, fostering knowledge-sharing and unlocking the potential of urban green spaces to support community well-being.

- **Support for Family and Play:** Infrastructure in natural areas should accommodate family interactions and play, recognizing the importance of spending time with family as a motivation for nature engagement. Policies and initiatives aimed at sustaining family-friendly environments in natural settings can enhance community cohesion and well-being.

- **Universal Access:** Targeted support is needed to ensure safe and equitable access to natural environments for all community members, especially those vulnerable due to gender or migrant status. Efforts to promote universal

access should prioritize collaboration among stakeholders and address systemic barriers to inclusion.

The recommendations tailored to Blackburn with Darwen highlight the importance of addressing specific barriers and leveraging enablers to enhance nature engagement and promote community well-being. Through collaborative efforts across sectors and inclusive design strategies, the potential of natural spaces as catalysts for social connection and individual wellbeing can be fully realized.

6.2.5. Case Study Recommendations: *Isle of Lewis*

The examination of nature engagement in the Isle of Lewis highlights various factors influencing residents' connection with the natural environment. These insights underscore the significance of communal experiences, physical activities, geographical considerations, and the intrinsic value of the natural landscape in shaping individuals' interactions with nature. Recommendations tailored to Lewis include:

- **The Role of Social Connections and Physical Activity:** Social connections, particularly with family, are a primary driver for engaging with nature. This finding points to the integral role of communal experiences in enhancing the enjoyment and benefits of nature engagement. Local community groups and associations could organize group walks, hiking clubs, and nature-based social events to bring families together. Public health authorities could launch outdoor physical activity programs, while local government could enhance walking trails and natural areas. Educational institutions could incorporate outdoor learning experiences, and environmental groups could organize community clean-up events and habitat restoration projects.
- **Appreciation for Aesthetic Diversity and Tranquility:** Respondents had a deep appreciation for the aesthetic diversity and tranquility of natural sites. This points to the importance of preserving and promoting access to varied landscapes. Conservation groups could work with tourism boards to educate tourists on the

importance of preserving such places. Mental health organizations could encourage clients to utilize natural settings for their psychological benefits, and local businesses could offer guided experiences highlighting the island's aesthetic diversity.

- **Transportation Challenges:** Despite a preference for walking, many individuals rely on cars due to transportation limitations. Lack of affordable or available transport particularly affected female and migrant residents in our study. Improving sustainable transport options, such as public transport routes, ride-sharing services, and bike-sharing programs, could improve access to natural spaces. Collaboration between local authorities, local businesses and providers is essential to implement these initiatives effectively.

Supporting Engagement Through Group Initiatives: Using social and artistic methods can play a vital role in fostering nature engagement because they facilitate personal connections to the natural world. Collaborative efforts among various stakeholders, including community organizations, local government, and environmental groups, can enhance individuals' appreciation for and relationship with their natural environment.

Our case study on the Isle of Lewis has provided valuable insights into the diverse factors that enhance nature engagement among its residents. From strengthening social connections through community-led activities to addressing transportation barriers, the recommendations aim to deepen residents' relationships with their natural surroundings. By fostering communal experiences, promoting physical activity, and ensuring easier access to diverse natural landscapes, these initiatives can significantly improve the overall well-being of the community. Collaborative efforts between local government, community organizations, and other stakeholders are crucial to successfully implementing these strategies and ensuring sustainable engagement with the natural environment.

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Achiampong, L. (2016-2019). Relic Traveller. [Film series].	Breakwater (2020), Becoming Forest . [Healing project and radio programme].	Halilaj, P. (2021). Very volcanic over this green feather [Installation].	Pulejkova, K. (2018) Wedding Journey. [video installation].
Agyepong, H. (2020). Habitus: Potential Realities. [Photographic series].	Bruguera, T. (2019). School of Integration [Participatory art project].	Ifekoya, E. (2019). Contoured thoughts. [Film].	Sarkissian, H. (2016). Horizon [Two-channel moving image installation].
Akhavan, A. (2012). Study for a garden [Installation].	Caycedo, C. (2014). Land of Friends [Documentary film]. Available on artist's website: http://carolinacaycedo.com/land-of-friend-2014	Ishaq, A. (2018). Becoming nature [Sculpture and film installation].	Satir, A. (2019). The dancer's garden [Installation].
Akingbade, A. (2020). Hella Trees. [Photographic series]	Dawood, S. (2017). Leviathan. [Video installation].	Jano, J. (2022). Sonic Border. [Soundscape].	Silva, C. (2015). Garden State. [Art installation]
Akomfrah, J. (2015). Vertigo Sea [Three-channel video].	De Miranda, M. (2021). The island [Film]. https://www.galleriesnow.net/shows/monica-de-miranda-the-island/ ; https://monicademiranda.org/videos/the-island-a-ilha/	Johnson, R. (2020). Stacked heads [Sculpture].	Storr, R. (2017). The image that spits, the eye that accumulates [11-minute digital and Kodachrome Super 16mm film converted to HD].
Al-Khad, A., and James-Bayly, S. (2018). Anemone. [Short film].	Del Gado, J. (2014). The ringing forest [Looped video].	Karikis, M. (2020). Ferocious love [Film]. http://www.mikhailkarikis.com/category/all-projects/ferocious-love/	Tajik, I. (2020) Bordered Miles [Walk/performance and livestream].
Andujar, C. (2020). The Yanomami struggle [Exhibition featuring photographs, audiovisual installation, and drawings].	Distanced Assemblage (2021). Amber. [Walking performance].	Lee, J.J., & Molitor, C. (2022). A Thousand Words for Weather. [Sonic installation].	Tam, F. (2021). The Wanderlust Women [Short film].
Appiah, A. (2021). From the Maghreb [photo and poetry exhibition].	Dunne, B. (2016). Bring Them Back Alive [Film]. [7 minutes]	Lhuisset, É. (2018). L'Autre Rive [Photograph collection] Exhibited at Brighton Photo Biennial.	Thompson, M. (2013). Passing by [Painting].
Beatriz, E. (2019). Declarations on Soil and Honey [Exhibition].	Essi, U. (2021). From Where We Land. [Film].	Lima, I. (2012). Contact Zone [Single-channel film installation].	Walker, K. (2019). Fons Americanus [Sculpture].
Bo, Z. (2016). Pteridophilia. [Film series].	Ferreira da Silva, D., & Neuman, A. (2019) 4 Waters – Deep Implicancy [film installation].	Manna, J. (2022). Wild relatives [Film].	Wiley, K. (2017) Narrenchiff (Ship of Fools) [Painting].
Boswell, P. (2020). Transit Terminal [Sculptural drawing installation].		Martinac, J., & Willheim, C. (2021). The Brexit tree [Documentary].	Whittle, A. (2019). Between a whisper and a cry [Video installation].
			Zaman, R. (2019). Your Ecstatic Self. [Film].