CO-DESIGNING FOR NATURE CONNECTION IN ST. ANDREWS, FIFE

SOFIE BRØGGER
SUPERVISOR: DR. REHEMA WHITE

My gratitude is extended to Lord Laidlaw and the Laidlaw Scholarship Programme for Leadership and Research which has funded my research.

SCHOOL OF GEOGRAPHY AND SUSTAINABLE DEVELOPMENT

SUMMARY

Given the opportunity to do research and support a local project, I decided to dive into the topic of nature connection in urban environments by starting where I am with a local biodiversity project called 'Meadows in the Making' – a project aiming to establish a network of meadow habitat "for the benefit of people and pollinators" (1). My 6-week research project enabled me to explore what we can do with our green spaces to enhance nature connection for different types of people in peri-urban areas such as St. Andrews. In a world shaped by climate change and biodiversity collapse, it is increasingly important to address the widespread alienation from the natural world, especially in the West, to ensure that we adjust our lifestyles to live within the planetary boundaries (2). With more than 80% of the world's population expected to live in urban areas in 2050, it is instrumental to create space for nature within the built environment and, in doing so, employ efficient strategies to enhance nature connection – for the sake of public health and as a crucial part of solving the climate and biodiversity crises. To support nature connection in urban areas, I found that a holistic co-design approach is needed to provide accessibility for all local users, maximise space functionality and ensure co-benefits for human health and the environment.

METHODOLOGY & PROCESS

- **Semi-structured interviews** with key informants such as project partners of Meadows in the Making and professionals specialised in the design of urban green spaces.
- **Literature review** to understand the conceptual understandings and benefits of nature connection.
- **Case studies** to identify the best practices of holistic design strategies for urban nature connection.
- **Online questionnaire** to survey community attitudes towards the existing Meadows in the Making project and to invite the community to share their ideas and visions for their shared green spaces.
- **Project analysis** of Meadows in the Making using the 'Journey of Regeneration and the 9 Stepping Stones' as a framework, I have done an analysis to understand the status quo of the project and identify potential next steps.
- **Research findings** will be presented to the University of St. Andrews Environmental Sustainability Board and Transition St. Andrews and also be made publicly available and distributed to the project partners of Meadows in the Making.

"People talk about connecting to nature, but we are nature, we've just forgotten, that's all."
– Mary Reynolds

NATURE-DEFICIT DISORDER

As a testament to the widespread disconnect from nature in modern Western societies, "nature-deficit disorder" is becoming increasingly prevalent as most children in the UK spend less time outdoors than prison inmates (8).

WHY IS NATURE CONNECTION IMPORTANT?

HEALTH AND WELLBEING

At an individual level, nature connection has been proven to benefit our mental and physical health in three different ways; through attention restoration, stress reduction and 'biophilia' - the innate affinity humans have with the natural world as a result of co-evolving with it (3;10). Due to these benefits, doctor's have started to prescribe nature walks (4). In Japan, using nature connection for health benefits is practiced through 'forest-bathing' - spending time in forests. Studies show that natural oils released by trees have positive long-term effects on the immune system and increases the production of cancer-fighting cells. Short-term effects include boosts in mood and lower blood pressure which are effective for stress, anxiety and depression (5).

CLIMATE AND CONSERVATION ACTION

At a societal level, nature connection can help overcome environmental challenges such as the climate and biodiversity crises. People who are more connected to nature are more likely to adopt pro-environmental behaviours such as willingness to sacrifice, donating larger sums for nature protection, practicing environmentally conscious consumption and voting for political parties who are committed to sustainability action (6;7).

HOW DO PEOPLE CONNECT TO NATURE?

Different types of people have different ways of connecting with nature as it is a subjective and ongoing process (10). Studies have found contact, emotion, meaning, compassion, and beauty all are effective pathways for improving nature connectedness (9). This is important when designing green spaces in urban settings where space is constrained and is expected to fulfil a variety of functions. For some, exercise in nature is the preferred way of connecting with nature while for others it is gardening, birdwatching, meditating, foraging or doing arts. Therefore, avoiding a mismatch between design and use by making urban natural spaces accessible and attractive to all is essential to maximise the potential benefits of the spaces for everyone (11; 13). More research is needed to identify specific actions and practices that lead to nature connectedness in order to use resources for biodiversity conservation efficiently and ensure co-benefits for the environment and health (9; 11; 12).

Image credits: Mary Reynolds, Thomas Dambo, Carlotta Cardana/the Guardian, Hannah Bowey and Sofie Brøgger.

HOLISTIC DESIGN OPPORTUNITIES

- EDIBLE LANDSCAPES AND URBAN FOOD PRODUCTION
- ONLINE COMMUNICATION AND INTERACTIVE MAPS
- INTEGRATING ART, CULTURE & EDUCATION
- STRATEGIC PARTNERSHIPS
- CONNECTING THE SITES WITH CLEAR WALKING ROUTES
- COMMUNICATING LOCAL HISTORY THROUGH STORIES

CONCLUSION

I started this research to explore how holistic design can increase nature connection in urban areas such as St. Andrews as well as investigate the relationship between nature connection, health and overcoming environmental challenges. I found a holistic design approach and community consultation to be essential to ensure accessibility for all local users, maximise space functionality and create co-benefits for both human health and the environment. While I have not been able to include my survey results here, these have informed the type of solutions I have explored. Going forward, Meadows in the Making could benefit from doing focus group interviews and transect walks with locals in order to identify the best holistic design opportunities for the local context in St. Andrews.

REFERENCES

1) Transition St. Andrews (2022) *Meadows in the Making.* https://transitionsta.org/greenspace/meadows-in-the-making/
2) Rockström et. al. (2009) 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity', Ecology and Society, 14(2).
3) Kellert, S.R. and Wilson, E.O. (1993) The Biophilia Hypothesis. Washington, D.C.: Island Press.
4) Mock, Jillian. Time Magazine (2022) *Why Doctors Are Prescribing Nature Walks*. https://time.com/6171174/nature-stress-benefits-doctors/
5) Li, D.Q. (2018). *Shinrin-Yoku: The Art and Science of Forest-Bathing*. Italy: Penguin Life.
6) Davis J.L., Le B. and Coy A-E. (2011) 'Building a model of commitment to the natural environment to predict ecological behavior and willingness to sacrifice', Journal of Environmental Psychology, 31: 257–265.
7) Soga M. and Gaston K.J. (2016) 'Extinction of experience: The loss of human- nature interactions', Frontiers in Ecology and the Environment, 14: 94–101.
8) Carrington, D. (2016) Three-quarters of UK children spend less time outdoors than prison inmates – survey. Available at: https://www.theguardian.com/environment/2016/mar/25/three-quarters-of-uk-children-spend-less-time-outdoors-than-prison-inmates-survey
9) Lumber R., Richardson M. and Sheffield D. (2017) 'Beyond knowing nature: Contact, emotion, compassion, meaning, and beauty are pathways to nature connection', PLOS ONE 12(5): e0177186.
10) Capaldi, C. A., Passmore, H. A., Nisbet, E. K., Zelenski, J. M. and Dopko, R. L. (2015) 'Flourishing in nature: A review of the benefits of connecting with nature and its application as a wellbeing intervention', International Journal of Wellbeing, 5(4), 1-16.
11) Bell, S., Graham, H. and White, P. C. L. (2018) 'The role of managed natural spaces in connecting people with urban nature: a comparison of local user, researcher, and provider views', Urban Ecosystems, 21: 875–886.
12) Beery, T.H. and Wolf-Watz, D. (2014) 'Nature to place: Rethinking the environmental connectedness perspective', Journal of Environmental Psychology, 40: 198-205.
13) Kindermann, G., Domegan, C., Britton, E., Carlin, C., Mashinchi, I.M. and Ojo, A. (2021) 'Understanding the Dynamics of Green and Blue Spaces for Health and Wellbeing Outcomes in Ireland: A Systemic Stakeholder Perspective', Sustainability, 13, 9553.