



greenminds

greenminds insight paper

**Apprenticeships
for Land Management:
The Role of Nature
Connection**



Green Minds Model summary

The Green Minds Model aims to summarise the structure of the GM approach, to aid its transfer and replication to other urban areas and authorities.

Green Minds piloted new ways of implementing nature-based solutions within an urban environment. The project's central aim was to collaborate with stakeholders to recognise how humans, as part of nature, interact with nature in a complex system and to identify ways in which *systemic* change is brought about.

The model is presented as an integrated approach, where various nested elements are shown working together as a system. It reflects the particular challenges and scales of focus in urban areas - from individuals, to communities and neighbourhoods and at a citywide level. It focuses on particular leverage points for change (best practices) with regard to nature in cities, and is guided at its core by a set of underlying principles to inform practice.

At the centre of the model sits the system goal - *Urban Wilding. A set of guiding Principles have been created to inform the practice of Urban Wilding. These principles have emerged from our experiences designing and implementing Urban Wilding in Plymouth.

The eight Principles that have emerged from our programme of testing and development represent key leverage points to effect system change and to successfully integrate nature within urban place shaping. This includes exploring deeply held beliefs and values around our relationship to nature and to others, the creation of new organisational and digital infrastructures which empower citizens, and the development of new policy, planning and financial frameworks to support this.

Complex systems can behave differently at differing scales and so these are reflected too in the model to recognise the importance of understanding *who* needs to be engaged and *how*. This takes into account the need for multiple perspectives and the importance of equity (who participates), through an

inclusive process of engagement from individuals to groups and organisations, and at neighbourhood and citywide scales.

Finally, the model acknowledges the importance of an ongoing and iterative co-design process. This process recognises that resilience requires the ability to adapt as solutions emerge within a complex and constantly changing environment. It is delivered through a cyclical, action learning approach in which lessons learned influence the next cycle of implementation to ensure a progressive approach.

The model is brought to life through our suite of Insight Papers, Guides and Case Studies which aim to illustrate how the model was implemented and what we learnt.

Green Minds Urban Wilding Principles

The quality and quantity of nature has declined significantly in recent decades. Across the UK and Europe, nature recovery and restoration, rather than just preserving or conserving what remains, has become a high priority, as we have become more aware of society's dependence on nature[1].

We know that spaces that are more biodiverse can deliver multiple health and wellbeing benefits as well as other nature-based solutions such as improvements in water drainage, increased carbon sequestration, removal of air pollutants and increased pollination for food security[2]. 'Rewilding' has gained prominence as one approach to achieving such improvements in biodiversity, with a growing research body assessing its impact.

Urban (re)wilding, however, is still a new concept. We define Urban Wilding as 'any initiative, both human-aided and natural colonization, that aims to encourage biodiversity, ecosystem function and native species in urban settings'[3].

Urban Wilding is fundamentally different from wilding/rewilding/renaturing elsewhere. Cities and towns are dominated by human infrastructure and activity. Consequently, many natural ecosystem processes are significantly modified or constrained in urban areas. We rely upon ecosystem services for our health and wellbeing. Urban ecologies, which deliver these ecosystem services, are complex and poorly understood. However, we know that more biodiverse systems deliver more or better ecosystem services. We also know that we can mimic, or engineer, some specific ecosystem services such as storm water management. Whilst we don't know enough to design urban ecosystems to deliver all the services we need, we do know that more nature is good for people and urban living and that arranging it in certain ways can deliver certain specific benefits. We can't achieve this by doing nothing - positive interventions are required, which in turn demand enabling policy, community action and practical delivery mechanisms.

The Green Minds understanding of Urban Wilding recognises the need to shift from nature conservation to nature recovery - to focus on restoring much of what is rare or has gone and a recognition that we need to bring high quality Nature into places where people live.[4]

The Urban Wilding Principles below are designed as a set of prompts to help guide initiatives for nature to thrive in cities: to survive and reproduce, to expand, and to function as a system and so deliver more and better services to support urban environmental health, our economy, and human wellbeing.

*We have chosen to use the term 'wilding' instead of 'rewilding', as it better reflects the reality of nature in urban areas - to rewild implies a return to nature before urbanisation, which is not possible.

[1] Nature Recovery for Our Survival, Prosperity and Wellbeing: A Joint Statement by the Statutory Nature Conservation Bodies of the UK. jncc.gov.uk/our-role/the-uk/nature-recovery-joint-statement

[2] Dasgupta, P. (2021). The Economics of Biodiversity: the Dasgupta Review. London (HM Treasury); Maller, C. (2018) Healthy Urban Environments. Routledge

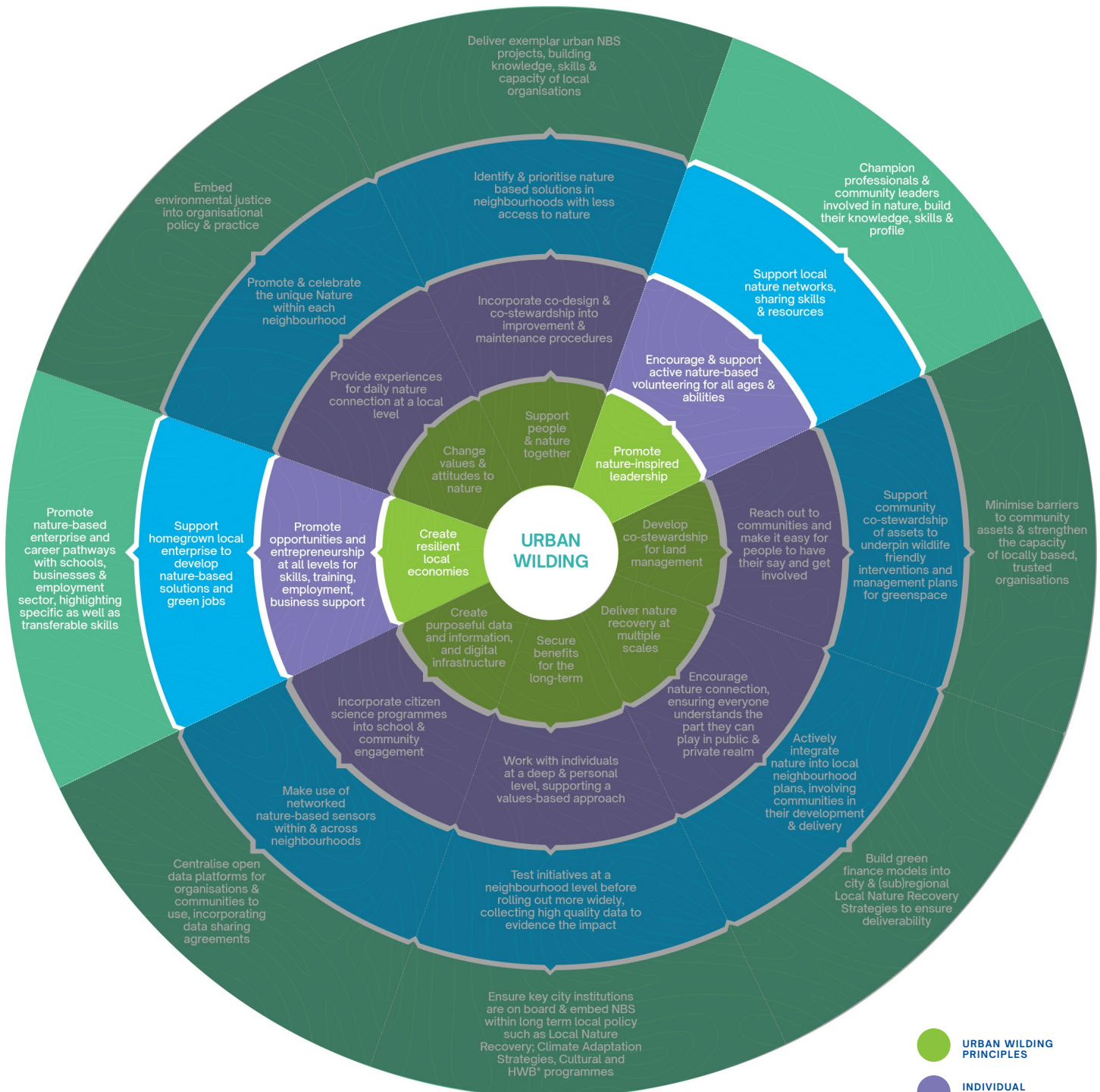
[3] Maller, C., Mumaw, L., & Cooke, B. (2019). Health and social benefits of living with 'wild' nature. Ch 9 in Rewilding. Pettorelli, N., Durant, S., and du Toit, J. (eds). Cambridge University Press

[4] Juniper, T. (2022) Tony Juniper: Green Paper - an opportunity for an integrated approach to Nature recovery - Natural England

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The model illustrates the three system levels at which the Urban Wilding principles are applied to drive action: the individual, with neighbourhoods, and within organisations.

Permeability, both within and between segments, reflects the need for adaptability through local learning gained through an action learning approach, in which lessons learned influence the next cycle of implementation.



Urban Wilding Principles



Support people and nature together

Promote a just transition to wilder cities through equitable access to nature, socially just policy and involvement in the co-creation and co-stewardship of nature-based solutions that are adapted to climate change, biodiverse and support nature connection.



Promote nature-inspired leadership

At all levels of management (individual, community/neighbourhood, city administration, business, etc) enable nature positive actions to enhance urban liveability through education, training, and policy.



Develop co-stewardship for land management

Democratise land management and ownership through the development of co-stewardship solutions with user communities, introducing inclusive and empowering processes for engagement, creating community assets, and utilising diverse governance structures.



Deliver nature recovery at multiple scales

Make the most of the local built environment and its scale, acknowledging that no space is too small to be valuable whilst at the same time recognizing that larger green spaces and high degrees of connectivity are key for nature recovery.



Secure benefits for the long-term

Develop integrated policy instruments that embed urban wilding in development practice, led by communities and advised and supported by public administrations to create resilient cities and a population connected to nature.



Create purposeful data and information supported by digital infrastructure

Develop new digital infrastructures to generate community-owned and insightful knowledge of urban nature to support nature connection, and nature-positive policy and practice.



Create resilient local economies

Promote and empower nature-related careers, cooperatives and social enterprise across all sectors, to create new jobs and new value in green and blue infrastructure.



Change values and attitudes to nature

Promote nature connection amongst citizens, to enhance individual and community wellbeing and to foster nature-positive choices.



Introduction

The current biodiversity and climate crises require a green skills workforce who can take a system-wide view of management and support the creation of nature recovery networks through urban wilding.

Apprenticeship schemes are an important pathway to employment within the green skills sector. However, green skills apprentice training schemes often focus on the physical skills (e.g., tree planting) required for the management of nature but do not connect how an intervention in one area (e.g., the treatment of weeds) may impact or influence outcomes in another (e.g., downstream). This can lead to a disconnection in the management of nature across an urban landscape. So, it is important for our workforce to acquire a high degree of 'Nature Connection', enabling them to spot opportunities for positive change.

In the Green Minds project, with the support of Devon Wildlife Trust, National Trust, and Devon Biodiversity Records Centre, we led a programme of training on 'best practice for nature-led land management' to complement Plymouth City Council's land management apprenticeships. Alongside this training we worked with the University of Plymouth to find out the apprentice's motivations; how the Green Minds training influenced the apprentice's attitudes to nature, and how the apprenticeship scheme influenced their well-being.

The information gathered from this research can be useful for managers, natural infrastructure officers, and apprenticeship training providers to develop future cohorts of land managers with the green skills to connect nature for the benefit of the climate and biodiversity.



'One of the things that I learned so far with this apprenticeship is that nature is community, nature is being together and doing something for someone else. You can do your garden just for yourself, but then you also have to consider wildlife, and so it's such a complex world that you have to consider other than yourself. I have most recently learnt about intersectionality from Poole Farm'

INTERVIEW, APRIL 2022



The programme

‘Best practice and impact of Nature Connection’

The training sessions

Five training sessions were developed between Green Minds partners at the University of Plymouth and Devon Wildlife Trust. These sessions included theoretical and practical knowledge relating to terrestrial and marine environments and were aimed at creating a ‘green-blue’ interface.

- Tree planting
- Terrestrial biodiversity theory
- Terrestrial biodiversity practical
- Marine biodiversity theory
- Marine biodiversity practical



Biodiversity practical training

In May 2022, a training day event was held at Poole Farm. This was a practical training session on UK ecology and biodiversity led by Devon Biodiversity Records Centre (DBRC) as a follow up from the February theory session.

What happened?

The session was focused on biodiversity surveying techniques in the field. DBRC led a quadrat demonstration and identified differences between common grasses and wildflowers in the meadow at Poole Farm. Methods for repeatable biodiversity surveys were discussed, and the apprentices were given an opportunity to participate in their own biodiversity survey in the field, in small groups. DBRC supplied a diverse array of identification guides which the apprentices were encouraged to look through, and was on hand to answer any questions. Methods for bee and butterfly identification and transect surveys were discussed, although the windy weather in the afternoon meant that a practical demonstration was not possible at that time.

Key findings

Overall, following the training event, the collective group reported an increase in personal confidence about understanding ecology and biodiversity monitoring and an increase in self-reported wellbeing. Apprentices also reported that participation in the day event was likely to lead to them to enact other pro-environmental behaviours in the future.

What did the apprentices think?

When asked, 'how will this training session help you in your role as an apprentice/in your role?', the apprentices responded:

- Useful for field ID and meadow management
- It will help me understand how surveying takes place and its importance
- I will be able to monitor the grounds at Poole Farm
- Understanding species (plants) and biodiversity methods

'The biodiversity surveying techniques developed my knowledge in situations I see daily and areas directly affected by my action in my job.'

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Marine biodiversity practical training

Wembury Marine Centre

In May 2022, a practical and specialised training session on marine conservation and identification was led by The Marine Biological Association. The session began with a presentation about marine-life in Plymouth Sound, including an interactive quiz ‘home or away?’, information about legal protection, marine protected areas and habitats, and a reflection on our connection to the sea and how we all benefit from a healthy ocean. The presentation discussed the interconnectedness between the city and the sea, the parks and the coast, sewerage/overflow/drainage systems in the local context of Plymouth and the designation of Plymouth Sound National Marine Park. The MBA provided a diverse array of identification guides, and further links and resources were shared following the session.

At the tide line on Wembury Beach, the group gathered items found on the strandline and put them in a bucket. These items were sorted into ‘anthropogenic’ (human made), ‘terrestrial’ (of the land) and marine (‘of the sea’). Items found included sand hoppers, hold fast kelp, wire weed, mermaids purses, cuttlefish, micro-plastic. After exploring the marine life in the rock pools, there was an exercise where individuals were asked to create and justify a Marine Protected Area, in relation to the theoretical context given of habitats, potential threats and legal protection discussed in the morning session.

Key findings

Overall, following the training event, the collective group reported an increase in personal confidence in understanding the marine context of Plymouth Sound and surrounding area and an increase in self-reported wellbeing. Apprentices also reported that participation in the day event was likely to lead to them enacting other pro-environmental behaviours in the future.

What did the apprentices think?

When asked, ‘how will this training session help you in your role as an apprentice/in your role?’, apprentices responded:

- It has helped me understand how connected the shore and coast is to the land
- More knowledge on how day to day role affects the rest of the environment, even in towns
- More knowledge of why we are designating MPAs and what values they have
- It will give a deeper understanding of Plymouth and its natural diversity
- Gives me new context between link of green and blue

Apprentices' changed attitudes over time

What we found

This research took place between April 2021 and June 2022, and consisted of a baseline survey, qualitative interviews, and focus groups.

Motivations for joining the apprenticeship¹

All the apprentices stated that their motivation to join the apprenticeship was to 'learn new skills'. Other factors included wanting to learn more about nature, to spend more time outside, and to make a difference in their local area.

Skills, nature knowledge, and confidence¹

All apprentices reported learning new skills, and that opportunities to use these skills contributed to increases in confidence. Green Minds training events were shown to increase apprentice knowledge of biodiversity and the likelihood of continued pro-environmental behaviours in their own lives, such as volunteering to help the environment, educating others using what they had learned, or partaking in activities such as planting trees or monitoring biodiversity. Additionally, all apprentices reported sharing their new knowledge with friends and family.

Health and Wellbeing¹

Between the 2021 and 2022 surveys, the apprentices reported happiness remained constant with a slight decrease in average levels of reported anxiety. However, specific worries about future jobs, politics, and climate change increased from 2021 to 2022. The apprentices broadly agreed

with statements listing the mental, physical, and social benefits of spending time in nature. The majority of apprentices agreed that being in parks and by the coast 'makes me happy'. The majority also agreed that 'I feel less anxious when by the sea' and 'in parks'. Apprentices reported that participating in Green Minds training improved their overall wellbeing.

Connections with green and blue spaces¹

The apprentices reported that they sought to spend more time in nature as a result of the Green Minds training programme, increasing from spending time in nature 'more than twice a week but not every day' in 2021 to 'every day' in 2022. This includes increasing the time spent in blue spaces.

CHANGING PERSPECTIVE OF PLYMOUTH

'I did think of Plymouth as a bit grey, and a bit not good to look at, but finding out it is one of the greenest cities in the country, and trying to link up all these different green spaces. I'm glad to be part of such a project'

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OCTOBER 2022

¹ McGrath, E., 2022, Rees, S. Green Minds Apprentices: changes over time, WP5. A report by research staff at the Marine Social Science Unit, University of Plymouth, pp.1-42.

A manager's perspective

In early May 2023, the land managers in Plymouth City Council overseeing the Green Minds apprenticeship programme met to share their thoughts on the value, challenges, and future of land management apprenticeships in Plymouth City Council. These key themes emerged.

The need for supplementary training on wildlife-friendly practices

Working in partnership with Devon Wildlife Trust and Devon Biodiversity Records Centre, they were able to access best practice training for wildlife-friendly land management, which would not otherwise have been possible.

This additional training was able to be extended to Council staff, alongside the apprentices which supported dissemination and sustainability of new ways of working. To continue this relationship going forward, Green Minds is looking to create an online training 'hub' to share training opportunities and case studies showing how wildlife friendly practices have been applied across the Estate.

Value of apprenticeships

There is a growing recognition of the 'ageing workforce' of the land management sector, with members of staff possessing a wealth of knowledge, but often without an upcoming generation to pass it onto. The managers stressed the importance of apprenticeships in aiding in the continuity and exchange of skills and knowledge to support a 21st century workforce that can respond effectively to biodiversity and climate challenges.

They also spoke of apprentices 'complementing the existing workforce' and of the value of apprentices bringing additional capacity and new perspectives from their various backgrounds. Apprentices were seen as a 'positive influence' bringing 'motivation', 'enthusiasm', and 'positivity' to their teams.

6 of the 7 apprenticeships have moved onto contracts with the Council or other land

management organisations in the city and the managers felt that this clearly demonstrated the value of investing in land management apprenticeships for the wider ambition of the Council and the city to value nature.

'Doing things differently' requires additional resources

The aim of the Green Minds apprentice programme was to support a new generation of land management apprenticeships with a focus on biodiversity and climate friendly practice. However, managing a cohort of apprentices on different courses with different colleges required additional manager time. Due to staff changes and the impact of Covid, this proved challenging, and Green Minds is aware that, at times, the apprentices felt unsupported or unclear of their role and value within the organisation. Moving forward, Green Minds proposes to:

- Develop a 'Handbook' to increase clarity around expectations of apprentices as well as managers.
- Increase frequency of meetings between apprentices, managers, and college tutors.
- Facilitate training and support for managers to support additional needs of apprentices (e.g. time management of apprentices, training).
- Cultivate a progression route for apprentices, including participation in the recruitment and onboarding of future cohorts and working with other land managers in the city to promote opportunities beyond the Council.
- Establish a method of evaluation to demonstrate the value of alternative ways of working.

7 Relevance to urban placemaking

Establishing a conduct of best practice for nature connection and wildlife friendly practices is essential for cultivating a land management workforce with the green skills necessary to put nature at the heart of decision making.

As Plymouth strives to be an outstanding place to live and work and the UK's first National Marine Park city, it is important to ensure that the workforce driving Plymouth place-making embodies a deep connection to the natural environment.

Not only is this vital for Plymouth and the Green Minds partners, but also for cities around the world, helping them to deliver a systems approach to nature-based solutions, starting with their current apprentices and future land managers.

‘Before I was very much into nature and I always was thinking thoughts such as “how pretty is that tree” and “oh it’s nice that there’s this park here”, but I would never really think about it that deeply. Maybe actually it’s the connection between the things that is more prominent to me now, whereas before it was very separate...that’s been a big change for me’

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A report by research staff at the Marine Social Science Unit, University of Plymouth, pp.1-42

