Protecting and developing Ireland's green and blue spaces to benefit our health and wellbeing

Human health protection is a fundamental aspect of environmental protection. Our health is impacted by the air we breathe, the water we drink, the noise levels we experience, the food we eat, the spaces we spend time in, and our sense of wellbeing.

Research can provide the evidence needed to help government and others in making decisions and investments to protect and develop our green and blues spaces for the health and wellbeing of Ireland's citizens. Green and blue spaces include, for example, urban parks, coasts, lakes and rivers, forests and bogs.

In 2015 the Environmental Protection Agency (EPA) and the Health Service Executive (HSE) jointly funded a research call to support the implementation and goals of Healthy Ireland, the national framework for action to improve the health and wellbeing of the people of Ireland. These goals are to:

- increase the proportion of people who are healthy at all stages of life.
- reduce health inequalities.
- protect the public from threats to health and wellbeing.
- create an environment where every individual and sector of society can play their part in achieving a healthy Ireland.

Three research projects were funded:

- **GBI-Health:** Green and Blue Spaces and Health: A Health-led Approach, led by Maynooth University.
- **Eco-Health:** Ecosystem Benefits of Green Space for Health, led by University College Dublin.
- **NEAR Health:** Nature and Environment to Attain and Restore Health, led by National University of Ireland, Galway.

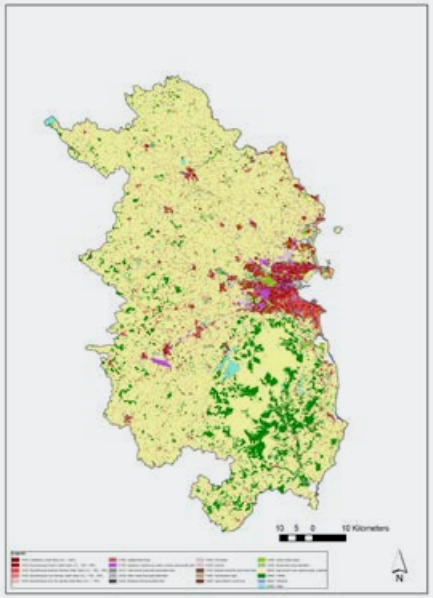
Their findings build an evidence base on the environmental determinants of health and wellbeing and provide novel toolkits to build capacity, develop and transform knowledge for communities, policy-makers and practitioners. The three projects examined the inextricable link between planetary health and human health. They investigated in different ways the value of green and blue spaces as part of Ireland's essential health infrastructure.

Access to nature, specifically to green and blue spaces, contributes significantly to our physical health (playful places), our mental wellbeing (as restive or restorative places) and reconnects us with nature while helping to future-proof society in the face of wider environmental risks. These benefits emphasise the need for a multidimensional policy response for green and blue space creation, maintenance, restoration and protection.

Informing Policy

The three projects contribute to the integration of health and environmental policy in Ireland through advancing our understanding of the environmental and social determinants of health and the potential of mainstreaming health in environmental protection through a 'health-in-all-policies' approach, while also identifying pathways for mainstreaming Ireland's response to the UN's Sustainable Development Goals.

GBI-Health project



Using innovative Geographic Information Systems (GIS), spatial modelling and statistical analysis, *GBI-Health* identified evidence for direct positive relationships between the presence of green and blue spaces and a number of health indicators, including self-reported health, mortality and disability, with additional mediation for deprivation. The health indicators used in the study were focused on publicly available data at a range of aggregated spatial scales, from small area up to county level. In addition, the project provides a critical data audit on both barriers to and positive suggestions on ways to develop a fuller public evidence base for area-based health research. The findings will inform a number of national agencies and service providers, including the HSE, the Department of Health and the cross-departmental Healthy Ireland initiative.

Eco-Health project

(image credit: Alt Urbanism)

Building on this spatial and geographic analysis, the *Eco-Health* project focused on how integrating health and environmental policy can advance the concept of 'healthy places'. *From the perspective of spatial planning*, healthy places are increasingly espoused internationally and nationally. By enhancing the provision and design of green spaces, local authorities and public agencies can contribute towards key objectives within the *National Planning Framework* (2018) relating to healthy communities, compact growth and sustainable land-use management. However, while such policy guidance clearly supports an emphasis on green space provision for population health and wellbeing, it does not provide detailed guidance for planning and design policy in terms of the specific attributes required to tackle lifestyle illnesses in multiple cohorts. Eco-Health aims to address this gap.

NEAR Health project

(image credit: Ruth Graham www.ruthgrahamdesign.com)

The *NEAR Health* project demonstrates to state agencies, regulators and policy makers the role of blue and green spaces in enhancing ecosystem and human health and resilience. Through focusing on 'sustainable living', the NEAR Health project advances a healthy future framework to contribute to national priorities identified in the National Planning Framework (e.g. sustainable communities), National Biodiversity Action Plan Targets (e.g. Target 3.1), and linking these to specific health policies, including: A Healthy Weight for Ireland: Obesity Policy and Action Plan 2016-2025, the National Physical Activity Plan; Sharing the Vision: A Mental Health Policy for Everyone; Connecting for Life (national suicide strategy); Social Inclusion and Community Activation Programme, and National Countryside Recreation Strategy, including Leave No Trace. The project demonstrates the value of citizen science approaches within existing outdoor activities, e.g. to connect the National Physical Activity Plan with monitoring schemes run by the National Biodiversity Data Centre.

Developing Solutions

The three projects provide new data to understand the relationships between environmental quality and positive health outcomes in an Irish context, while also providing guidance for enhancing these relationships and the co-benefits derived from public health and environmental policies.

For example, employing statistical modelling, *GBI Health* documents magnitudes of associations of green and blue space elements with health status. It also identifies a pathway for further work in two ways. Firstly, by demonstrating techniques to collate, overlay and aggregate health data across different scales of analysis. Secondly, by providing a critical analysis on the availability of health data, with an emphasis on gaps and access issues, but also opportunities associated with the rapidly developing availability of health data.

NEAR Health and *Eco-Health* sought to translate '*knowledge to action*' through developing novel methodologies for participatory data collection and through producing toolkits and 'how to' guides aimed at policy and practice.

The Eco-Health project identified key design principles to maximise green spaces as health promoting environments. It developed these into a 'how to' design guidance aimed at local authorities and green space managers. Key principles identified include:

- **Accessible spaces** with good links (pedestrian and cycleways) to nearby neighbourhoods.
- **A networked approach**, emphasising *green infrastructure* networks (rather than isolated parks) that can provide new opportunities for connecting existing and new green spaces and creating new linkages between urban and rural areas.
- **Inclusive in design**, catering for local needs from young to old and all physical abilities. Green spaces that are designed to support very specific functions tend to attract limited groups of users.
- **Well-managed and maintained** creating a high-quality environment: poorly-managed spaces or vandalism prompt negative perceptions among potential users.
- **Multifunctional uses**: examples include spaces that encourage active mobility, physical activity and sports, relaxation and tranquillity, and opportunities for social exchange (e.g. incorporate community gardens, encourage park runs etc).
- Enhance urban greening through **planting strategies** that mitigate noise and air pollution and maximise local biodiversity gain and facilitate sustainable drainage (e.g. deciduous wooded and wildflower meadow areas).
- *Create multisensory **restorative environments** that help mitigate the psychological stresses of modern living through the provision of 'restive places for rejuvenation'.*

NEAR Health emphasised '**participatory practice' to co-produce or co-design** novel approaches to promoting sustainable living. Recognising the lack of accessible 'how to' guides, a toolkit was created to share ideas and insights, tools, processes and practices for how we might connect individuals and communities with nature to benefit their health and wellbeing. The toolkit highlights: (1) how people value and experience nature, health and wellbeing; (2) the barriers and bridges to nature connection; (3) what people want from their healthy future environment; and, (4) how nature-based activities can benefit their health and wellbeing, develop a deeper connection with their wider community and with nature. Connecting with nature helps people to care more for the environment.

Related EPA Research Publications

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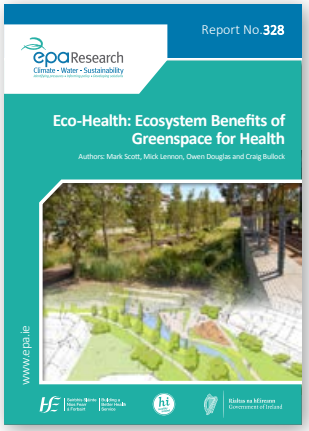

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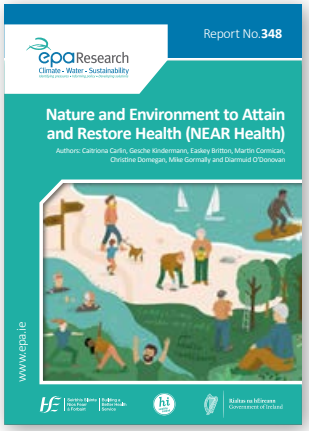

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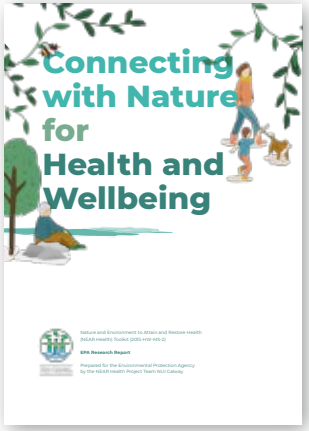

- **1)** Research 264: Green and Blue Spaces and Health: A Health-led Approach
- **2)** Research 328: Eco-Health: Ecosystem Benefits of Greenspace for Health
- **3)** Research 348: Nature and Environment to Attain and Restore Health (NEAR Health)
- **4)** NEAR Health Toolkit

Key Findings

Diverse methods were applied by all three projects but common findings indicate the robust evidence based established by the teams. The three projects confirm that there are quantifiable physical, mental, social health and wellbeing benefits from green and blue spaces. There are however gaps in our knowledge relating to understudied cohorts, habitats, and opportunities exist to maximise health data availability and spatial analyses. Individuals in rural and urban locations need a relationship with nature. NEAR Health and Eco Health used very different methods to elucidate the features of a healthy resilient restorative environment, but their findings are the same. These features must be combined to create, enhance and repair spaces that are close to where people spend most of their time, and are welcoming for and appealing to all ages and abilities. These multi sensory, multifunctional spaces support people and nature and promote resilient health communities and environments.